Sepsis, Infection, Immunity_2 A001

The dose related effect of systemic antibiotics in prevention of postoperative adhesion formation in experimental animals

Abbas Mohamed1, Nafeh Ayman2, Elsabeh Magdy MA3 and Farouk Youssef4

1Department of General Surgery-Theodor Bilharz Research Institute, Cairo, Egypt, 2Department of General Surgery-Theodor Bilharz Research Institute, 3Department of General Surgery-Theodor Bilharz Research Institute, 4Department of General Surgery-Theodor Bilharz Research Institute (magdeyoloha@hotmail.com)

Sixty Wistar-Albino rats weighing 200–250 g were assigned to 2 main groups, of 30 rats each. Animals in the first main group (GI, n = 30) were injected intramuscularly with 1 ml saline, half an hour preoperatively (The main antibiotic group). In the second main group (GII, n = 30) animals were injected with 50 mg/kg cefepime HC (Maxipine, BM, Egypt) and 7.5 mg/kg metronidazole (Flagyl, Aventis, Egypt) in a volume of 1/2 ml for each (The main antibiotic group). After a midline laparotomy was performed, abdominal adhesions were induced in all animals. After operation, animals in the main control group were submitted according to the numbers of postoperative intramuscular saline injections into 2 subgroups; GIA (n = 15) in which animals were injected every 8 hours for 2 days and GIB (n = 15) where animals were injected every 2 hours for 5 days. Similarly, the main antibiotic group was subdivided into GIIA (n = 15) and GIIb (n = 15). On the 14th day, the rats were killed and the adhesion score was determined.

Results: Short course of antibiotic significantly decreased the extent of postoperative peritoneal adhesions (P < 0.05), while the severity of adhesions did not show significant changes. The 5 day course of antibiotics revealed significant reduction in both the extent (P < 0.001) and severity (P < 0.01) of postoperative peritoneal adhesions. To conclude, short course antibiotics, which have been the standard regimen for prophylaxis against surgical infection, did not show significant reduction of postoperative intra-abdominal adhesions in experimental animals. A 5 day course of antibiotics significantly decreased the incidence, extent and severity of postoperative intra-abdominal adhesions. However this 5 day course should not be described routinely in abdominal surgery practice. It may be indicated in prolonged abdominal operations, surgery on the bowels, history of recurrent adhesive intestinal obstruction or relaparotomy operations.

Cardiovascular, Thoracic_1 A002

Concentration and activity of matrix metalloproteinases and tissue inhibitors of metalloproteinases in the wall of abdominal aortic aneurysm at different wall stress

Abdul Rahman M NA1, Heng M S T2, Fagan M1, Greenman J4, McCollum P T9, Chetter C G9

1Academic Vascular Surgical Unit, Hull Royal Infirmary, 2Academic Vascular Surgical Unit, Hull Royal Infirmary, 3Medical Engineering Department, University of Hull, 4Bioscience Department, University of Hull 5Academic Vascular Surgical Unit, Hull Royal Infirmary, 6Academic Vascular Surgical Unit, Hull Royal Infirmary (hishami.abdulrahman@hey.nhs.uk)

Background: AAA formation and development occur due to excessive extracellular matrix degradation which is closely regulated by matrix metalloproteinases (MMPs) and their inhibitors (TIMPs). It is suggested that variation in wall stresses may be influential in this regulation. We aimed to assess the impact of high and low wall stress on MMPs and TIMPs and to compare this with controls.

Method: We recruited 22 patients undergoing elective AAA repair and 8 patients undergoing (CABG) as controls. A 3D CT reconstruction of AAA was performed and analysed using FEA for wall stress calculation, where samples were taken. Ascending thoracic aorta samples obtained during CABG were used as controls. All samples were snap frozen and analysed for MMP 2, 8 and 9 and TIMP 1 and 2 using ELISA. Statistical analysis was performed using SPSS v14.

Results: All results are in median and IQ range. High wall stress low wall stress control MMP 8 active 5.8 (2.6 – 9.9) 6.3 (3.8 – 10.8) 3.5 (2.6 – 5.0) MMP 8 total 14.2 (8.9 – 43.6) 13.3 (9.2 – 31.0) 6.3 (3.2 – 13.4) MMP 9 active 0.4 (0.29 – 1.39) 0.6 (0.29 – 0.86) 14.8 (7.2 – 18.1) MMP 9 total 8.1 (3.6 – 16.1) 8.3 (5.0 – 11.6) 25 (19.0 – 61.0) TIMP 1 296 (164 – 522) 176 (82 – 321) 130 (83 – 221) TIMP 2 2.5 (11 – 45) 18 (10 – 35) 174 (134 – 232) = p < 0.05 compare to control.

Conclusion: Concentration and activity of MMPs and TIMPs in the wall of AAA may be influence by variation in wall stress.

Oncology_2 A003

Androgen receptors and reaction for hormonotherapy in lymph node-positive and lymph node-negative women with breast cancer

Agrawal Anil Kumar1, Zukrowski Piotr2, Grzebieniak Zygmunt3, Jelen Michal4, Slonina Joanna5

1 2nd Department of General and Oncological Surgery Wroclaw Medical University, Poland, 2 2nd Department of General and Oncological Surgery Wroclaw Medical University, Poland, 3 2nd Department of General and Oncological Surgery Wroclaw Medical University, Poland, 4 Department of Pathology Wroclaw Medical University, Poland, 5 Department of Radiology Wroclaw Medical University, Poland (zukrowski.piotr@wp.pl)

Introduction: Hormonotherapy in women with locoregional breast cancer improve prognosis when estrogen receptors or/and progesterone receptors are positive. The role of the androgen receptors (AR), that are also one of the family steroid receptors, is discussed. It is important because of 10% women have only androgen receptors on cancer cells. So the question is: should they get hormonotherapy?

Purpose of the study: We’d like to find any correlations between AR, metastases to the regional lymph node and with answer for hormonotherapy.


Results: Androgen receptors were positive in 329 women (45.5%). The most of them didn’t have metastases to regional lymph node – 170 (51.7%). Whears many patients AR(+) has breast cancer with N2 or N3. In group with AR(+) and LN(+), that got hormonotherapy 5-years survival was 16% higher and the local recurrence was twice less than women with AR(+) and LN(+), that didn’t get hormonotherapy.

Conclusions: Androgen receptors are the most common steroid receptors on breast cancer cells. They were found often in women with stage N2 and N3. The prognosis was better in women with AR(+) and LN(+) who get hormonotherapy. We need more study to recommended hormonotherapy in every women with AR(+) as routine postoperative treatment in women with breast cancer.
Comparison of “Read-Rives” and ‘Lichtenstein’ repair for treatment of unilateral inguinal hernia: Prospective randomized controlled clinical trial.

Akhavan Moghaddam Jamal1, Mehrvarz Shaban2
1 Dept. of Surgery, Baqiyatallah University of Medical Sciences, Tehran, Iran, 2 Associate Professor of Surgery, Baqiyatallah University of Medical Sciences, Tehran, Iran (mehvarz@bmsu.ac.ir)

Lichtenstein tension-free mesh repair is the most common surgical techniques used for inguinal hernia repair. In this technique the mesh is placed on the floor of inguinal canal, so an attenuated fascia remains under the mesh, it is a potentially weak point for recurrence. “Read-Rives” method is tension-free, mesh hernioplasty too, but here prosthesis is placed under the transversus fascia just over the peritoneum, and there is not weak area. The aim of this study was to compare the results of ‘Read-Rives’ and Lichtenstein method in the inguinal hernioplasty.

Methods and Material: In this prospective randomized clinical trial 126 patients who had unilateral inguinal hernia were included: 64 patients operated with Lichtenstein and 62 patients operated with Rives method. They evaluated for early post-operative complications (i.e. infection, hematoma, unusual pain), duration of surgery and hospital stay, return to normal activity, and then they followed for recurrence of hernia.

Statistical analysis used: Statistical analysis was performed using the T test and fisher exact analysis. 95% confidence intervals were maintained and standard deviation, risk ratio, odds ratio and P probability were calculated.

Results: Early and late postoperative pain was significantly lower and the return to normal activity was shorter in Rives group (9.6 versus 12.1 days). Duration of surgery and hospital stay and recurrence rate was equal, lower postoperative wound infection was found within Rives method (3 vs.1, P value NS).

Conclusions: Although the ‘Read-Rives’ method is not technically as simple as ‘Lichtenstein’ method, but this procedure is easy to learn, so is recommended because of its better final outcome in compare with Lichtenstein repair without increasing in operative time and cost.

Effects of the p53 inhibition (Pifithrin-α) on the necrotizing pancreatitis in rats

Alhan Etem1, Cinel Akind2, Erçin Cengiz3, Kural Birgül4, Türkyılmaz Serdar5, Flinte Deniz6
1 KTU University, department of Surgery, Trabzon-Turkey, 2 KTU University, department of Surgery, Trabzon-Turkey, 3 Kocaeli University, department of pathology, Kocaeli-Turkey, 4 KTU University, department of biochemistry, Trabzon-Turkey, 5 KTU University, department of Surgery, Trabzon-Turkey, 6 Kocaeli University, department of pathology, Kocaeli-Turkey (alhan@meds.ktu.edu.tr)

The aim of this study was to investigate the influence of p53 inhibition (Pifithrin-α, PFT) on acute necrotizing pancreatitis (ANP). ANP was induced by an intravenous infusion of cerulein 5 μg/kg/hour over six hours superimposed on a standard infusion of 1.2nl/kg glycineoxocholic acid 10 mmol/L into the biliary-pancreatic duct for 10 minutes at 30 mm Hg. The rats were divided four groups as Sham + saline, ANP + saline and ANP + PFT, ANP + DMSO. Research parameters are mortality rate, blood pressure, urine output, pancreatic functional capillary density (FCD) with orthogonal polarization spectral imaging system, blood gas, serum amylose, urea, alanine transferase (ALT), lactate dehydrogenase (LDH) in bronco alveolar lavage (BAL) fluid, pancreatic histology and tissue activity of myeloperoxidase (MPO) and malondialdehyde (MDA) in the pancreas and lung. The induction of ANP resulted in significant increase in mortality rate, pancreatic necrosis and serum activity of amylose ALT, LDH in bronchoalveolar lavage (BAL) fluid, serum concentration of urea, tissue activity of MPO and MDA in the pancreas and lung, and significant decrease of concentrations of calcium, blood pressure, urine output and pO2. The use of PFT did not improve mortality rate, pancreatic necrosis, macrohemodynamic parameters, lung and renal function, tissue activity of MPO and MDA in pancreas and lungs, except FCD. The use of PFT has a limited effect on the course of ANP in rats. Therefore, it can not be used in the treatment of the acute pancreatitis.

Hepatobiliary_1 A005

Effects of the p53 inhibition (Pifithrin-α) on the necrotizing pancreatitis in rats

Alhan Etem1, Cinel Akind2, Erçin Cengiz3, Kural Birgül4, Türkyılmaz Serdar5, Flinte Deniz6
1 KTU University, department of Surgery, Trabzon-Turkey, 2 KTU University, department of Surgery, Trabzon-Turkey, 3 Kocaeli University, department of pathology, Kocaeli-Turkey, 4 KTU University, department of biochemistry, Trabzon-Turkey, 5 KTU University, department of Surgery, Trabzon-Turkey, 6 Kocaeli University, department of pathology, Kocaeli-Turkey (alhan@meds.ktu.edu.tr)

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Cardiovascular, Thoracic_1 A006

Development of a Vascular Bypass Graft With Polyhedral Oligomeric Silsequioxane Nanocomposite

Aoaib Nasser1, deMel Achala2, Seifaldin Alexander3, Hamilton George4

Background: The absence of a functional endothelial layer and compliance mismatch between the graft and the native blood vessel have been implicated in the aetiology of graft failure. It is desirable to have a compliant and spontaneously endothelialising bypass graft. The aim was to fabricate a graft made from a novel nanocomposite- containing biomaterial, modify its luminal surface with peptides and quantify its elastic properties and its ability to endothelialise by circulating endothelial progenitor cells in a physiological flow circuit.

Methods: A new generation of nanocomposite based on silsesquioxane in the form of polyhedral oligomeric silsesquioxane nanocages which incorporate the bioactive peptides arginine-glycine-aspartic acid was extruded into grafts. The grafts were then subjected to flow in a physiological circuit. Wall distension was recorded by ultrasound and the compliance calculated. Human mobilized peripheral blood CD34 cells were injected into the flow circuit. Quantification of cells adhered to graft was done by Alamar Blue assay. Cells were characterised by immunostaining and Reverse transcription polymerase chain reaction (RT-PCR).

Results: The compliance of the graft was similar to the artery and higher than control (PTFE and Dacron). After 48 hours, there were more CD34 cells attached to the graft than control. Immunostaining and RT-PCR confirmed the differentiation of CD34 cells to endothelial cell-like cells by pulsatile flow.

Conclusion: A novel small-diameter vascular bypass graft demonstrated to be compliant and has the potential to endothelialise from circulating mobilized stem/progenitor cells.

Comparison of ''Read-Rives'' and 'Lichtenstein' repair for treatment of unilateral inguinal hernia: Prospective randomized controlled clinical trial.

BRENDEL A007

Function of platelets in sepsis-induced lung injury

Asaduzzaman Muhammad1, Rahman Milladur2, Lavasani Shahram3, Zhang Su4, Jeppson Bengt5, Thorlacius Henrik6
1 Department of surgery, Lund University, Malmo University Hospital, Malmo, Sweden, 2 Department of surgery, Lund University, Malmo University Hospital, Malmo, Sweden, 3 Department of surgery, Lund University, Malmo University Hospital, Malmo, Sweden, 4 Department of surgery, Lund University, Malmo University Hospital, Malmo, Sweden, 5 Department of surgery, Lund University, Malmo University Hospital, Malmo, Sweden, 6 Department of surgery, Lund University, Malmo University Hospital, Malmo, Sweden (milladur.rabse@med.lu.se)

Background: Accumulating data suggest that platelets may exert pro-inflammatory effects. Herein, we hypothesized that platelets may play a significant role in pulmonary recruitment of leucocytes in abdominal sepsis.

Method: Polymeric sepsis were induced by cecal ligation and puncture (CLP) in C57BL/6 mice. Administration of an anti-GP1b-β reduced platelets counts by more than 90%. Leukocyte recruitment, CXC chemokine and edema formation were quantified in lung tissue and bronchoalveolar fluid at different time point after CLP. Expression and function of membrane activated complex-1 (Mac-1) were analysis by flow cytometry.
Results: We found that platelet depletion reduced CLP-induced leukocyte recruitment and edema formation by more than 60% as well as protected the tissue structure in septic lung injury. Moreover, depletion of platelets markedly decreased CLP-induced Mac-1 expression on circulating neutrophils and immunoneutralization of Mac-1 abolished CLP-provoked neutrophil accumulation in the lung. Notably, inhibition of PSGL-1, which blocked neutrophil-platelet aggregate formation had no effect of Mac-1 up-regulation on neutrophils. In addition, Mac-1 expression on neutrophils was independent of the number of bound platelets. Neutrophil-platelet complexes exhibited no preferential accumulation in septic lung injury.

Conclusion: Our novel findings demonstrate an important role of platelets in mediating pulmonary infiltration of neutrophils and edema formation in abdominal sepsis. Moreover, platelets mediate Mac-1 expression on neutrophil, which was critical for neutrophil accumulation in the lung and independent of neutrophil-platelet aggregation. Thus, platelet function may be a useful target in strategies to protect lung damage in abdominal sepsis.

Unusual observations, strange ideas A009

Long – term outcomes in women undergoing transvaginal synthetic mesh

Beta Jaroslaw1,4, Boruci Wojciech2, Jakimiuk Artur3

Department of Obstetrics, Women’s Diseases and Oncological Gynecology; Central Clinical Hospital of Ministry of Interior and Administration, Warsaw, Poland, 2Department of Obstetrics, Women’s Diseases and Oncological Gynecology; Central Clinical Hospital of Ministry of Interior and Administration, Warsaw, Poland, 3Department of Obstetrics, Women’s Diseases and Oncological Gynecology; Central Clinical Hospital of Ministry of Interior and Administration, Warsaw, Poland, 4Polish Academy of Sciences Medical Research Center, Warsaw, Poland (beta@wp.pl)

The study was undertaken to assess the long-term anatomical and functional outcomes of the transvaginal surgery performed because of pelvic organ prolapse.

Study design: Forty women with vaginal prolapse evaluated preoperatively, after 6 months and after 1 year follow-up using the POPQ classification and HRQOL specific questionnaires (PFDI-20 and PFIT-7). All of them underwent the transvaginal synthetic mesh implantation.

Results: Significant improvements in the prolapse measured by the POPQ classification (p < 0.001) was observed at 6-month and 1 year follow-up visits. No life-threatening complications were noted. One patient suffered from transient postoperative urinary retention and one from the postoperative lumbar pain. No single case of mesh erosion was observed during follow-up period. At 1 year follow-up, only in three cases the recurrence of the prolapse (all in POPQ I) was observed. Significant improvement in the quality of life in PFDI-20 and PFIT-7 questionnaires was observed (p < 0.001). All three scales of the PFDI-20 and PFIT-7 demonstrated excellent postoperative responsiveness (SRM: 1.42–1.80, ES: 0.71–1.57 and SRM: 0.78–1.66, ES: 1.0–2.1 respectively, p < 0.001).

Conclusions: Transvaginal mesh implantation is very effective and safe method of pelvic organ prolapse treatment. Women undergoing such surgery appreciate final effects and confirm quality of life improvement.

Orthopedic_1 A010

Cancellation of elective orthopaedic operations within 24 hours of the intended

Bhattacharjee Atanu, Heal J, Budnar Mr V, Learmouth Prof I D

Bristol Royal Infirmary, Bristol, UK (bhattacharjee, santana@hotmail.com)

Objective: Identifying the rate and causes of cancellations of elective orthopaedic operations within last 24 hours of the intended surgery.

Method: We undertook a retrospective study of 2828 patients being planned for elective orthopaedic operation in a tertiary orthopaedic referral centre from a period of January to June 2007. Operations being cancelled within last 24 hours of the intended surgery were obtained from the daily operating theatre list with specific addendum of reasons for such cancellations.

Results: A total of 2828 patients were scheduled for elective orthopaedic operation by 30 surgeons in the study period, 116 patients were cancelled within 24 hours of the intended operation. Main reasons for cancellation were medical (31 percent), non medical (65 percent) and other causes (4 percent). Medical causes of cancellations were: co morbidities (36 patients), anticoagulation not stopped (2 patients), abnormal blood results (2 patients), others (3 patients). Non medical causes of cancellations were: no theatre time (28 patients), patient did not intend to have the operation (24 patients), surgeon not available (13 patients), problems with instruments (8 patients), failed communication (4 patients), shortage of staff (1 patient) and others (10 patients).

Conclusion: There were four major causes of cancellation of similar magnitude for cancellation of operations within last 24 hours of the surgery. More than 80 percent of cancellations for the elective orthopaedic operations are potentially avoidable. A combined anaesthetic and orthopaedic surgeon led preoperative assessment clinic will minimise patient cancellation due to identification and
management of medical issues. Detailed discussion of the operative procedure during pre operative assessment will prevent cancellation due to failed patient expectations. Identifying issues of potential cancellation and operating room efficiency while designing daily operating theatre list will also avoid cancellations due to lack of operating time.

Cardiovascular, Thoracic_1 A011

Intensity of the inflammatory response to carotid artery endarterectomy or stent implantation

Bialek Pawel1, Gromadzka Grażyna2, Kobayashi Adam3, Proczyk Robert4, Biejat Zbigniew5, Polanski Jerzy6

1 2nd Department of General, Oncological and Vascular Surgery Medical University of Warsaw, Poland, 2nd Department of Neryology Institute of Psychiatry and Neurology, 2 2nd Department of Neryology Institute of Psychiatry and Neurology, 3 2nd Department of General, Oncological and Vascular Surgery Medical University of Warsaw, 2nd Department of General, Oncological and Vascular Surgery Medical University of Warsaw, 2nd Department of General, Oncological and Vascular Surgery Medical University of Warsaw, 2nd Department of General, Oncological and Vascular Surgery Medical University of Warsaw (viebk@mp.pl)

The interventional, secondary profilactics of acute ischemic incidents in patients with symptomatic carotid artery atherosclerosis is used and contains two different methods: endarterectomy (E) and angioplasty with stenting (AS). Experimental and clinical studies have indicated that vascular interventions are accompanied by the inflammatory process. The extent of inflammatory response might contribute to restenosis. We aimed to compare serum levels of C-reactive protein (CRP); a well-known marker of systemic inflammation, between patients who underwent angioplasty and stenting and these after endarterectomy.

Material and methods: 21 E patients and 33 AS patients were analyzed. Blood samples were collected one day before the procedure and 24 hours, 72 hours, 1 month and 6 months afterwards. CRP was measured with a high-sensitivity assay.

Results: Preprocedural CRP was not correlated with the grade of stenosis nor with intimamedia thickness of the treated carotid artery. Significant increase of CRP was noticed at the first day after procedure (median: 11.5 mg/dL, compared to baseline : 2.5 mg/dL). More extensive increase was detected at the 3rd day (median: 20.6 mg/dL). CRP measurements after 1 month and 6 months did not differ from baseline values. E was associated with a similar time course of postinterventional CRP compared with the course of these values after AS. However, at the 3rd day a more pronounced increase in CRP level was noted after AS (22.5 mg/dL, versus 15.2 mg/dL); relatively to baseline values: 10-fold increase in the AS group and 5-fold in the E group were detected. Low number of patients with restenosis did not allow us to perform reliable statistical analysis aimed to evaluate association between serum CRP and risk of restenosis.

Conclusions: The intensity of the inflammatory response to stent implantation in terms of CRP increase seems higher than the response to E. Thus possibly patients after AS demand more aggressive anti-inflammatory treatment than these after E.

Wound healing A012

Nanocellulose mesh as a new implant for the ventral hernia repair – an animal study

Bigda Justyna1, Śmietański Maciej2, Jerzy Jankau3, Izyczka-Swieżewska Ewa4, Śledzynski Zbigniew5, Bielecki Stanisław6

1 Dept. of General Endocrine and Transplantation Surgery, Medical University of Gdańsk, Poland, 2 Dept. of General Endocrine and Transplantation Surgery, Medical University of Gdańsk, Poland, 3 Dept. of Plastic Surgery and Burns, Medical University of Gdańsk, Poland, 4 Dept. Pathomorphology Medical University of Gdańsk, Poland, 5 Dept. of General Endocrine and Transplantation Surgery, Medical University of Gdańsk, Poland, 6 Institute of Technical Biochemistry Institute, Technical University of Łódź (jbigda@amg.gda.pl)

Introduction: Although there are many implants available on the market, until now there is no ideal one which could be universal for hernia indication. Numerous publications appeared documenting shrinkage of the implants, seroma formation, adhesions with surrounding tissues, appearance of intestine fistulas, and migration of the implanted material. Aim of the study was to assess the value of new cellulose nanomesh of the bacterial origin for ventral hernia repair in animal model.

Material and method: Microbiological cellulose nanomesh was implanted in 32 rats intraperitoneally, while in the control group polypropylene mesh was used. Following 21 days (I group) and 90 days (II group) after evaluation of adhesions according to the Hooker scale, all the meshes were explanted for histopathological examinations, microbiological culturing as well as the bursting strength tests (INTSRON 1112). The ingrowths of the mesh into the tissue and its biocompatibility was evaluated.

Results: Macroscopic observations and microscopic tests showed the proper integrity of the implanted material. Neither seroma nor fistula formation were observed. No hydrolysis, fragmentation or calcification were present in the specimen. The mechanical test confirmed also that strength and resilience of nanocellulose did not decrease during the period of implantation.

Conclusions: In authors opinion microbially cellulose is a very promising material to be used in the abdominal wall surgery. Its remarkable biocompatibility together with good physical parameters makes it a good choice out of the synthetic and biological implants available, hopefully reinforcing patient outcome.

Transplantation, Organ preservation_2 A013

Distal hand ischemia triggered by forearm arterio-venous fistula creation can be predicted by preoperative ultrasonography of radial and brachial arteries

Bojakowski K1, Mazurkiewicz A2, Syczyniński G3, Szmigielis C4, Syblinski M5, Andziak P6

1 Department of General and Vascular Surgery, CSK MSWiA, 2 Department of Genera, Oncological and Vascular Surgery, CSK MSWiA, 3 Department of Internal Medicine, Hypertension and Angiology, Warsaw Medical University, 4 Department of Internal Medicine, Hypertension and Angiology, Warsaw Medical University, 5 Department of General and Vascular Surgery, CSK MSWiA, 6 Department of General and Vascular Surgery, CSK MSWiA (zcło@mdkt.pw.pl)

Background: Hand ischemia is a complication of angioaccess surgery for hemodialysis. Severity of ischemia varies from period numbness to necrosis.

Material and methods: AVFs between radial artery and cephalic vein were created in 58 patients (38 males, 20 females). Ultrasonography of radial, brachial arteries and functional tests – flow and nitroglycerin mediated dilatations of brachial artery were performed during patient qualification to operation. Morphology and function of arteries were compared between patients with ischemia and non-ischemic.

Results: Symptoms of hand ischemia – intermittent claudication, numbness during dialysis were observed in 17 patients, only 1 patient required surgical revision. Patients with hand ischemia had smaller radial artery lumen in comparison to non-ischemic patients (1.66 ± 0.39 versus 2.04 ± 0.41 mm, respectively, p = 0.02), radial/brachial artery diameter ratio (0.42 ± 0.09 versus 0.51 ± 0.06, respectively, p = 0.001). We observed also significant difference in nitroglycerin mediated dilatation (10.85 ± 8.56 versus 15.96 ± 8.81 respectively in ischemic and non-ischemic group, p = 0.047), but only tendency in flow mediated dilatation of brachial artery (4.15 ± 2.75 versus 6.27 ± 4.26, p = 0.06).

Conclusions: Distal hand ischemia is underdiagnosed complication of AVF, which can be observed even in AVF situated on forearm. Severity of ischemic symptoms triggered by distal AVF rarely requires surgical intervention. Preoperative ultrasonography can predict patient at risk of distal hand ischemia. Smaller diameter of radial artery, radial/brachial artery ratio and impairment of nitroglycerin mediated flow in brachial artery are risk factors of distal hand ischemia.
The effects of candesartan on microcirculatory disorders of pancreas in a rat model of acute necrotizing pancreatitis

Bostancı Hasan1, Yüksel Osman2, Şahin Toglu3, Gülbahar Özlem4, Poyraz Alyaz5, Teymuristicem6

1 Gazi University Medical School Department of Surgery, Beştevi, Ankara, Turkey, 2 Gazi University Medical School Department of Surgery, Beştevi, Ankara, Turkey, 3 Gazi University Medical School Department of Pathology, Beştevi, Ankara, Turkey, 4 Gazi University Medical School Department of Biochemistry, Beştevi, Ankara, Turkey, 5 Gazi University Medical School Department of Surgery, Beştevi, Ankara, Turkey, 6 Gazi University Medical School Department of Surgery, Beştevi, Ankara, Turkey (osmanyuksel1971@yahoo.com.tr)

**Aim:** Acute necrotizing pancreatitis is a severe form of the disease with a high mortality and morbidity rate which results from microcirculatory disorders that are important in the initial stages of the disease. Angiotensin II induces cellular proliferation; extracellular matrix production and has effects on endothelial permeability. In the present study it is aimed to detect the effects of candesartan -an angiotensin II antagonist- on pancreatic microcirculation in an animal model of acute necrotizing pancreatitis.

**Materials and Methods:** The rats were grouped into 5; each group consisting of 10 animals. Pancreatitis was induced by cerulein intravenous infusion concomitant with glycodeoxycholate infusion to biliopancreatic duct. Treatment groups received candesartan at 6th and 18th hours; on the other hand the sham group received saline at 6th and 18th hours. The rats were sacrificed at 24th and 48th hours respectively. Pancreatic perfusion was assessed via laser doppler flowmeter, blood was collected for amylase, myeloperoxidase, IL-6 and tumor necrosis factor alpha. Tissue samples were collected for histopathologic analysis, evaluation of endothelial cell apoptosis and matrix metalloproteinase-9 evaluation.

**Results:** Pancreatic tissue microcirculation was enhanced in candesartan treated group when compared to control groups ($p < 0.05$). Myeloperoxidase, IL-6 and TNF-a levels significantly lower in candesartan treated group ($p < 0.05$). The pancreatic edema and inflammation was significantly reduced in candesartan treated group when compared to control group at 48th hour $s$ ($p < 0.05$). Endothelial cell apoptosis was reduced in candesartan but did not reach statistical significance ($p > 0.05$). Candesartan treatment reduced matrix metalloproteinase-9 levels in the pancreatic tissue ($p < 0.05$).

**Conclusion:** Candesartan treatment in the early phase of necrotizing pancreatitis has beneficial effects on pancreatic microcirculation and therefore progression of the disease to more irreversible phases of inflammation may be prevented.

Transplantation, Organ preservation_A015

Evaluation of Alternative Sites for Islet Transplantation in the Minipig: Interest and Limits of the Gastric Submucosa

Caizzo Robert1, Hubert Thomas2, GMYR Valery3, Sterkers Adrien4, Kerr-Conte Julie5, Partou François6

1 Department of endocrine surgery, Claude Huriez Hospital, Lille, France, 2 Diabetes Cell Therapy, Faculty of medicine, Lille 2 University, Lille, France, 3 Diabetes Cell Therapy, Faculty of medicine, Lille 2 University, Lille, France, 4 Diabetes Cell Therapy, Faculty of medicine, Lille 2 University, Lille, France, 5 Diabetes Cell Therapy, Faculty of medicine, Lille 2 University, Lille, France, 6 Department of endocrine surgery, Claude Huriez Hospital, Lille, France (robert.caiazzo@gmail.com)

Since the introduction of glucocorticoid-free immunosuppressive regimens, islet transplantation offers a less invasive alternative to pancreas transplantation. However, complications associated with intraportal islet injection and the progressive functional decline of islet recipients have led to the exploration of alternative sites. Herein we evaluated, in the minipig, the use of the gastric submucosa (GS; group 1, $n = 5$) for islet transplantation compared with the kidney capsule (KC; group 2, $n = 5$). Subsequently we attempted to improve the vascularization of the submucosal graft (group 3, $n = 5$) by the addition of an extracellular matrix rich in growth factors (Matrigel®). One month after grafting, we evaluated transplanted islet function in vivo and in vitro. Our study showed better function of islets engrafted in the GS than in the KC ($p < 0.05$). Despite the growth factors, Matrigel® did not offer a more suitable environment to further improve engraftment (group 3, $p < 0.05$). Thus, even if the liver remains the gold standard, the GS represents a potential islet engraftment site, confirming the data obtained in vitro and in the rodent. Offering easy access by endoscopy, this site could constitute an interesting alternative for experimental studies in large mammals and, eventually, for clinical application.

Orthopedic_A016

Outcomes following aggressive skeletal and soft tissue reconstruction for lower limb osteomyelitis

Campbell Raewyn1, Berry Miles2, Deva Anand3, O’Carrigan Timothy4

1 Department of Plastic and Reconstructive Surgery and Department of Orthopaedic Surgery, Liverpool Hospital, Liverpool, Sydney, Australia, 2 Department of Plastic and Reconstructive Surgery and Department of Orthopaedic Surgery, Liverpool Hospital, Liverpool, Sydney, Australia, 3 Department of Plastic and Reconstructive Surgery and Department of Orthopaedic Surgery, Liverpool Hospital, Liverpool, Sydney, Australia, 4 Department of Plastic and Reconstructive Surgery and Department of Orthopaedic Surgery, Liverpool Hospital, Liverpool, Sydney, Australia (raewyn.campbell@gmail.com)

**Background:** Severe open tibial fractures can be successfully treated acutely with a combined orthopaedic and plastic surgery approach, but a small proportion will go on to develop chronic osteomyelitis (OM). Once established, post-traumatic OM is difficult to treat with reported failure rates of up to 30%. For the past 6 years an aggressive approach of bone and soft tissue debridement followed by skeletal reconstruction and vascularised tissue transfer has been pursued by the orthopaedic and plastic surgery teams at Liverpool Hospital (LPH), a new service to Australia at that time. To date, there have been few reports of the long term outcomes and quality of life following this approach. We present a detailed follow-up analysis of our series and the first functional assessment of such patients.

**Patients and Methods:** Hospital and consultant audit databases were searched between January 2000 and July 2006. Comprehensive clinical record review was combined with patient interviews and questionnaires. Outcome measures included operative success (bony union and stable soft tissue cover), freedom from infection, mobility, return to work/sport and pain.

**Results:** 12 patients were identified over a mean follow-up period of 4–23 years. Patients underwent a mean of 11–4 procedures to operative success. Notably, a significant difference was found between the number of procedures prior to treatment at LPH and after (8±1 versus 2–5, $p = 0.003; t = 3.86$). All patients are walking and 80% have returned to work. All but one patient involved in sport at the time of injury have returned to sport. Two patients complain of mild pain when walking long distances only. No patient has expressed either regret at pursuing a reconstructive path or a desire for amputation.

**Conclusions:** Such interventions to yield freedom from infection are costly and intensive for both patients and healthcare providers, but are worthwhile given the alternative of long-term antibiotic usage, chronic discharging wounds, the inability to pursue work or leisure activities and amputation.

Extremities A017

Lymphatic microsurgery–state of art 2008

Campisi C

Department of Surgery, Unit of Lymphatic Surgery and Microsurgery, San Martino Hospital, University of Genoa, Italy (campisiocarraro@tin.it)

– no abstract available –

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Brendel A018

Randomized double-blind clinical trial comparing plug-and-patch with lichtenstein method for primary inguinal hernia repair

Can Mehmet Fatih1, Piskin Turgut2, Sevinc Mert Mahsuni3, Can Bulen4, Yilmaz Mehmet5, Yagei Gokhan6

1 Ardahan Army Community Hospital, Department of Surgery. 2 Galbante School of Medicine, Department of Surgery. 3 Galbante School of Medicine, Department of Surgery. 4 Galbante Army Community Hospital, Department of Surgery. 5 Galbante Army Community Hospital, Department of Surgery. 6 Galbante School of Medicine, Department of Surgery (mfcan@superonline.com)

Aim: To compare the usefulness of plug-and-patch method and Lichtenstein operation, both of which have gained wide acceptance in inguinal hernia repair.

Methods: Patients with primary inguinal hernia, who were admitted for surgical treatment from October 2006 through May 2007, were randomly assigned to undergo either mesh plug and patch repair (Group-I) or Lichtenstein operation (Group-II). Except the day and following day of surgery, patients were allowed to self-manage their pain medication (amount of paracetamol to be consumed). Patient characteristics, anaesthetic technique, duration of operation, intra- and early postoperative complications, time to first mobilization, time to discharge, postoperative pain VAS scores, chronic pain and recurrence rates at postop 3, 6 and 12 months, and the degree of patient satisfaction were recorded.

Results: There were forty patients in group-I, and forty-two patients in group-II. No significant differences were found between the groups with respect to the patient characteristics, hernia types and anaesthesia techniques used. Mean operation time was 63.9 ± 4.0 (min, Mean±SEM) for group-I and 59.1 ± 2.4 (min) for group-II (p = 0.303). There were no intraoperative complications. Early postoperative complications (infection, seroma-haematoma, or urinary retention) occurred in 26% and 24.8% of patients in group-I and II, respectively (p = 0.896), but none required re-exploration. Time to first mobilization and discharge were similar in both groups (p = 0.111 and 0.338, respectively). While VAS scores recorded at bed rest were slightly higher in group-II initially, they were seen to be similar in both groups between third and seventh postop days. Furthermore, patients in group-I reported higher VAS scores related to the walking periods, despite the amount of analgesics consumed were not different. One recurrence was detected in group-I. No significant differences were found in terms of chronic pain and patient satisfaction.

Conclusion: The results of the study suggest that inserting an additional plug into hernia defect provides no meaningful benefit over on-lay patch repair of inguinal hernia.

Sepsis, Infection, Immunity_I A019

Practices of handwashing and glove use in surgical intensive care unit: analysis of factors associated with noncompliance with hand hygiene

Can Mehmet Fatih1, Goceri Rukiye2, Cetin Serpil3, Mentes Oner4, Yagei Gokhan5, Tufan Turgut6

1 Galbante School of Medicine, Department of Surgery, Ankara, Turkey. 2 Galbante School of Medicine, Department of Surgery. 3 Galbante School of Medicine, Department of Surgery. 4 Galbante School of Medicine, Department of Surgery. 5 Galbante School of Medicine, Department of Surgery. 6 Galbante School of Medicine, Department of Surgery (mfcan@superonline.com)

Background/Aim: Compliance with hand hygiene is leading way to prevent cross infections in surgical intensive care units (SICUs). The aim of this observational study was to investigate the factors affecting adherence to hand hygiene in SICUs.

Methods: The study was conducted over a three-month period. Interactions between health care workers and patients were monitored. Number of encounters, opportunities for hand hygiene, and practices of handwashing/glove use were recorded. Each record also included the category of health care worker, total number of patients in SICU, type of contact, single/multiple opportunities at the same encounter, and the presence of isolation precautions. Chi-square and logistic regression tests were used to analyze the factors associated with noncompliance.

Results: During a total of 3440 minutes of observation performed, there were 3317 opportunities for handwashing. Overall adherence to recommendations for hand hygiene was poor (34.2%). In multivariate analysis, physicians, nurse’s aides, environmental services staff and other health care staff were found to have a higher noncompliance rate (Odds Ratios (95%CI): 1.93; 1.95; 2.02; 1.98, respectively) than that of registered nurses. Increasing number of patients taking care (1–5 to 6–10 to 11–16) reduced the compliance with handwashing (p = 0.006), but did not affect the frequency of glove change between contacts to different body sites or different patients (p = 0.802).

Performing a low-risk procedure, presence of multiple opportunities at the same encounter, and wearing glove were associated with higher rate of noncompliance with handwashing (Odds Ratios (95%CI): 1.85; 3.82; and 3.20, respectively). Presence of isolation precautions did not improve the compliance.

Conclusions: Adoption of published recommendations on hand hygiene by SICU staff remains inadequate. Increased workload appears to be associated with higher noncompliance rate. Improperly gloving the hands decreases the adherence to handwashing rules. Establishment of a continuing education program and a regular audit by authority, as well as improvement of staff-to-patient ratio seem mandatory to improve hand hygiene compliance.

Extremities A020

Endovenous Laser Therapy with Concomitant or Sequential Phlebectomy: A Randomised Controlled Trial

Carradice Daniel1, Mekako Anthony2, Hatfield Josie3, McCollum Peter4, Chetter Ian5

1 Academic Vascular Surgical Unit, Hull, UK. 2 Academic Vascular Surgical Unit, Hull, UK. 3 Academic Vascular Surgical Unit, Hull, UK. 4 Academic Vascular Surgical Unit, Hull, UK. 5 Academic Vascular Surgical Unit, Hull, UK (daniel@doctors.org.uk)

Introduction: An exciting new development in the management of varicose veins is the use of minimally invasive endovenous techniques such as Endovenous Laser Therapy (EVLT). The technical results appear better than surgery and EVLT has also been demonstrated to result in an increased quality of life compared with conventional surgery. Significant complications are known to be rare and are absent from most larger studies. This modality of treatment offers cost saving treatment and an almost immediate return to work. This said, many operators treat truncal incompetence with the laser fibre, leaving surface varicosities to regrow untouched. Whilst this does minimise procedural time, it results in many patients requesting secondary interventions, increasing cost, repeated appointments, patient inconvenience and time off work. Some surgeons argue that alongside increasing procedure time multiple avulsions would require a general anaesthetic or be unacceptable to the patient. Concomitant treatment (EVLTAP) however has been described and is in use. This is the first randomised trial comparing EVLT with and without concomitant phlebectomy.

Method: All patients listed for EVLT were recruited and consented. They were randomised to either the control group (no phlebectomies) or the EVLTAP group, by sealed envelopes. All procedures were performed in an out patient procedure room under tumescent anaesthesia and duplex imaging. 14W continuous laser energy of 810nm was delivered to the vein via a 600microm fibre. Aiming for 80–100J/cm. Ambulatory Phlebectomy was then performed in the EVLTAP group. All patients were then put in compression for 6 weeks. Follow up was at 1, 6 and 12 weeks. Outcomes were: Duration of procedure, pain scale diaries, complication rates, reintervention rates, disease specific quality of life scoring via the Aberdeen Varicose Vein Questionnaire, patient satisfaction scale and change in venous severity (via Venous Clinical Severity Score).

Results: 16 patients were recruited to each group. There were no significant differences between the groups in terms of age, venous severity at baseline or quality of life and there was no significant difference in terms of the laser energy used. EVLTAP was a significantly longer procedure taking on average 20 minutes longer than EVLT alone. However, there was no significant difference in complication rates, pain scores, time to return to normal activities or time off work. The robustness of EVLTAP was demonstrated by the venous severity of all patients being brought down to 0 at 12 weeks, this translated into a significant

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Oncology_2 A021

Luminal versus nodal response to chemoradiation in esophageal cancer: implications for organ preservation

Ceelen Wim1, Van Huysse Jacques2, Van De Putte Dirk3, Boterberg Tom4, Peeters Marc5, Pattyn Piet6
1 UZ Gent, Department of Surgery, Gent, Belgium, 2 UZ Gent, Department of Pathology, 3 UZ Gent, Department of Radiotherapy, 4 UZ Gent, Department of Gastroenterology, 5 UZ Gent, Department of Surgery

Introduction: Neoadjuvant chemoradiation (CRT) is increasingly used in advanced esophageal cancer. Since a pathological complete response (pCR) has been shown to result in improved survival, nonoperative management could be considered in clinical complete responders. It is unclear, however, whether complete response of the luminal tumor parallels nodal response. We aimed to correlate tumor regression in the esophageal wall to lymph node status in patients undergoing CRT followed by surgery.

Methods: Locally advanced (N+ or T4) esophageal cancer patients underwent radiotherapy (36 Gray) with concomitant 5-fluorouracil and cisplatin followed by Ivor Lewis esophagectomy. The tumor was staged according to the TNM system (6th ed) and response was quantified using the Mandarad tumor regression grade (TRG) ranging from 1 to 5 with 1 representing complete absence of viable tumor. Clinical and pathological data were correlated to survival using multivariate regression.

Results: 86 patients were followed for 31 ± 6 months. Median hospital stay was 18 days; mortality was 4.6% and anastomotic leak rate 5.8%. pCR (ypT0N0) was observed in 24% while complete luminal response (ypT0Nx) occurred in 32.6%. Downstaging was observed of both the T stage (100% cT3 or cT4 to 32% ypT3 or ypT4) and the N stage (92% cN1 to 45% ypN1). TRG 1 or 2 was observed in 57% of patients. The incidence of positive lymph nodes ranged from 28% in TRG 1 patients to 67% in TRG 5 patients. Median survival was 67 months in pCR patients and 42 months in partial responders (p = 0.01, log rank test). In multivariate analysis, only the ypN status was independently associated with improved survival but not ypT status, TRG, age, gender, or tumor histology.

Conclusions: pCR to neoadjuvant CRT translates in a significant survival benefit. Achievement of a node negative status is, however, the main determinant of outcome. There is no correlation between luminal response and locoregional node status, and therefore organ preservation cannot be recommended on the basis complete clinical response of the esophageal wall.

Oncology_2 A022

Safety and efficacy of hyperthermic intraperitoneal chemoperfusion with high dose oxaliplatin in patients with peritoneal carcinomatosis

Ceelen Wim1, De Somer Filip2, Pattyn Piet3
1 Department of Surgery, Ghent University Hospital, Ghent, Belgium, 2 Department of Surgery, Ghent University Hospital, 3 Department of Surgery, Ghent University Hospital

Background: Cytoreduction with hyperthermic intraperitoneal chemoperfusion (HIPEC) has an established role in selected patients with peritoneal carcinomatosis (PC). We analyzed the safety and efficacy of HIPEC using high dose oxaliplatin, a cytotoxic agent commonly used in metastatic colorectal cancer and showing promising activity in ovarian cancer and mesothelioma.

Methods: Following complete cytoreduction, HIPEC was performed using 460 mg/m2 oxaliplatin in dextrose 5% during 30 minutes at a temperature of 41°C–42°C. Open perfusion (coliseum technique) was performed in all patients. Metabolic, electrolyte, and hemodynamic changes were recorded during chemoperfusion as well as postoperative morbidity, mortality, late toxicity, and survival.

Results: Fifty-two patients were treated from 7/2005-1/2007. Chemoperfusion with dextrose 5% resulted in temporary significant hyperglycemia, hyponatraemia, and metabolic acidosis. Major morbidity developed in 24% of patients, while 30 day mortality did not occur. One patient developed unexplained repeated episodes of hemoperitoneum. Chemoperfusion with oxaliplatin resulted in mild hepatic toxicity evidenced by persistent elevation of glutamyl transferase and alkaline phosphatase one month after surgery. After a mean follow up time of 14-5 months, nine patients have died from disease progression. In colorectal cancer patients, actuarial overall survival was 80% at one year.

Conclusion: Cytoreduction with HIPEC using high dose oxaliplatin leads to manageable metabolic and electrolyte disturbances and frequent mild hepatic toxicity without discernible impact on postoperative morbidity. Longer follow up in a larger patient cohort will be required to assess the real risk of unexplained hemoperitoneum observed in one patient, and to establish the long term effect on local relapse and survival.

Plastic_2 A023

Patient perspective of long-term outcome of toe to hand transfer to bilateral Metacarpal Hand—long-term follow-up

Chan FC1, Chang CC2, Wei FC3
1 Department of Plastic and Reconstructive Surgery, Cork University Hospital, Ireland, 2 Department of Plastic and Reconstructive Surgery, Chang Gung Memorial Hospital, Chang Gung University, Taipai, Taiwan, 3 Department of Plastic and Reconstructive Surgery, Chang Gung Memorial Hospital, Chang Gung University, Taipai, Taiwan

Introduction: Although toe transfer has been performed for over 30 years, long term outcome data including foot donor site problems are still lacking. The aim of this study was to assess patient perspective regarding the long-term viability of toe transfer, quality of life and satisfaction rate of these complicated procedures.

Methods: Using a standardized questionnaire, we evaluated long-term viability of the toe-transfer to bilateral metacarpal hand, quality of life and satisfaction rate of these complicated procedures. The results are presented, along with the details of long-term post-operative bilateral hand functions including daily activities, surgical approaches, and complications.

Results: Long term follow up demonstrated high degree of patient satisfaction rate with long term viability of the toe-transfer and good quality of life with minimal disability of the foot donor site.

Conclusion: Individually planned and carefully executed bilateral metacarpal hand reconstruction using toe transfer can achieved excellent long term result with minimal disability in the donor foot. This study give strong evidence that attests to the value of these

Transplantation, Organ preservation_1 A024

One center experience in assessing the lower urinary tract (lut) disturbances in potential kidney recipients

Chmura A1, Radziszewski P2, Borkowski A3, Rowinski W4
1 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 2 Department of Urology, The Medical University of Warsaw, Poland, 3 Department of Urology, The Medical University of Warsaw, Poland, 4 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland

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A number of potential kidney transplant recipients suffer from (LUT) anatomical and functional pathology. A complex LUT assessment is required prior to transplantation to avoid risk of graft loss. Aim of the study was to assess the incidence of LUT pathology in potential kidney recipients and to establish a unified and comprehensive system of LUT assessment for qualifying patients to transplantation.

**Patients and method:** The first screening examination in most cases consisted of urethrocytography and urethrocytoscopy. In patients with urethral or bladder neck stricture a urethral dilatation or bladder neck incision was performed before the patients were listed for transplantation. In 98 patients, urodynamic studies were required for the assessment of LUT disturbances.

**Results:** Out of 4170 analyzed patients on dialysis 535 were selected for investigation. 265 of them were listed for kidney transplantation following urethrocytography or urethrocytoscopy. 145 patients were selected for nephroureterectomy due to v-u reflux nephrolithiasis polycystic renal disease or hydronephrosis. 136 of them were then listed further for transplantation. 98 patients required 119 urodynamic studies. 10 potential recipients with acceptable LUT function were listed for kidney transplant directly. 41 with an anatomical stricture were listed after successful surgical treatment while these with functional pathology underwent pharmacological therapy and after improvement were listed for transplantation. 47 patients with serious LUT disturbances were listed for transplantation with atypical urinary diversion. Eventually, out of 535 patients, 447 (83,6%) were listed for routine transplantation without treatment or following pharmacological or surgical interventions while 75 (14%) were listed for transplantation with atypical urinary diversion. Altogether 98% of investigated patients were eventually listed for kidney transplantation.

**Conclusions:** All potential kidney recipients with LUT pathology require a voiding cystography and if abnormal a complex LUT examination for assessment of anatomical or functional status for effective surgical and/or pharmacological treatment.

Transplantation, Organ preservation_1 A025

**One center experience of the treatment of urinary complications after kidney transplantation**

Chmura A1, Rowiński W2, Wałaszewski C3, Zapiłcki M4, Kwiatkowski A5, Trzebiicki J6

1 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 2 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 3 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 4 Department of Urology, The Medical University of Warsaw, Poland, 5 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 6 Department of Anesthesiology and Intensive Care, The Medical University of Warsaw, Poland (wojciech.lisik@am.edu.pl)

**Introduction:** Urinary complications after kidney transplantation can lead to graft loss. We present various methods of treatment in varying clinical situations.

**Patients and method:** Since 1982 we have transplanted 1500 kidneys in our department, including 70 living-related (5%). During this period 94 patients with post-transplant urinary complications were treated (64 patients transplanted in our department and 30 referred from other centers. In 60 patients complications occurred within 30 days after transplantation and 30 others complications developed later. The following were observed: 1. Early: a) Urinary fistula b) Ureteric necrosis c) Anatomostic stricture 2. a) Ureteric anastomosis to the peritoneum 2 b) Thrombus in kidney pelvis and the ureter 1. Late: a) Stricture of the urinary anastomosis 3. Method: The following treatments were performed: a) Ureterovesical reanastomosis b) Resection of the necrotic ureter and secondary anastomosis c) Resection of the ureter at the level of renal pelvis and anastomosis to own ureter d) Boari flap reconstruction e) Ligation of the ureter and the permanent nephroptomy f) Transcutaneous pyelostomy.

**Results:** In all but one case satisfactory early and late results were obtained with preserved function of the transplanted kidney. In one fatal case the small arterial branch thrombosis resulted in kidney lower pole necrosis and massive urethre and renal pelvis necrosis with eventually graft loss.

**Conclusions:** Treatment of urinary complications after renal transplantation, requires surgical and urological experience of the operating team. Surgical treatment should be aimed at definitive reconstruction, since consecutive operations lead to a higher risk of a graft failure.

Unusual observations, strange ideas A026

**Psychical problems of patients treated for perianal fistulae**

Chrzan Barbara-Renata

Department of general and Orthopedic Surgery, Hammarfest Hospital, Norway (chrzanb@rambler.ru)

Perianal fistulae is a recurrent disease which is difficult to treat for the patient as well as for the doctor. It adversely affects the patient’s psyche, resulting mainly in depression and phobias. In recent years, depression and phobies accompanying surgical illnesses is a frequent problem faced by surgeons. The purpose of this work is the assessment of the frequency of depression and phobies and determination of the degree of depression and phobies in patients treated for perianal fistulae.

**Material&methods:** 55 patients treated in the 2-nd Department of General and Oncologic Surgery Medical Academy in Wroclaw/Polen in the period from 1991 to 2005 were examined. They filled anonymously the Beck Depression Inventory questionnaire. Participation in the examination was voluntary.

**Results:** From among 55 subjects examined by means of BDI 68% demonstrated depression disturbances with phobia. Most patients were not aware of their additional ailment. Mild intensity depression occurred in 55% patients and medium intensity depression occurred 45% subjects. No relationship between the age, gender and depression was found.

**Conclusion:** Perianal fistula contributes to various degrees of depression which remains undiagnosed in most cases. Information obtained from the survey can contribute significantly to understanding the problems tormenting the patients and working out a complex therapeutic procedure, including psychotherapy.

Cardiovascular, Thoracic A027

**Dynamic, in-situ, warm human cadaver model for testing the feasibility of new aortic stented grafts**

Cikrikcioglu Mustafa1, Pektok Erman2, Arbatli Harun3, Fasel Jean4, Walpoth Beat5, Kalangos Afksendiyos6

1 University Hospital of Geneva, Switzerland, 2 University Hospital of Geneva, Switzerland, 3 Memorial Hospital, Istanbul, Turkey, 4 University of Geneva, School of Medicine, Switzerland, 5 University Hospital of Geneva, Switzerland, 6 University Hospital of Geneva, Switzerland (cikrikc@etu.unige.ch)

**Objective:** Although mock circuits are helpful, cadaver models are also necessary for the feasibility testing of new endovascular techniques and equipment. We describe a new, dynamic, in-situ, warm human cadaver model in order to mimic physiologic and anatomic conditions for testing the novel techniques and stent grafts.

**Methods:** Two fresh human cadavers were used for the experiments. Both common carotid and left subclavian arteries were exposed. Ascending and supraceliac abdominal aorta were cannulated via median sternotomy and laparotomy, and were connected to a roller pump. A 10 mm Dacron vascular prosthesis was anastomosed to the supraceliac aorta in end-to-side fashion for stent graft implantation. The thoracic aorta was isolated between two vascular clamps which were put above the aortic valve on the ascending and below the Dacron graft on the abdominal aorta, in order to obtain pressure and prevent...
Oncology_1 A028

Portal branch ligation reduces initial outgrowth of colorectal metastasis followed by a late compensatory angiogenic and proliferative response

Corsten Marcus1, Kollmar Otto2, Scheuer Claudia3, Vollmar BRigitte4, Schilling Martin K5, Menger Michael I6

1 Institute for Clinical & Experimental Surgery, University of Saarland, Homburg-Saar, Germany, 2 Department of General, Visceral, Vascular and Pediatric Surgery, University of Saarland, D-66421 Homburg-Saar, Germany, 3 Experimental Surgery, University of Saarland, D-66421 Homburg-Saar, Germany, 4 Department of Experimental Surgery, University of Rostock, D-18055 Rostock, Germany, 5 Department of General, Visceral, Vascular and Pediatric Surgery, University of Saarland, D-66421 Homburg-Saar, Germany, 6 Institute for Clinical & Experimental Surgery, University of Saarland, D-66421 Homburg-Saar, Germany (marcus.oertelt@gmx.de)

Background: Whereas portal branch ligation (PBL) prior to resection may prevent liver failure after extended hepatic resection, clinical studies indicate that tumors within the ligated lobe develop accelerated growth. Therefore, we studied in a mouse model the time-dependent effect of PBL on angiogenesis and tumor growth of colorectal metastasis.

Methods: According to an established liver metastasis model CT-26 colon cancer cells were implanted in the left liver lobe of syngeneic BALB/c mice. Animals were randomized to PBL of the left liver lobe or control group. Microcirculatory responses and microvascular remodeling of the normal liver as well as angiogenesis, tumor cell proliferation, apoptosis and growth were studied 3d, 7d, 14d and 21d after PBL (n = 8 each) using intravital multifluorescence microscopy, laser Doppler fluxmetry, immunohistochemistry and biochemical techniques.

Results: After 14 days tumor volume was significantly reduced by PBL (<20% of controls) when compared to controls. During the first 14d PBL induced a reduction of left hilar blood flow by ~50%, resulting in a delayed development of an angiogenic front of the tumors, a reduced density of draining tumor venules and reduced functional sinusoidal density in the non-liver material. Sinusoidal dilation at the tumor border was associated with a significant increase of VEGF expression. PBL was associated with a higher leukocyte response in the tumor and normal liver. Immunohistological analyses demonstrated that PBL significantly induced tumor cell and hepato-cyte proliferation after 14 days as well as apoptosis over the 14 days observation period. According to these findings, there was no significant difference on tumor volume after 21d.

Conclusion: Microvascular remodeling within the ligated lobe and hepatocellular proliferation may explain the late accelerated tumor progression observed in patients after PBL.

Hepatobiliary_1 A029

Prophylaxis with ketotifen in rats with Portal Hypertension: Involvement of Mast Cell and Eicosanoids

Cruz A1, Losada M2, Aller MA3, Vergara P4, Saavedra V5, Arias J6

1 General Surgery Department. Virgen de la Luz Hospital. Cuenca, Spain, 2 General Surgery Department. Virgen de la Luz Hospital. Cuenca, Spain, 3 Surgery I Department. School of Medicine. Complutense University of Madrid, Spain, 5 Physiology Department. Veterinary School. Autonomous University of Barcelona, Spain, 6 Physiolo gy Department. Veterinary School. Autonomous University of Barcelona, Spain, 4 Surgery I Department. School of Medicine. Complutense University of Madrid, Spain (manuellosadaruiz@hotmail.com)

Background and aims: Since we have previously shown an increase of mast cells in the small bowel and in the mesenteric lymph nodes in rats with prehepatic portal hypertension, it can be hypothesized that this essential inflammatory cell would be involved in the pathogenic of splanchic changes related to portal hypertension.

Methods: To verify this hypothesis, we first studied mast cell infiltration in the ileum and in the mesenteric lymph nodes in sham-operated male Wistar rats (n = 12) and in short-term prehepatic portal hypertensive rats (n = 12), and serum levels of rat mast cell protease II (RMCP-II) by ELISA. In a second set of experiments Ketotifen, a mast cell stabilizer drug, was administered to sham-operated (n = 10) and portal-hypertensive (n = 12) rats 24 hours before intervention and prostanoids (PGE 2, PGI 2, TxB 2) and leukotrienes (LTC 4, LTE 4) were assayed by RIA, mast cell infiltration in ileum and in mesenteric lymph nodes and serum levels of rat mast cell Protease II (RMCP-II) were also studied, to show its effectiveness to prevent mesenteric alterations produced by inflammatory mediator released by mast cell.

Results: 48 hours after intervention RMCP-II (p < 0,005), PGE 2 (p < 0,001) and TxB 2 serum levels decreased and mast cell number and RMCP-II levels increased in mesenteric lymph nodes in portal hypertensive- rats. Prophylactic administration of Ketotifen reduced portal pressure (p < 0,001), serum levels of PGE 2 (p < 0,001) and RMCP-II (p < 0,001) in mesenteric lymph nodes.

Conclusion: In acute portal hypertension in rat, mast cell translocation from intestinal mucosa to mesenteric lymph nodes, where they are activated end degranulates, would represent a defence mechanisms to avoid activation of an acute and massive inflammatory response in this location. Prophylactic administration of Ketotifen was able of reducing splanchic inflammatory changes related to acute portal hypertension in rat.

Hepatobiliary_1 A030

Cirrhosis and portal hypertension by thioacetamide induces astrocytic changes in the hypothalamic mammillary bodies of rats

Cruz A1, Losada M2, Aller MA3, Mendez M4, Arias J5, Arias J6


Background and aims: Production of cirrhosis and portal hypertension by oral Thioacetamide (TAA) administration in rats is a useful model to
Hepatobiliary_1 A031

Plasma redox status is impaired in the portacaval shunted rat: the risk of the reduced antioxidant ability

Cruz A1, Losada M2, Aller M A3, García-Fernández M4, Sánchez-Patán F5, Arias J6
1,2,3,4,5,6

Methods: Male Wistar rats, controls (n = 12) and treated with TAA (0.01%) as initial concentration, that was adapted weekly according to body weight, for 12 weeks (n = 12) were used. The volume of the medial mammillary nucleus (medial part, MMm and lateral part, MMl) and of the lateral mammillary nucleus (LM), the number of cells (neurons, glial cells and GFAP-IR astrocytes) and the volume of the neuronal and astrocytic nucleus in the mammillary nuclei were measured by means of stereological methods.

Results: At 12 weeks TAA rats showed cirrhosis and portal hypertension. Cirrhotic rats showed a larger volume of the MM nucleus (p = 0.018). Total number of neurons and glial cells were unaltered. In the medial mammillary nuclei (MMm, p = 0.002; MMl, p = 0.018), GFAP-IR astrocytes decreased in the cirrhotic group while the lateral was unaffected. Neuronal nuclei were larger in MMm (p = 0.001), MMl (p = 0.007) and LM (p < 0.001) nucleus. Astrocytes nucleus volume were increased in MMm (p = 0.018), MMl (p = 0.013) and LM (p = 0.006).

Conclusion: Cirrhotic rats by TAA administration showed GFAP-IR astrocytes decrease as well as astrocytic and neuronal nucleus structural alterations. These cellular morphometric impairments in the hypothalamic mammillary bodies could be involved in the spatial memory deficit present in subclinical hepatic encephalopathy.

Wound healing A033

The MEPIDOR minipig model: a step forward in oral surgical research

Dard Michel1, Carlsson UB2, Obrecht B3
1,2,3

Introduction: Fundamental aspects of the development, treatment and prevention of periodontal diseases are frequently studied in dog mandible models. This constitutes historically the state of the art in periodontal research but appears incomplete when it comes to large bone regeneration and challenging dental implantation. The extensive knowledge and reliable documentation on minipigs in surgical research constitutes the fundament of the present work. The aim was to develop and test under different clinical requirements an anaesthesia procedure and an intra-oral surgical approach in the minipig mandible (MEPIDOR model).

Materials and Methods: The Gottingen minipigs (Sus Scrofa) are premedicated with an intra-muscular injection of atropine. They are anaesthetized with intra-muscular injection of ketamine mixed with midazolam without intubation. During the surgery ketamine is re-injected when needed. The surgery starts with a local intra-oral injection of lidocaine. Tooth extraction is performed after carefully elevating a full thickness flap and extracting bilaterally the lower premolar and the first molar. After tooth removal and osteotomy, the surgical area is rinsed with saline solution and the flaps are secured with absorbable sutures. After a healing period of 3 months, full thickness flaps are elevated in edentulous area of each hemi-mandible. A grinding of the alveolar crest is gently conducted and results in a flat surface at the top of the ridge. Acute defects creation and/or implantation are performed bilaterally. The surgical area is carefully sutured with absorbable material. The post-surgical
analysis includes observations and measurements by help of Xrays, Computed Tomography, Micro-Computed Tomography, histology-histomorphometry.

**Results:** This mandibular minipig model was successfully applied in surgical research studies on: dental implant design, testing of metal alloys, bone regeneration with absorbable scaffolds.

**Conclusion:** The MEPIDOR (MEdeon Science Park, Malmö, Implant Dentistry Oral Regeneration) minipig model demonstrated its usefulness and reliability in oral surgical research.

**Sepsis, Infection, Immunity** A034

**The role of gram stain in the diagnosis of acute septic arthritis**

Davidson Jerome Andrew1, Bidwai Amit Sharad Chandra2, Webber Jane3

1 Milton Keynes General Hospital, UK, 2 Milton Keynes General, 3 Milton Keynes general.

**Background:** Early diagnosis and management of septic arthritis is required in order to prevent long term dam-age to the articular surface and subsequent morbidity. Traditional orthopaedic teaching indicates the mainstay of diagnosis of septic arthritis is urgent joint aspiration and Gram stain. Objective We wished to review the effectiveness of Gram stain from joint aspiration for the diagnosis of sep-tic arthritis of the knee in our institution.

**Patients and Methods:** Retrospective review of patients who underwent joint aspiration for suspected septic arthritis in the emergency department. Patients were identified through the microbiology database. For each pa-tient data was collected to determine the result of Gram staining and subsequent culture result. n = 140.

**Results:** +ve culture = 25 of which 5 cases organisms seen on Gram stain

**Conclusions:** In our series only 10% of patients with subsequent positive microbiological culture had an initial positive finding on urgent Gram stain. This is of concern given when organisms are identified on Gram stain this is often the basis to commence treatment for septic arthritis. We therefore submit that Gram stain alone cannot not be relied upon in the acute setting in order to diagnose and start treatment for septic arthritis and may not be necessarily be undertaken on an urgent basis.

**Orthopedic** A035

**Debridement for isolated patellar chondral lesions with radiofrequency ablation**

Davies Benjamin1, Kothari Alpesh2, Bidwai Amit Sharad Chandra3, Flynn Julian Robert4

1 Milton Keynes General Hospital, UK, 2 Milton Keynes General Hospital, 3 Milton Keynes General Hospital, 4 Milton Keynes General Hospital (bidzai2000@yahoo.co.uk)

**Background:** Early diagnosis and management of septic arthritis is required in order to prevent long term dam-age to the articular surface and subsequent morbidity. Traditional orthopaedic teaching indicates the mainstay of diagnosis of septic arthritis is urgent joint aspiration and Gram stain. Objective We wished to review the effectiveness of Gram stain from joint aspiration for the diagnosis of sep-tic arthritis of the knee in our institution.

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**Orthopedic** A036

**Inpatient versus outpatient prevention of osteoporotic fragility fractures**

Davies John1, Jain Manesh2, South Alison3, Grogan Richard4

1 Bradford Teaching Hospitals NHS Trust, UK, 2 Bradford Teaching Hospitals NHS Trust, 3 Bradford Teaching Hospitals NHS Trust, 4 Bradford Teaching Hospitals NHS Trust (johnfjaczie@btinternet.com)

**Introduction:** Calcium supplementation and bisphosphonate therapy are standard treatments for secondary prevention of osteoporotic fragility fractures. These fractures represent a major proportion of the trauma workload with an estimated 50,000 cases of proximal femur fractures per year in women in the UK. The UK National Institute for Clinical Excellence (NICE) guidelines recommend therapy for postmenopausal women over the age of 75 with a proven osteoporotic fracture.

**Methods:** Retrospective analysis of inpatient neck of femur (NOF) and outpatient wrist fractures sustained from a fall from standing height over a 3 month period from August to October 2007. Inclusion criteria were: age over 75, female gender and successful hospital discharge after inpatient stay or discharge from outpatient follow-up. Twenty seven patients were identified: 16 sustained a NOF and 11 had a wrist fracture. The overall mean age was 83 years.

**Results:** There was a significant difference in secondary prevention between inpatient and outpatient groups (Fisher’s exact test, p = 0.03). Of the 16 patients with NOF fractures 8 had therapy whilst 8 were deemed unsuitable either due to intolerance or pre-existing gastrointestinal disease. Ten of the 11 patients with wrist fractures had no therapy despite there being no contraindications to therapy.

**Conclusion:** Patients with wrist fractures represent a more active independent group than NOF patients despite this they were less likely to have secondary prevention for their fragility fracture. All inpatient NOF fractures were reviewed by a consultant ortho-geriatrician during admission. Targeting therapy at...
patients in the wrist fracture group may be of more benefit in terms of preventative medicine.

**Discussion:** Patients with wrist fractures are more active and independent than patients discharged after treatment for a NOF fracture, despite this they were less likely to have secondary prevention for osteoporotic fragility fractures. Targeting therapy at patients in the wrist fracture group may be more beneficial in terms of prevention.

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**Plastic 1 A037**

**Immediate breast reconstruction in breast cancer: oncoplastic general surgery and plastic surgery—a qualitative assessment**

Dayal Sanjeev¹, Murray Juliette², Murphy Dermot³, Mckay Ian⁴, Lannigan Alison⁵

¹NHS Lanarkshire, UK, ²NHS Lanarkshire, UK, ³NHS Lanarkshire, UK, ⁴NHS Lanarkshire, UK, ⁵NHS Lanarkshire, UK (sanjeecday8@hotmail.com)

**Introduction:** Breast reconstruction in the UK is performed both by plastic surgeons and oncoplastic general surgeons. Few general surgeons however perform enough free flap work to offer transverse rectus abdominis myocutaneous (TRAM) or deep inferior epigastric perforator (DIEP) flaps as a choice for immediate breast reconstruction. This study was designed to assess, from a patient's perspective, the different practices for immediate breast reconstruction in breast cancer.

**Methods:** Questionnaires were sent to 58 patients from one hospital and 50 patients from the other who underwent mastectomy, axillary surgery and immediate breast reconstruction for breast cancer between January 2000 and January 2007. In the first hospital patients had to travel to a plastics unit to have their breast reconstruction performed while in the second hospital patients were referred to the oncoplastic general surgeon. The questionnaires sent to both groups of patients asked them questions about the options for surgery which were discussed, the type of surgery performed and any complications.

**Results:** 72 replies were received (67%). Half of the patients who had to travel to the plastics unit found the journey inconvenient and over 80% would have preferred to have all of their surgery in their local unit. Patients who were operated on by the plastic surgeon felt that they had been offered a wider range of different types of reconstruction (93% versus 67%). Patients also felt that the plastic surgeon was less likely than the general surgeon to recommended one particular type of reconstruction. Table 1 shows the percentage and type of reconstructions performed in both groups and we found that the plastic surgeon performed more DIEP reconstructions than any other type in comparison to LD based reconstructions performed by the oncoplastic general surgeon. The satisfaction scores in the oncoplasty general surgery group and plastic surgery group were 73.3% and 70% respectively. Similarly 46.6% and 42.5% patients in the respective groups felt that their breasts looked similar. More than three quarters of patients (76.6% and 80% in the respective groups) said that they would be happy to have the same reconstruction again.

**Discussion:** Despite considerable variation in the type of breast reconstruction that was performed in the two units, patients had similar levels of satisfaction with the results of surgery. Patients would prefer to have surgery locally but did get more choice about the type of reconstruction being performed by having their surgery in a plastics unit. Further work is being carried out to assess the reconstructions by photographic analysis by independent observers.

Table 1: Type of reconstruction performed in both groups

<table>
<thead>
<tr>
<th>Type of reconstruction</th>
<th>Plastic Surgeon</th>
<th>Oncoplastic Surgeon</th>
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<tbody>
<tr>
<td>TRAM</td>
<td>17.5%</td>
<td>17%</td>
</tr>
<tr>
<td>LD</td>
<td>27.5%</td>
<td>33%</td>
</tr>
<tr>
<td>Implant</td>
<td>5%</td>
<td>50%</td>
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<tr>
<td>2 Complication Hospital</td>
<td>24%</td>
<td>20%</td>
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<tr>
<td>2 Wound Infection</td>
<td>20%</td>
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**Conclusions:** Despite considerable variation in the type of breast reconstruction that was performed in the two units, patients had similar levels of satisfaction with the results of surgery. Patients would prefer to have surgery locally but did get more choice about the type of reconstruction being performed by having their surgery in a plastics unit. Further work is being carried out to assess the reconstructions by photographic analysis by independent observers.

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**Hepatobiliary 1 A039**

**Systemic administration of lidocaine does not improve liver function after hepatic ischemia-reperfusion injury combined with liver partial resection**

de Graaf Wilmari, Diepenhorst Gwen, Erdogan Deha, Hollmann Markus, van Gulik Thomas

¹Department of Surgery, Academic Medical Center, Amsterdam, The Netherlands, ²Department of Surgery, Academic Medical Center, Amsterdam, The Netherlands, ³Department of Surgery, Academic Medical Center, Amsterdam, The Netherlands, ⁴Department of Anesthesiology, Academic Medical Center, Amsterdam, The Netherlands, ⁵Department of Surgery, Academic Medical Center, Amsterdam, The Netherlands, ⁶Department of Surgery, Academic Medical Center, Amsterdam, The Netherlands.

**Background:** Systemic administration of lidocaine does not improve liver function after hepatic ischemia-reperfusion injury combined with liver partial resection.

**Aim:** To compare 99mTc-GSA, 99mTc-mebrofenin HBS, ICG-clearance and GEC for assessment of LF in regenerating rat livers.

**Methods:** In protocol 1, LF was determined by 99mTc-GSA with SPECT followed by ICG-clearence on day 1 (n = 6), 3 (n = 6), 5 (n = 6) and 7 (n = 6) after 70% partial hepatectomy (PHX). In protocol 2, 99mTc-mebrofenin HBS was followed by GEC on the same days (n = 6 each timepoint). A control group (n = 6) underwent no resection. Conventional liver volume (CLV), functional liver volume (FLV), 99mTc-GSA uptake, 99mTc-mebrofenin uptake, GEC and ICG-clearance were expressed as percentage of baseline values (control group).

**Results:** One day after 70% PHX, CLV was 60.3% of baseline and further regenerated from 71.4% at day 3 to 76.7% and 76.4% at day 5 and 7, respectively. There was no difference between CLV and FLV, 99mTc-mebrofenin uptake (46.1% from baseline), 99mTc-GSA uptake (44.5%) and ICG-clearance were significantly lower than CLV. At day 5 and 7, there were no differences between 99mTc-mebrofenin uptake, ICG-clearance and CLV, 99mTc-GSA uptake however was still significantly impaired compared to CLV and 99mTc-mebrofenin uptake. GEC was preserved during the entire liver regeneration process.

**Conclusion:** Functional regeneration is impaired compared to volumetric regeneration in the early phase of regeneration. Hepatic 99mTc-GSA uptake as LF test underestimates hepatic regeneration in comparison to liver volume and 99mTc-mebrofenin uptake in the final phase of liver regeneration. GEC is preserved during liver regeneration.

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**Transplantation, Organ preservation 2 A038**

**Quantitative assessment of liver function during experimental liver regeneration**

de Graaf Wilmari, Bennink Roelof J, Maas Adrie, de Bruin Kora, van Gulik Thomas

¹Department of Surgery/Surgical Laboratory, Academic Medical Center, University of Amsterdam, The Netherlands, ²Department of Nuclear Medicine, Academic Medical Center, University of Amsterdam, The Netherlands, ³Department of Surgery/Surgical Laboratory, Academic Medical Center, University of Amsterdam, The Netherlands, ⁴Department of Nuclear Medicine, Academic Medical Center, University of Amsterdam, The Netherlands, ⁵Department of Surgery/Surgical Laboratory, Academic Medical Center, University of Amsterdam, The Netherlands.

**Background:** Reliable assessment of liver function (LF) in donor and recipient during regeneration is crucial after living-donor-liver transplantation. Indocyanine green (ICG) clearance and galactose elimination capacity (GEC) have been employed as quantitative LF tests. 99mTc-mebrofenin hepatobiliary scintigraphy (HBS) and 99mTc-GSA scintigraphy with SPECT are 2 nuclear imaging techniques introduced for quantitative assessment of LF. 99mTc-GSA can be combined with SPECT, enabling simultaneous assessment of LF and functional liver volume (FLV).

**Aims:** To compare 99mTc-GSA, 99mTc-mebrofenin HBS, ICG-clearance and GEC for assessment of LF in regenerating rat livers.

**Methods:** In protocol 1, LF was determined by 99mTc-GSA with SPECT followed by ICG-clearence on day 1 (n = 6), 3 (n = 6), 5 (n = 6) and 7 (n = 6) after 70% partial hepatectomy (PHX). In protocol 2, 99mTc-mebrofenin HBS was followed by GEC on the same days (n = 6 each timepoint). A control group (n = 6) underwent no resection. Conventional liver volume (CLV), functional liver volume (FLV), 99mTc-GSA uptake, 99mTc-mebrofenin uptake, GEC and ICG-clearance were expressed as percentage of baseline values (control group).

**Results:** One day after 70% PHX, CLV was 60.3% of baseline and further regenerated from 71.4% at day 3 to 76.7% and 76.4% at day 5 and 7, respectively. There was no difference between CLV and FLV, 99mTc-mebrofenin uptake (46.1% from baseline), 99mTc-GSA uptake (44.5%) and ICG-clearance were significantly lower than CLV. At day 5 and 7, there were no differences between 99mTc-mebrofenin uptake, ICG-clearance and CLV, 99mTc-GSA uptake however was still significantly impaired compared to CLV and 99mTc-mebrofenin uptake. GEC was preserved during the entire liver regeneration process.

**Conclusion:** Functional regeneration is impaired compared to volumetric regeneration in the early phase of regeneration. Hepatic 99mTc-GSA uptake as LF test underestimates hepatic regeneration in comparison to liver volume and 99mTc-mebrofenin uptake in the final phase of liver regeneration. GEC is preserved during liver regeneration.
Lidocaine can modulate inflammatory responses by inhibiting the priming of polymorphonuclear leukocytes, thereby reducing the release of toxic oxygen metabolites. Systemic lidocaine infusion has been reported to attenuate I/R injury in heart, lung and brain.

**Aim:** To investigate the effect of systemic lidocaine on postoperative liver function after hepatic I/R combined with PHX.

**Methods:** In the resection groups a 30% PHX was performed with saline ($n = 6$) or lidocaine ($n = 6$). In the ischemic groups, 30% PHX (non-ischemic lobes) was combined with 45 min ischemia using lidocaine ($n = 6$) or saline ($n = 6$) infusion. A group undergoing no resection or ischemia served as a control group ($n = 4$). Lidocaine was administered i.v. as a bolus (50 mg/kg) 30 min prior to ischemia, followed by continuous infusion (50 mg/kg/hr) until PHX. Lidocaine infusion after PHX was reduced to 2.0 mg/kg/hr and continued until 20 min reperfusion. At 24 hour reperfusion, hepatic damage (ALT/AST), inflammation (tissue myeloperoxidase) and liver function (prothrombin time, indocyanine green (ICG) clearance and bilirubin) were measured.

**Results:** PHX alone resulted in significantly elevated plasma ALT/AST levels with no significant differences between saline and lidocaine groups. Plasma ALT/AST levels increased significantly in the ischemic group with no differences between the saline and lidocaine groups. Liver function was significantly impaired in the ischemic groups with increased ICG T1/2, bilirubin and prothrombin time. Tissue myeloperoxidase was significantly increased in the ischemic groups. There were no significant differences in bilirubin levels, ICG T1/2, and myeloperoxidase between lidocaine and saline ischemic groups.

**Conclusion:** Systemic lidocaine did not improve liver function in this rat model of hepatic I/R injury combined with PHX.

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**BRENDEL A040**

**Molecular Imaging of Tumor Associated Angiogenesis using P1227, a novel MRI contrast agent targeting αvβ3 Integrin**

Debergh Isabelle1, Van Damme Nancy2, Smeets Peter3, Peeters Marc4, Pattyn Pierre5, Ceelen Wim6

1 Department of Surgery, Ghent University Hospital, Ghent, Belgium, 2 Department of Gastroenterology, Ghent University Hospital, 3 Department of Radiology, Ghent University Hospital, 4 Department of Gastroenterology, Ghent University Hospital, 5 Department of Surgery, Ghent University Hospital, 6 Department of Surgery, Ghent University Hospital (wim.ceelen@ugent.be)

**Background:** The recent introduction of biological anticancer therapy has renewed the interest in functional imaging of tumor associated angiogenesis as a tool to monitor therapy response. The present study evaluated imaging of tumor associated angiogenesis using a molecular MRI probe targeting αvβ3 Integrin, a signal transduction molecule expressed by neoplastic endothelium.

**Materials and methods:** HT29 human colorectal cancers were grown in athymic mice. MRI imaging was performed using a 3D VIBE sequence (voxel dimension 0.5 × 0.5 × 24mm, TR/TE 6/782-78 ms, flip angle 12°). Images were obtained at baseline and 5, 20, 35, 50, 80, 95, and 110 minutes after injection of P1227 at a dose of 50 μmol Gd/kg. Signal intensity was evaluated in regions of interest encompassing the entire tumor, the tumor rim, and normal paravertebral muscle.

**Results:** Administration of P1227 was well tolerated by the animals. Following injection, non specific enhancement resulted in a similar enhancement pattern of paravertebral muscle, the tumor rim and the entire tumor. However, starting from 20 minutes post injection specific enhancement of the tumor rim was observed resulting in a rim/muscle ratio larger than 1 (1.16 ± 0.34). Subsequent imaging resulted in a steadily increasing contrast enhancement in the tumor rim, with at 110 minutes a rim/muscle ratio of 1.23 ± 0.35 indicating specific binding of the αvβ3 integrin moiety.

**Conclusions:** Molecular imaging using P1227 allows visualization of activated tumor associated endothelium by targeting αvβ3 integrin. P1227 holds considerable promise for imaging angiogenesis in human solid cancers.

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**Oncology A041**

**Differential gene expression between metastatic colorectal tumours in liver and peritoneum**

Debergh Isabelle1, Van Damme Nancy2, Peeters Marc3, Van Hummelen Peter4, Pattyn Pierre5, Ceelen Wim6

1 Department of Surgery, Ghent University Hospital, Ghent, Belgium, 2 University Hospital, Department of Gastroenterology, 3 University Hospital, Department of Gastroenterology, 4 Flemish Institute of Biotechnology, Microarray Facility, 5 Department of Surgery, Ghent University Hospital, 6 Department of Surgery, Ghent University Hospital (wim.ceelen@ugent.be)

**Objectives:** Metastatic spread is the leading cause of colorectal cancer deaths. In a minority of patients, peritoneal carcinomatosis (PC) develops in the absence of distant metastasis. It is unknown, whether differences in gene expression underlie this specific behaviour of PC. The aim of the current study was to compare global gene expression between liver metastases (LM) and isolated PC resection specimens.

**Methods:** Gene expression profiles were determined from 10 LM and 7 isolated PC patients. From each patient RNA was extracted from fresh frozen tumour and adjacent normal tissue, taken at resection. Microarray analysis was conducted on Affymetrix U133 2.0 full genome arrays. Statistical comparison was performed by a linear model t-test with Benjamini-Hochberg correction for multiple testing using GeneMaths XT (Applied Maths).

**Results:** Statistical analysis between the 2 normal tissues and between the 2 tumour tissues yielded 16,824 and 1,479 differentially expressed probes, respectively. Principal Component Analysis and cluster analysis showed that normal tissues were vastly different while tumour tissues were more comparable. After correction for this apparent normal tissue signature the true number of genes differentially expressed between the 2 types of secondary tumours was 179. The majority of those genes are involved in immune response, cellular differentiation, epithelial to mesenchymal transition (EMT), and cell growth. The most significant gene pathways were the IL6 and TGF-β signalling, Wnt and Notch pathways that were generally higher expressed in PC specimens.

**Conclusions:** Gene expression profiles differentiate LM from isolated PC in colorectal cancer patients. At present, it is unclear whether the observed difference in gene expression is responsible for tissue selection during invasion or represents a re-differentiation signature induced by the target organ.

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**Cardiovascular, Thoracic A042**

**Pre operative annular abscess evaluation by CT Scan during acute infective**

Demaria Roland1, Gahide Gerald2, Rouviere Philippe3, Frapier Jean Marc4, Vernhet Kovacsik Helene5, Albat Bernard6

1 Thoracic and Cardiovascular Surgery Unit Arnaud de Villeneuve Hospital, Montpellier Teaching Hospital, Montpellier, France, 2 Thoracic and Cardiovascular Surgery Unit Arnaud de Villeneuve Hospital, Montpellier Teaching Hospital, 3 Thoracic and Cardiovascular Surgery Unit Arnaud de Villeneuve Hospital, Montpellier, France, 4 Thoracic and Cardiovascular Surgery Unit Arnaud de Villeneuve Hospital, Montpellier Teaching Hospital, 5 Thoracic and Cardiovascular Surgery Unit Arnaud de Villeneuve Hospital, Montpellier, France, 6 Thoracic and Cardiovascular Surgery Unit Arnaud de Villeneuve Hospital, Montpellier Teaching Hospital, Montpellier, France, 7 Thoracic and Cardiovascular Surgery Unit Arnaud de Villeneuve Hospital, Montpellier, France, 8 Thoracic and Cardiovascular Surgery Unit Arnaud de Villeneuve Hospital, Montpellier Teaching Hospital, Montpellier, France, 9 Thoracic and Cardiovascular Surgery Unit Arnaud de Villeneuve Hospital, Montpellier, France, (demaria@chu-montpellier.fr)

**Introduction:** Patients with acute infective endocarditis present sometimes annular abscess with important consequences in term of surgical strategy and technique. However, annular abscesses are sometimes difficult to assess and precisely locate with echocardiography, especially at the beginning of the process. The aim of this study was to assess the role of computed tomography (CT Scan) for annular abscess evaluation.

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Methods: Twenty-three consecutive patients (55 ± 13 years) presenting with acute endocarditis necessitating valve replacement were prospectively enrolled in this study (2004/01 to 2007/01). CT Scan was performed 1 to 3 days before cardiac surgery, using a 16-slices CT (Lightspeed 16, General Electric). No β-receptor blocker medication was used to slow the heart rate.

Results: CT Scan could not be performed in one patient because of sustained tachycardia (160 BPM). Nine patients (34±6%) presented an annular abscess: on the aortic valve: (n = 8) and on the mitral valve: (n = 1). For the abscesses of the aortic valve, 5 were located on left coronary sinus of Valsalva, 1 on junction of both coronary sinuses, 1 on non-coronary sinus, 1 associated with double coronary desinsertion. They ranged in size from 6 to 60 mm (mean 23 ± 14mm). Peroperatively, all these 9 valvular abscesses were confirmed, and 2 others annular aortic abscesses were found, which were very small necrotic lesions in progress.

Conclusion: CT Scan performed before surgical management for acute endocarditis is useful to participate in the assessment of the annular abscesses and may help surgeon to decide, with echocardiogram, of an adapted surgical strategy to repair the annulus.

Orthopedic.2 A043

The Dynastab K – an innovative type of external knee fixator

Deszczynski Jaroslaw1, Kołodziejski Paweł2, Stolarczyk Paweł1, Szczęsny Grzegorz4, Deszczynska Helena5

1 Dept. Orthop. & Rehab, Medical University, Warsaw, Poland, 2 Department of Orthopedics and Rehabilitation, Warsaw Medical University, Poland, 3 Department of Clinical Rehabilitation, Warsaw Medical University, Poland, 4 Dept. Orthop. & Traumatol., Med. Uniw., Warsaw, Poland, 2 Dep. Surg. Res., Pol. Acad. Sci, Warsaw, Poland, 5 Department Of Anatomy, Medical University, Warsaw, Poland (jdeszcz@o2.pl)

The kinetics of the knee is a complicated combination of rolling, sliding and external rotational movements. As a result, it is difficult to construct an external stabilizing device that will accomodate all of these aspects. Postoperatively expanding range of motion is essential to avoid joint stiffness, muscle contraction and remodelling of articular surfaces.

The Dynastab K is, according to the authors' knowledge, the world's first external knee fixator that allows for the rolling and sliding components of knee movement. We implanted this fixator on 25 artificial knee models and on 5 cadaver knees. In every case we managed to accurately fit the fixator to the kinetics of the knees – there were no visible movements of the reversed pin over the tibia. The average time of implantation was 21.2 min (bone models) and 66.4 min (cadavers). This study confirms the potential utility of the Dynastab K (knee) in the early stages of knee rehabilitation following

Plastic.2 A044

Versatility of the anterolateral thigh free flap in soft tissue reconstruction: the Cambridge experience

di Candia Michel1, lie kwok2, malata charles3, simcock jeremy4, kumiponjera devor5, cormack george6

1 Dipartimento Chirurghia Plastica E Ricostruttiva Università Degli Studi Di Bari, Italy, 2Clinical school of medicine Cambridge University (U.K), 3department of Plastic Surgery Addenbrooke's University Hospital Cambridge (U.K), 4department of Plastic Surgery Addenbrooke's University Hospital Cambridge (U.K), 5department of Plastic Surgery Addenbrooke's University Hospital Cambridge (U.K), 6department of Plastic Surgery Addenbrooke's University Hospital Cambridge (U.K) (micdelcandiac@yahoo.it)

Introduction: The anterolateral thigh (ALT) free flap has found many applications for soft tissue reconstruction following its description by Song et al, in 1984 and the elucidation of its vascular anatomy by Cormack and Lamberty in the same year. Although popular world wide its adoption in the “Western World” has been relatively slow. With an increase and diversification of free tissue transfers (FTTs) in our Unit, it was decided to review our overall experience with the ALT free flap. Patients and methods: An 8-year retrospective case note study of patients undergoing soft tissue reconstruction using the Anterolateral thigh flap was undertaken. A total of 55 patients were identified. The data was analysed in terms of indications, site of reconstruction, size and anatomy of flap, donor site closure and outcomes.

Results: Between January 1999 and October 2007, 55 anterolateral thigh free flaps were performed in 55 patients (39 male, 16 female), with a mean age of 52.5 years (r, 13–73). The soft tissue defects reconstructed were located in the upper and lower extremities (21), skull base (15), head and neck region (15) and trunk (4). The indications for surgery were trauma, cancer and infections. 32 flaps (59%) had septocutaneous perforators while 23 (41%) were musculocutaneous. The flap size ranged from 11 × 6 cm to 22 × 13 cm. 15 ALT fasciocutanous (27%) flaps were harvested with a small cuff of the vastus lateralis muscle in order to protect the perforating vessels or increase the bulk of the flap. A variety of recipient vessels were used. The mean ischemic time was 82 minutes. The thigh donor sites were closed directly in 42 patients (78.9%) while in 13 patients (21.1%) split skin grafting was required. Donor site problems included two cases of partial skin graft take and three seromas requiring aspiration; there were no long term donor site problems. The mean follow-up time was 17.5 months (range, 2 to 48).

Discussion and Conclusion: The ALT free flap is highly versatile with a variety of indications. It constitutes an ideal soft tissue replacement at various locations of the body. In our study it was used for head and neck, lower limb defects and to a lesser extent trunk defects. The ALT flap in our study had an excellent success rate (100%), thanks to its favourable pedicle, ease of harvest, reliable skin paddle, and variable thickness with minimal donor site morbidity. In our practice this flap has become the flap of choice in many soft tissue reconstructions.

Gastrointestinal.1 A045

The role of C-reactive protein in a murine intestinal ischemia/reperfusion model

Diepenhorst Gwen1, van Vliet Arlene PhD2, Niessen Hans MD, PhD3, Aalberse Rob PhD4, van Gulik Thomas MD, PhD5, Hack Erik MD, PhD6

Department of Surgery, Surgical Laboratory, Academic Medical Centre, University of Amsterdam, The Netherlands. (G.M.Diepenhorst@amc.uva.nl)

Introduction: Activation of the complement system contributes to the pathogenesis of ischaemia/reperfusion (I/R) injury. This activation occurs via binding of specific proteins such as natural antibodies and C-reactive protein (CRP) to neoantigens exposed on ischemic tissue membranes. As CRP is only synthesized in trace amounts in the mouse, this animal model may serve as a ‘natural knock-down’ system to explore the role of CRP in intestinal I/R injury.

Aim: To assess whether human C-reactive protein can enhance complement activation in a murine model of intestinal I/R.

Method: Male C57BL/6 WT mice (n = 22) were used in a mechanically ventilated intestinal I/R model. After pre-ischaemic administration of human CRP (1,5 and 15 µg/g bodyweight i.v.) or saline for control groups (each n = 5), mice underwent 10 minutes of intestinal ischemia by superior mesenteric artery occlusion followed by two hours of reperfusion. As controls, sham laparotomy groups with corresponding reperfusion times were included (n = 4). Intestinal histopathological damage was assessed according to the Park-Chiu classification. To assess complement activation, immunohistochemical staining of complement factor C3 was performed on intestinal tissue sections. At sacrifice, blood gasses and circulating CRP concentrations were measured. Intestinal edema was determined using the wet/dry ratio. To ensure haemodynamic stability, mean arterial pressures were monitored.
Results: Administration of human CRP yielded no significant differences in intestinal histopathological damage as compared to saline-treated groups. Compared to sham groups, saline or CRP-treated ischemic groups demonstrated significantly higher histological damage scores ($p < 0.05$). Edema and blood gas values were also similar in saline and CRP-treated animals. Circulating CRP levels at sacrifice ranged within human acute phase levels. Immunohistochemical staining of intestinal tissue demonstrated activated C3 depositions in ischemic groups which were absent in sham controls.

Conclusion: Human CRP does not enhance complement activation in this murine intestinal I/R model.

Transplantation, Organ preservation_A046

Expression of markers characteristic for human keratinocyte stem cells under the influence of human lymph and serum

Domaszewska Anna$^1$, Zaleska Marzanna$^2$, Olzewska Waldemar L$^3$

$^1$Department of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, $^2$Department of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, $^3$Dept Surg Res & Transplanted, Med Res Center, Ps Aast Sci, Warsaw, Poland, Dept. of Transpl Surg, Central Clin Hop, Min Int Aff, Warsaw, Poland, The Norwegian Radiumhospital-Rikshospitalet, Oslo, Norway (zilo@cmdik.pan.pl)

Previous study performed in our department, using ELISA method, revealed a large number of growth factors, cytokines and chemokines in the human lymph fluid. Moreover, we found that leg skin expressed more cells with stem cells antigens in comparison to other regions. Progenitor/stem cell populations of epithelium are known to reside in the small-sized cell population. Small-sized cells demonstrated the highest colony-forming efficiency, and a highest long-term proliferative potential. This observations prompted us to study the effect of lymph on proliferation potential of human epidermal cells in vitro.

Aim: To study the effect of human peripheral lymph and serum on the number of keratinocyte stem cells detected in the in vitro culture. The expression of markers characteristic for human keratinocyte stem cells, colony-forming efficiency, and long-term proliferative potential allow us to determine the differences between observed cells populations.

Methods: Skin sections were stained using monoclonal antibodies against: p63, CD29 ($\beta$-integrin) as well as CD4+ and were analyzed using confocal microscopy and compared with healthy control. Keratinocytes were isolated from three parts of human epidermis of different proliferative potential: sole, foot and groin. Cells were cultured in various concentrations of lymph and serum (100%, 50%, 20% of lymph and the same dilutions of serum). Lymph contained IL-1, IL-6, TNF-α, KGF, EGF, VEGF, TIMP-1, TIMP-2 at levels significantly higher than serum. Control cells culture were conducted in medium RPMI with 5% fetal bovine serum. To identify cytokines responsible for KC proliferation IL-6, TNF-α, KGF and VEGF were blocked with neutralizing antibodies. After 1 and 7 days of culture the phenotypes were studied using monoclonal antibodies against CD34, p63 (stem cells), CD29 (transient daughter cells) using confocal microscopy. Furthermore, the colony-forming cells were observed and proliferative potential was measured by detection of the markers of differentiation K67 and PCNA in confocal microscopy. Additionally BrdU incorporation rate was estimated after 7 days of culture using flow cytometry analysis.

Results: Seven day lymph culture revealed increased number of p63 and CD29 positive cells compared with cells cultured in RPMI with 5% FCS. There were no differences in expression of CD34 marker. Moreover, there was increased number of dividing cells in cultures supplemented with lymph. Colony-forming efficiency was the highest in cultures with 20% lymph concentration.

Conclusion: Cells cultured in lymph expressed increased number of stem cells markers and the proliferating rate was also increased. Lymph cytokines and growth factors are participating in keratinocyte proliferation and are probably responsible for high number of presumptive keratinocyte stem cells.

Plastic_2 A047

The Patient Scar Assessment Questionnaire (PSAQ) – A Valid & Reliable Measure of Patients’ Perception of Scarring

Durani Piyush$^1$, McGrouther Duncan$^2$, Ferguson Mark$^3$

$^1$University of Manchester & Renovo Plc, UK, $^2$University of Manchester, $^3$University of Manchester & Renovo Plc (p.durani@yahoo.co.uk)

Introduction & Aims: Scarring can be a significant burden for patients. Patient-reported outcome measures of scarring are limited in scope and few are fully validated using the principles of psychometric theory. The aim was to design and validate a patient-reported outcomes measure of scarring.

Method: Patient interviews were used to construct the Patient Scar Assessment Questionnaire (PSAQ) with 5 subscales (Appearance, Symptoms, Consciousness, Satisfaction with Appearance, Satisfaction with Symptoms), which assessed the items. The PSAQ was applied to various surgical populations (total scar assessments n = 667) at months 3/6/12 post-surgery and tested for internal consistency, test-retest reliability, convergent validity, known group differences and sensitivity.

Results: Subscales showed high internal consistency (Cronbach’s alpha = 0.73–0.94), except the Symptoms subscale. Test-retest reliability was acceptable across all subscales (ICC = 0.61–0.97). Change in PSAQ scores was significant between month 3 and 6 post-op ($p < 0.001$) and App/Consc subscale scores exhibited known-group differences ($p < 0.001$). Convergent validity was demonstrated by significant moderate-high correlations with various measures of similar constructs ($R = 0.40–0.60$, $p < 0.001$).

Conclusion: The PSAQ is a reliable and valid measure of patients’ perception of scarring, although the Symptoms subscale requires further refinement. Subscales can be used independently of each other to allow assessment of scar change in specific domains (previously accepted and presented at Winter BAPRAS London, Dec 2007).

Oncology_2 A048

Immune reponse of spleen monocytes to C5731 tumor

Durowicz Sergiusz$^1$, Gewartowska Magdalena$^2$, Olzewska Waldemar L$^3$

$^1$Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, $^2$Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, $^3$Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland (zilo@cmdik.pan.pl)

The role of spleen in up- or downregulating of growth of colon cancer liver metastases remains unknown. Numerous clinical and experimental reports provide controversial data. Spleen sends cohort of migrating cells, among them dendritic cells (DC), with splenic blood to the liver upon the so far unknown signals. Moreover, spleen is a site of recognition and elimination of various antigens, presumably also of cancer cells. This assumption is based on rarely occurring cancer metastases of cancer to the spleen and very infrequent primary spleen tumors. The question arises whether splenic DC may play a protective role in the response to tumor antigens and can be used as attackers in anti-cancer vaccines in cooperation with CD8 cells.

Aim: To isolate splenic enriched DC population, activate with LPS, and investigate their adherence and cytokotoxicity to C5731 cancer cells.

Methods: Rat DC-enriched population was isolated according to NIH method and stimulated in vitro with E.coli LPS. Adherence to CC531 was studied in suspension, on culture monolayer and frozen sections of liver metastases. Immune response of spleen monocytes to CC531 tumor was performed on CC531 monolayer. The PSAQ is a reliable and valid measure of patients’ perception of scarring, although the Symptoms subscale requires further refinement. Subscales can be used independently of each other to allow assessment of scar change in specific domains (previously accepted and presented at Winter BAPRAS London, Dec 2007).

Oncology_2 A048

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$^1$Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, $^2$Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, $^3$Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland (zilo@cmdik.pan.pl)

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Foot defects in diabetics
El Gawad Ahmed1, Defy Charlotte2, Gokarajn Kripa3, Salama Yehia4, Galal Ibrahim5

1 Cairo University, Egypt, 2 Plastic Surgery Tainee, UK, 3 General surgery tainee, uk, 4 General Surgery Tainee, UK, 5 Prof Plastic Surgery, Cairo University (elgawad@gmail.com)

Lower extremity defects represents a major concern for patient with diabetes and for those who treat them from both a quality of life and economic stand point. The magnitude of the clinical picture and morbidity mirrors the severity and complexity of the underlying pathobiology. The three pathogenetic mechanisms involved are ischaemia, neuropathy and immunopathy. Seldom do these mechanisms work in isolation, rather most foot defects result from a complex interplay among all three. However, the problem in diabetics is not only how to bridge foot defects, but also general systemic problems such as uraemia, anemia and hypoaluminaeemia which all interplay against wound healing. Local orthopedic problems such as osteomyelitis, septic arthritis & charcot joint are also a stand point in coverage of foot defects. Foot defects in diabetics is thus a highly delicate and complicated problem which should be handled from the start with great care and should not be looked at lightly whatever the initial presenting.

Minimally invasive A051
Notes: improving triangulation by triple access
Eleftheriadis Efthymios1, Kotzampassi Katerina2, Grosamanidis Vasilios3, Kapoutzis Konstantinos4, Douros Vasilios5
1 Department Of Surgery, Faculty Of Medicine, University Of Thessaloniki, Thessaloniki, Greece, 2 Department of Surgery, Faculty of Medicine, University Of Thessaloniki, Thessaloniki, Greece, 3 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece, 4 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece, 5 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece (kakothet@yahoo.com)

Background-Aims: In flexible endoscopy triangulation is very difficult to be performed due to the proximity and the parallel course of the endoscopic instruments to the optical axis. Since triangulation is critical for NOTES to be matured, we decided to investigate experimentally whether triangulation can be improved by using three endoscopes inserted through different natural orifices.

Methods: Twelve pigs weighing 25–30kg were subjected to laparotomy. Three endoscopes were introduced into the peritoneal cavity via the transgastric, transcolonic and transvaginal routes, respectively, under direct inspection through the open abdomen. Then laparotomy was tightly closed and pneumoperitoneum was created through a Verres needle. Using one endoscope for vision [eyes] and the other two for manipulations [hands] all combinations were performed, in relation to the orifice of insertion and the role of each endoscope. Three basic manipulations were performed: clips closure manipulation therein. Thirteen pigs were subjected to a 15mmHgCO2 pneumoperitoneum under general anaesthesia. Using NOTES-techniques, two endoscopes, one single and one double channel, were introduced into the peritoneal cavity via the transgastric and the transcolonic routes, respectively. Virtually all manipulations were performed with the one endoscope; the other being involved only if and when ergonomically applicable. The animal was positioned in a lateral decubitus site, the small-bowel loops being moved to leave the kidney exposed. The parietal peritoneum was punctured with an injection needle at the lower renal pole and air was insufflated manually into the retroperitoneum, up to its sufficient distention. A small incision was then made by a precut-needle sphincterotome and the endoscope pushed and inserted into the retroperitoneum. The soft connective tissue was cut free by a biliary stone-extraction balloon, to expose the renal blood vessels, the ureter, the adrenal gland and part of the pancreas. After detailed preparation, the renal artery and vein were separately ligated with double clips and diathermically divided. Since no communication existed between right and left retroperitoneum, the same manipulations were then performed on the intact other side, thus permitting the use of the same animal twice. The creation of retro-pneumo-peritoneum was not difficult and the space of the constructed cavity was sufficient for complete retroflexion of the endoscope. The freeing of the anatomical structure of interest was difficult and time consuming, but bleeding was avoided. Exploration of the retroperitoneum and surgical manipulations seems technically feasible, but its application in humans presupposes the resolution of the ethical and technological issues surrounding NOTES.

Minimally invasive A050
Exploration of the retroperitoneum through natural orifices
Eleftheriadis Efthymios1, Kotzampassi Katerina2, Grosamanidis Vasilios3, Panidis Stavros4
1 Department Of Surgery, Faculty Of Medicine, University Of Thessaloniki, Thessaloniki, Greece, 2 Department of Surgery, Faculty of Medicine, University Of Thessaloniki, Thessaloniki, Greece, 3 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece, 4 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece (kakothet@yahoo.com)

NOTES has been carried-out experimentally in various body compartments; the peritoneal cavity, the mediastinum, the thoracic cavity. This study was undertaken to assess the feasibility of endoscopic insertion into the retroperitoneum through a natural orifice and the performance of surgical manipulation therein. Thirteen pigs were subjected to a 15mmHgCO2 pneumoperitoneum under general anaesthesia. Using NOTES-techniques, two endoscopes, one single and one double channel, were introduced into the peritoneal cavity via the transgastric and the transcolonic routes, respectively. Virtually all manipulations were performed with the one endoscope; the other being involved only if and when ergonomically applicable. The animal was positioned in a lateral decubitus site, the small-bowel loops being moved to leave the kidney exposed. The parietal peritoneum was punctured with an injection needle at the lower renal pole and air was insufflated manually into the retroperitoneum, up to its sufficient distention. A small incision was then made by a precut-needle sphincterotome and the endoscope pushed and inserted into the retroperitoneum. The soft connective tissue was cut free by a biliary stone-extraction balloon, to expose the renal blood vessels, the ureter, the adrenal gland and part of the pancreas. After detailed preparation, the renal artery and vein were separately ligated with double clips and diathermically divided. Since no communication existed between right and left retroperitoneum, the same manipulations were then performed on the intact other side, thus permitting the use of the same animal twice. The creation of retro-pneumo-peritoneum was not difficult and the space of the constructed cavity was sufficient for complete retroflexion of the endoscope. The freeing of the anatomical structure of interest was difficult and time consuming, but bleeding was avoided. Exploration of the retroperitoneum and surgical manipulations seems technically feasible, but its application in humans presupposes the resolution of the ethical and technological issues surrounding NOTES.

Hepatobiliary_1 A052
Effect of preoperative endoscopic biliary drainage and stenting on postoperative infection and the outcome of surgery for benign obstructive jaundice
Elsebaw Magdy MA1, e Hussin2, Helmy Ahmed Hazem3, Fakhry Sameh4
1 Academic Unit of Surgery Institute Egypt, 2Academic Unit of Surgery, 3Academic Unit of Surgery, 4 Hepatology-Gastroenterology-Tropical medicine (magdyelsebae@hotmail.com)

Conclusion: In NOTES triangulation is feasible by using three endoscopes, but co-ordination and co-operation should be improved.

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Introduction: Obstructive jaundice (OJ) patients come to the care of the endoscopist, before going to surgery. ERCP and stent insertion preoperatively became the routine in our institute. Preoperative biliary drainage in patients with malignant biliary obstruction was found to increase the risk of positive intraoperative bile cultures, postoperative infectious morbidity, and death. Avoiding routine drain placement, are strongly suggested in candidates for surgery. Review of literature from 1980 to 2005 no study was found that specifically identify the organisms present in bile in patients with benign obstructive Jaundice before endoscopic biliary stent insertion and after it at the beginning of surgical procedure.

The aim of this study: The objective of the present study was to evaluate the effect of preoperative endoscopic biliary drainage on the outcome of surgery for patients presenting with benign obstructive jaundice. A special emphasis is done on bacteriological study of bile samples from those patients before and after ERCP with biliary stenting and its possible association with postoperative septic complications.

Materials and Methods: The study involved 79 of patients with surgically corrected benign obstructive jaundice at TBRI. Preoperative endoscopic retrograde cholangiography (ERCP) was done for all of the patients and stent insertion was made in 60 of them. Bile specimens were obtained during endoscopic cholangiography by flushing technique and intra-operatively by puncture before incising the common bile duct. Bile samples were analyzed for their bacterial spectrum and sensitivity to antibiotics. Concomitant postoperative septic complications such as wound infection and cholangitis were also assessed.

Results: Bile culture of intra-operatively obtained specimens was positive in 39/60 (65.0%) of the patients in Group II (ERCP + biliary stent), a significantly higher incidence than that observed in group I (ERCP only), in which 7/19 (36.8%) of the patients presented positive cultures (p = 0.001). There was no significant difference in general postoperative morbidity between groups. When infective complications (cholangitis, pneumonia, wound infection) were analyzed separately, a higher incidence, although without significance, was found in Group II than in Group I.

Conclusion: Preoperative biliary drainage using the endoscopic retrograde cholangiopancreatoigraphy (ERCP) and stent insertion in patients subjected to surgery for benign obstructive jaundice could provokes biliary bacterial colonization with a possible appearance of infective complications during the postoperative period.

Hepatobiliary_2 A053

The effect of splenectomy on hepatic functional reserve and structural damage in patients with chronic hepatitis C virus infection

Elshae Magdy MA1, Abu-Zekri Nadia B2
1Department of General Surgery-Theodore Bilharz Research Institut, Cairo, Egypt, 2Department of Clinical Chemistry-Theodore Bilharz Research Institute.

Splenectomy in cirrhotic patients with HCV infection was reported that it diminishes virus burden. Whether this is reflected on the hepatic functional reserve and structural liver damage remains speculative. Aim of the study is to assess the effect of splenectomy on hepatic functional reserve and structural damage in patients with chronic hepatitis C virus infection by Non-invasive serum markers.

Methods: The study involved 15 consecutive patients with chronic hepatitis C (CHC) infection who underwent elective splenectomy surgery for the treatment of associated hypersplenism, thrombocytopenia and/or esophageal varices. The hepatic functional reserve is assessed before and two and sixty days after splenectomy by serum hyaluronic acid (HA) assay. Structural liver damage is assessed by non-invasive serum markers type IV collagen (C-IV), tissue inhibitor of metalloproteinases-1 (TIMP-1), aspartate aminotransferase to alanine aminotransferase (AST/ALT) ratio, and AST to platelet ratio index (APRI).

Results: Preoperative mean serum HA level > 86ng/ml was found in all cases. This was < 40ng/ml after splenectomy. Mean AST/ALT and APRI ratios decreased in all patients after surgery. Before splenectomy, both C-IV and TIMP-1 serum levels were elevated in all patients. After splenectomy, the C-IV and TIMP-1 showed a significant decrease in relation to the pre-splenectomy values both at early postoperative period and late follow-up.

Conclusion: Splenectomy in patients with chronic hepatitis C infection was associated with a decrease in serum markers of fibrosis levels, which persisted for at least 60 days. These results suggest that splenectomy improves hepatic functional reserve and diminishes structural liver damage in those patients.

Gastrointestinal_1 A054

Glutamate receptor inhibition improves intestinal function in experimental colitis

Éxces Dániel1, Varga Gabriella2, Kovács Tamás3, Kaszaki József4, Vécsei László5, Boros Mihály6
1Institute of Surgical Research, Szent-Györgyi Albert Medical and Pharmaceutical Center, University of Szeged, Hungary, 2Institute of Surgical Research, Szent-Györgyi Albert Medical and Pharmaceutical Center, University of Szeged, Hungary, 3Department of Pathiatrics, Szent-Györgyi Albert Medical and Pharmaceutical Center, University of Szeged, Hungary, 4Institute of Surgical Research, Szent-Györgyi Albert Medical and Pharmaceutical Center, University of Szeged, Hungary, 5Department of Neurology, Szent-Györgyi Albert Medical and Pharmaceutical Center, University of Szeged, Hungary, 6Institute of Surgical Research, Szent-Györgyi Albert Medical and Pharmaceutical Center, University of Szeged, Hungary (ercsda@gmail.com)

Background: There are very few data available on the peripheral roles of the N-methyl-D-aspartate (NMDA)-sensitive glutamate receptors (NMDA-R), but NMDA-R antagonism proved to be neuroprotective in the central nervous system. The aim of our study was to characterize the effects of the endogenous NMDA-R antagonist kynurenic acid (KYNA) and SZR72 compound, a synthetic KYNA analogue, which is able to pass the blood-brain barrier, on the gastrointestinal function in anesthetised male Wistar rats.

Methods: Acute colitis was induced by intracolonic administration of 2,4,6-trinitrobenzene sulfonic acid (TNBS). In the sham-operated (n = 6) and non-treated control groups (n = 6) enema was performed with the vehicle (25% ethanol) or TNBS, respectively, while in groups 3 and 4, KYNA (25 mg/kg i.v., n = 6) or SZR72 (10 mg/kg i.v., n = 6) treatments were started 18 hr after colitis induction. Macrohemodynamics were recorded, the large bowel motility was monitored with strain-gauge technique, while the serosal microcirculation of the colon was visualized by means of intravital videomicroscopy with orthogonal polarization spectral (OPS) imaging for 6 hr. Motility indices were determined by calculating the area under the motility curve as a function of time, the tone of the colon was given as the mean value of the minima in the motility curve. Tissue activities of inflammatory enzymes xanthine oxidoreductase (XOR), myeloperoxidase (MPO; a marker of leukocyte activation) and nitrogen monoxide synthase (NOS), were measured in colonic biopsies.

Results: The TNBS enema induced a systemic hyperdynamic circulatory reaction, augmented the intestinal motility and increased the serosal capillary blood flow. These changes were accompanied by significantly elevated mucosal XOR, MPO and NOS activities. Treatment with both NMDA-R antagonists significantly decreased the activities of XOR and MPO, increased the tone of the colonic smooth muscles and permanently decreased the motility index.

Conclusions: These results demonstrate a decisive modulatory role for glutamatergic receptors in intestinal motility alterations during the onset of experimental colitis. NMDA-R antagonism is anti-inflammatory in the colon—possibly due to XOR inhibition and prevention of the secondary activation of leukocytes. Grant support: NKTH-RET/708/2004.
Extremities A055

The efficacy of a phospholipid-enriched diet in the prevention of experimental rheumatoid arthritis

Eros Gabor1, Ibrahim Saleh2, Boros Mihaly3, Vollmar Brigitte4

1 Institute for Experimental Surgery, University of Rostock, Rostock, Germany; Institute of Surgical Research, University of Szeged, Szeged, Hungary; 2Immunogenetics Group, University of Rostock, Rostock, Germany, 3Institute of Surgical Research, University of Szeged, Szeged, Hungary, 4Institute for Experimental Surgery, University of Rostock, Rostock, Germany (erog@escpar.zote.u-szeged.hu)

Introduction: Our previous investigations have revealed that oral intake of phosphatidylcholine (PC) inhibits the inflammatory consequences in several experimental pathologies. Phosphatidylethanolamine (PE) and N-acylphosphatidylethanolamines (NAPEs) are endogenous phospholipids (PLs) linked to the PC metabolism, and may contribute to its effects in many different ways. The objective of our study was to characterize the inflammatory changes and the effects of a complex, PL-enriched diet in a murine model of collagen-induced arthritis (CIA).

Methods: The experiments were performed on DBA1/J mice. In groups 1–3 CIA was induced by administration of bovine type II collagen. Group 1 was kept on normal food, while in group 2 the animals were fed with PL-enriched diet containing 1% PC, 0.4% PE and 0.1% NAPEs for 6 weeks as a pre-treatment. In group 3 this diet was given as therapy for 6 weeks beginning with the clinical onset of the disease. Groups 4 and 5 served as controls and received either normal, or PL-enriched chow. CIA was evaluated using a clinical scoring system, inflammatory hyperalgesia was detected with thermal stimulation. The knee joints were observed by means of in vivo fluorescence microscopy: rolling fraction and firm adherence of leukocytes were determined, and functional capillary density was measured as a marker of inflammation-associated angiogenesis. Furthermore, histological analysis was performed in order to determine the destructive process within the joints.

Results: PL-pretreatment did not decrease the clinical scores, but significantly diminished the inflammation-linked hyperalgesia, reduced the number of leukocyte-endothelial cell interactions, attenuated inflammation-driven angiogenesis and improved the structural damage. PL-untake initiated after the onset of the disease did not reduce the signs and symptoms of CIA-associated inflammation.

Conclusion: Dietary PL supplementation is effective as a pre-treatment and PL-enriched diet may be a preventive anti-inflammatory approach in preclinical stages of chronic arthritis.

Neurosurgery A056

Neuronavigation and fluoroscopy assisted subdural strip electrode positioning – a simple method to increase intraoperative accuracy of strip localization in epilepsy

Förs Lórand1, Bágó Attila2, Entz László3, Halász Péter4, Fabó Dániel5, Fedorcsák Imre6


For localizing the epileptogenic zone in cases of focal epilepsies detailed clinical investigations, imaging studies and electrophysiological methods are in use. If the non-invasive presurgical evaluation provides insufficient data, intracranial electrodes are necessary. CT and MRI techniques are gold standard to localize the postoperative position of the implanted intracranial electrode contacts. However if the electrodes (strips) are inserted through a burr hole, the exact localization of the electrode contacts on the patient's brain remains uncertain for the surgeon during insertion. Therefore we developed a simple method to visualize the electrodes during the procedure. We combine neuronavigation and intraoperative fluoroscopy for parallel visualization of the cortex, electrodes, and the navigation probe. We search our target region with neuronavigation, burr a hole over the optimal entry point and under real time fluoroscopy we slide the strip electrode to the tip of the navigation probe, which was kept over the area of interest. At our institution we inserted 26 strips in 8 patients with this technique and none of them had to be repositioned. There were no complications with this procedure and the prolonged surgery time is acceptable. In compare to previously published electrode placement methods, this method guarantees precise electrode placement in all cerebral regions. In conclusion: intraoperative visualization of the electrodes with fluoroscopy during positioning through a burr hole with combination of neuronavigation gives the neurosurgeon the possibility to control the real position of the electrode over the gyrus during the procedure. Description of similar method has not been published earlier.

Hepatobiliary_1 A057

The role of mild hypothermia in protection against Ischaemia/Reperfusion injury in Bilharzial livers: controlled experimental study

Ezzat Ezzat M1, HELMY Ahmed H2, Hammam Olfat M3, Mahmoud Soheir S4, Ali Mahal M5

1Department of General Surgery, Pathology Tbdoure Bilharz Research Institute, Cairo, Egypt, 2Department of General Surgery, Pathology Tbdoure Bilharz Research Institute, Cairo, Egypt, 3Department of General Surgery, Pathology Tbdoure Bilharz Research Institute, Cairo, Egypt, 4Department of Parasitology Tbdoure Bilharz Research Institute, Cairo, Egypt, 5Department of General Surgery, Pathology Tbdoure Bilharz Research Institute (ahihelmy@hotmail.com)

Background: Ischemia reperfusion injury (IRI) is an important cause of liver damage occurring during hepatic resection for liver tumors, surgery for liver trauma and liver transplantation. This study evaluates the protective effect of mild hypothermia against ischemia reperfusion injury in bilharzial and non bilharzial hamster livers.

Methods: Forty hamsters were divided into four equal groups’ bilharzial nonnormothermic (BN) (36.9 ± 0.3°C), bilharzial hypothermic (BH) (33.3 ± 0.1°C), normal normothermic (NN), normal hypothermic (NH) and two equal control groups of normal and bilharzial hamsters. The four main groups were exposed to 30 minutes of liver ischemia followed by four hours of reperfusion. All animals were sacrificed. Livers sent for histopathological studies, blood samples for aspartate aminotransferase (AST), alanine aminotransferase (ALT) measurements and blood sugar.

Results: Histopathological evaluation confirmed severe hepatic injury in nonnormothermic bilharzial and normal hamsters, while hypothermic bilharzial and normal hamsters only experienced mild to moderate hepatic damage. Markers of hepatocellular injury (ALT and AST) and blood sugar were lower in the hypothermic groups than in the normothermic groups but it was statistically insignificant.

Conclusion: Mild hypothermia significantly reduces hepatic injury in both normal and bilharzial livers in animals subjected to ischemia reperfusion injury. The hepatoprotective effects of mild hypothermia were confirmed by elevated levels of proliferating cell nuclear antigen (PCNA) and vascular endothelial growth factor (VEGF) in hypothermic groups than in normothermic groups.

Cardiovascular, Thoracic_2 A058

Unilateral thoracoscopic approach for mediastinal parathyroid glands excision. A case report

Fama Fausto1, Linard Cecile2, Gioffre’ Florio Maria Antonietta3, Piquard Arnaud4, Saint-Marc Olivier5, Metois David6

1Service de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans, France, 2Service d’Anesthésie et Réanimation, Centre Hospitalier Régional d’Orléans (France), 3Division of General Surgery. Department of Human Pathology, University of Messina (Italy), 4Service de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans (France), 5Service de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans (France), 6Service de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans (France) (famafausto@yahoo.it)

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Introduction: Mediastinal access is required in approximately 2% of patients with hyperparathyroidism. The traditional approach involves thoracotomy and median-sternotomy. Currently, there are few reports about video-assisted thoracoscopic surgery (VATS) were reported in the literature. Accurate preoperative radiological imaging is essential for surgical selection. We report a case of successful left thoracoscopic subtotal thymectomy with excision of two hyperplastic supernumerary parathyroid glands localised in the left and right lobes of thymus.

Case report: A 33-year-old female (dialysed for chronic renal failure since 2001) was admitted for persistent renal hyperparathyroidism with elevated serum parathormone (PTH) level at 1900 ng/l (range 13–54 ng/l). In 2003 she underwent to a subtotal (3 glands) parathyroidectomy for hyperplasia. Preoperative cervical ultrasound scan was negative. A 99mTc-sestamibi scintigram, confirmed by a thoracic contrast-enhanced computed tomography (CT), showed a double anterior-superior mediastinal hyper-density compatible with two intrathymic parathyroid glands. A left thoracoscopic, using three 10mm ports, was established and left hemi-thymectomy with subtotal right hemi-thymectomy was performed. All specimens were sent for frozen section histological examination. Macroscopically, the left specimen included a parathyroid gland measuring 15 mm and weighing 1695 mg, the right included a second gland (measuring 25 mm and weighing 2700 mg). Both histological assessments showed ectopic hyperplasia. A severe hypocalcaemia occurred in the first postoperative day (serum calcium at 1.59 mmol/l). PTH level was normalised. Chest drainage was removed on the 2nd post-operative day. The patient was discharged on the 3rd postoperative day with a Vitamin D3-oral calcium treatment. By 6 months follow-up the patient was normocalcaemic with long-term treatment.

Discussion: VATS causes fewer complications compared with open thoracotomy and median-sternotomy approaches, and therefore a shorter hospitalisation and a better postoperative course. In this report, a unilateral access allowed the care of a bilateral pathology.

Minimally invasive A059

Laparoscopic major liver resections for benign disease

Fama Fausto1, Piquard Arnaud2, Linard Cecile3, Cogliandolo Andrea4, Gioffe Floria Maria Antonietta5, Saint-Marc Olivier6
1 Service de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans, France, 2 Service de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans (France), 3 Service d’Anesthésie et Réanimation, Centre Hospitalier Régional d’Orléans (France), 4 Division of General Surgery, Department of Human Pathology, University of Messina (Italy), 5 Division of General Surgery, Department of Human Pathology, University of Messina (Italy), 6 Division de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans (France) (giammfauro@hydro2.fr)

Introduction: Major liver resections are generally indicated for malignant diseases which usually involve more than 2 segments. Laparoscopic experience for these procedures is still limited, because liver surgery is technically demanding, associated with serious complications and required specialized centres and experienced surgeons. The aim of this study was to describe our surgical experience for right and left laparoscopic hepatectomy for benign disease and to evaluate its feasibility without hand-assistance.

Patients and Methods: From January 2005 to October 2006 we performed a total of 45 laparoscopic liver resections, including 6 laparoscopic major liver resections (4 right and 2 left hepatectomies). Our study group comprised 6 female patients with a mean age of 40 ± 5 years (range 33–46). Liver lesions were located in segments II–III–IV in 2 patients, in segments VI–VII–VIII in 2 patients and in segment V–VII–VIII in 2 patients and histological results, were 3 adenomas, 2 angiomatous, and 1 angiomylipoma. Mean size of the lesion was 6.5 ± 3.2 cm (range 2–10). Five trocars were used for right laparoscopic hepatectomy and 4 in left hepatectomy.

Results: No operative mortality was observed. Only 1 patient (left hepatectomy) was readmitted 15 days later for a biliary fistula and treated by laparoscopic peritoneal lavage and triple clipping. The Pringle manoeuvre was necessary in 4 patients (right hepatectomies). No laparotomic conversion was required. Resection margins were clear in all cases.

Discussion and Conclusion: In our early experience, laparoscopic major liver resections could be performed without hand-assistance, at least for benign disease and by surgeons experienced in laparoscopy, with good results. Nevertheless, further studies with larger series are required in order to draw definitive conclusions, especially for malignant diseases and/or in cirrhetic patients that represent the most relevant group.

Sepsis, Infection, Immunity_2 A060

Disorders of immunoregulatory activity in patients with abdominal aorta aneurysm

Feliga Marcin1, Stankiewicz Wanda2, Witkowski Wojciech3, Dąbrowski Marek4, Maruszynski Marek5
1 Military Institute of the Health Services, Warszaw, Poland, 2 Military Institute of the Health Services and, 3 Military Institute of the Health Services, 4 Military Institute of the Health Services and, 5 Military Institute of the Health Services (infer@poczta.fm)

1 Military Institute of the Health Services and 2Military Institute of Hygiene and Epidemiology, Warsaw, Poland.

Background: Atherosclerosis is one of the most thoroughly investigated pathological processes. It is one of the reason clinically manifested by dilation of artery, forming aneurysms. One of the proved causes of the progression of the process is local inflammation.

Aim: The main goal of our study was to find if systemic immunoregulatory disorders are present in patients with abdominal aorta aneurysm (AAA), what is their kind and range, and if surgical treatment may affect the immunoregulatory function.

Material and methods: The study was performed in the group of 20 patients with AAA (7 women and 13 men) aged 69 to 82, hospitalized in order to undergo surgical treatment. Before and after the surgery the immunological tests comprising the parameters of T lymphocyte immune competence and monocyte immunomnemonic activity (value of LM index) were done in microcultures of mononuclear cell population isolated from the blood of patients. The levels of produced cytokines (II-16, II-1ra, II-6 and II-10) were also estimated in the culture supernatants by ELISA technique. The results were compared between the group of patients with AAA, the group of 15 patients operated for inguinal hernia and the group of 15 healthy individuals.

Results: No deficiency in T lymphocyte response to mitogens (Con A and PHA), T-cell suppressive activity (SAT) and II-10 production were observed in PBMC cultures of the patients before surgical treatment. In contrast to that, immunogenic activity of monocytes (LM value) and production of pro-inflammatory monokines (II-16, II-6) were elevated. After the treatment the values of parameters of T-lymphocyte immune competence did not change but the monocyte immunogenic activity and production of pro-inflammatory monokines decreased significantly.

Conclusions: 1. In the patients with abdominal aorta aneurysm (AAA) the systemic immunological disorders relate to increased monocyte immunomnemonic activity (elevated value of LM index and production of II-16 and II-6). 2. Surgical treatment decreases pro-inflammatory activity of immune system in patients with AAA. 3. The results indicate for the need of introduction of an appropriate immunocorrective treatment in addition to the surgical therapy in patients with abdominal aorta aneurysm.

Oncology_1 A061

Effect of hepatic growth factors on CC-531 adenocarcinoma cancer cells

Garcia-Alonso Ignacio1, Diaz-Sanz Itziaki2, Palomares Teodoro3, San Cristobal Juan4, Martinez-Astorguiuz Traxton5, Marin Hector6
1 Laboratory of Experimental Surgery, University of The Basque Country, Spain, 2 Laboratory of Experimental Surgery, University of The Basque Country, Spain, 3 Laboratory of Experimental Surgery, University of The Basque Country, Spain, 4 Laboratory of Experimental Surgery, University of The Basque Country, Spain, 5 Laboratory of Experimental Surgery, University of The Basque Country, Spain, 6 Laboratory of Experimental Surgery, University of The Basque Country, Spain (ignacio.galavano@ehu.eus)
In previous studies we demonstrated the protumoral stimulus derived from partial hepectectomy on rhabdomyosarcoma rat liver metastases. We have also established that the serum (HRS) obtained from partially hepectomized rats as well as several growth factors (GF) significantly increase the proliferative rate of rhabdomyosarcoma cells. In the present study we analyse the effect of HRS and GF on the rat colo adenocarcinoma CC-351 cell line (CLS, Germany).

**Methods:** The cells were cultured in RPMI enriched with 10% fetal calf serum (FCS). To assess cell proliferation four 96 wells plates were seeded. After 24 h, the medium was removed and new medium with the different treatments was added. Every 24 h the number of cells in one of the plates was measured using a cell proliferation kit 1 (MTT, Roche). As a first stage, the effect of different concentrations of serum from control rats (CRS) and HRS was compared with standard FCS. Then, the effect of different concentrations of GF was assessed.

**Results:** CRS probed to be quite a more powerful stimulus for cell proliferation than FCS, as 5% CRS induced the same results as 10% FCS. When comparing 5% CRS with 5% HRS, no differences were observed. However, at lower concentrations of rat serum (2.5% and 1%) the effect of HRS was stronger (p < 0.05). To analyse the effect of GF a culture with 0.5% of CRS was used. The GF studied significantly increased the proliferative rate of the culture, though at different concentrations. The greatest response was achieved by HGF (7.5 ng/ml) and VEGF (7.5 ng/ml), followed by PDGF (10 ng/ml), EGF (5 & 10 ng/ml) and FGFb (2.5 ng/ml).

**Conclusions:** CC-351 adenocarcinoma cells respond to the mitogenic effect of CRS probed to be quite a more powerful stimulus for cell proliferation than FCS, as 5% CRS induced the same results as 10% FCS. When comparing 5% CRS with 5% HRS, no differences were observed. However, at lower concentrations of rat serum (2.5% and 1%) the effect of HRS was stronger (p < 0.05). To analyse the effect of GF a culture with 0.5% of CRS was used. The GF studied significantly increased the proliferative rate of the culture, though at different concentrations. The greatest response was achieved by HGF (7.5 ng/ml) and VEGF (7.5 ng/ml), followed by PDGF (10 ng/ml), EGF (5 & 10 ng/ml) and FGFb (2.5 ng/ml).

**Transplantation, Organ preservation_2 A062**

Successful transplantation of allogeneic and xenogeneic arterial grafts preserved in pulverized sodium chloride

Gewartowska Magdalena1, Maksymowicz Michał1, Doleżycezk Hubert1, Olszewski WaldemarL4

1 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 2 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 3 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 4 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland

**Methods:** Freshly obtained fragments of rat aorta were fixed in anhydric sodium chloride and stored at 4°C up to 3 months. Cryosections of desalted aortic samples were evaluated on histology using H&E method, trichrome and Gomori staining and immunohistochemical staining for CD 31, factor VIII and actin. Group 1. Syngeneic and allogeneic transplantsations of rat aorta were performed in a LEW to LEW or BN to LEW combination. Specimens were obtained from the amputated human legs were transplanted to LEW rats as in group 1. Histological evaluation was carried out with use of mAbs against rat aortic samples were evaluated on histology using H&E method, trichrome and Gomori staining and immunohistochemical staining for CD 31, factor VIII and actin. Group 1. Syngeneic and allogeneic transplantsations of rat aorta were performed in a LEW to LEW or BN to LEW combination. Specimens were obtained from the amputated human legs were transplanted to LEW rats as in group 1. Histological evaluation was carried out with use of mAbs against rat aorta. The GF studied significantly increased the proliferative rate of the culture, though at different concentrations. The greatest response was achieved by HGF (7.5 ng/ml) and VEGF (7.5 ng/ml), followed by PDGF (10 ng/ml), EGF (5 & 10 ng/ml) and FGFb (2.5 ng/ml).

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**Conclusions:** CC-351 adenocarcinoma cells respond to the mitogenic effect of CRS probed to be quite a more powerful stimulus for cell proliferation than FCS, as 5% CRS induced the same results as 10% FCS. When comparing 5% CRS with 5% HRS, no differences were observed. However, at lower concentrations of rat serum (2.5% and 1%) the effect of HRS was stronger (p < 0.05). To analyse the effect of GF a culture with 0.5% of CRS was used. The GF studied significantly increased the proliferative rate of the culture, though at different concentrations. The greatest response was achieved by HGF (7.5 ng/ml) and VEGF (7.5 ng/ml), followed by PDGF (10 ng/ml), EGF (5 & 10 ng/ml) and FGFb (2.5 ng/ml).

**Oncology_1 A063**

Retrospective analysis of completeness of resection of primary colorectal cancer under the auspices of multidisciplinary care

Goralczyk Adam1, Bhatti Muhammad Iqbal2, Osman Adel3, Allen Derek4, Rathore Munir Ahmad5, Louglhlin Victor6

1 Lagan Valley Hospital, Lisburn, UK, 2 Lagan Valley Hospital, Lisburn, NI UK, 3 Belfast City Hospital, NI UK, 4 Lagan Valley Hospital, Lisburn, NI UK, 5 Lagan Valley Hospital, Lisburn, NI UK

**Introduction:** Multidisciplinary management (MDM) is increasingly being used for the management of digestive (and other cancers). This study aims to evaluate the completeness of resection of primary colorectal cancer (CRC) and the incidence of APR.

**Patients & methods:** The study period is Jan 2002 - Dec 2006 inclusive (5 years). The data were obtained from medical records, pathology and radiology. The patient inclusion criteria were resection of primary CRC (curative or palliative intent) including synchronous or metachronous cancer. Exclusion criteria were recurrent CRC, cancer not operated, cancer not resected (stoma-only, open-close) and endoscopic resection. The parameters for resectional completion were LRM, CRM, TME (rectal), LNH and R-level of resection. The data were analyzed and compared with the literature and the national audit.

**Results:** There were 142 resections in 141 patients (mean = 28 per annum). M:F ratio was 0.97:1 and median age was 71years. There were 86 colonic (60.5%) and 56 (39.5%) rectal cancers. There were 70 (49.3%) anterior resections. Eighty eight percent of resections were elective (OR = 2.2 p = 0.003 compared to the national audit). 17.6% had metastasis at presentation. Adenocarcinoma NOS constituted 94% of all histology results. Median pathological resection margin (CRM) was 7.5mm and the CRM involvement was 12.7% for all CRC and 16% for rectal cancers. Median node harvest was 12 (mean = 11 p = 0.08). There was no significant LNH-LNI correlation. There were 11 (14%) APRs compared to 70 (86%) sphincter- saving operations from a total of 83 rectal resections (p = 0.8 compared to the national audit). Two patients had panproctocolectomy and ileostomy. TME was complete in 35%, incomplete in 11% and missing data in 54%. Eighty four percent of resections were R0. The 30-day morality was 4.3%. Survival figures for stages I-III CRC revealed 3-yr recurrence-free survival of 82% (all-stage = 67%). With the reported figures both the audits were mutually consistent.

**Conclusion:** With a unified multidisciplinary protocol the completeness of resection of all-site CRC and rectal cancer was consistently high. TME (and PME) assessment requires inter-specialty discussion between surgeons, radiologists and pathologists at an MDTM forum.

**Orthopedic_2 A064**

Hybrid external fixation for neglected fractures of the distal radius – results after one

Grafa Pawel1, Tomdzie Wieslaw2

1 Department of Trauma, Burn and Plastic Surgery. K. Mariiskinszki Medical University Poznan, Poland, 2same (paw Paging@inter.pl)

External fixation is a well established procedure for the treatment of unstable fractures of the distal radius but its use is beset with complications. A plethora of theoretical and experimental data suggests nonbridging fixators to be superior
for this setting. A new concept for the use of hybrid external fixation seemed reasonable and was applied for this study. We report on first 14 cases of unstable fractures of the distal radius with a one year follow up and describe the operative technique (36 cases at one year) evaluation of results revealed good and very good anatomic results (Lidstrom system) and two satisfactory (cases with algodystrophy), eight very good and four good functional outcomes (Gartland-Werley system). The patient’s acceptance of the device was high. We conclude that hybrid external fixation of neglected distal radial fractures results in good outcomes if care is taken to prevent overdistraction of bone fragments.

Orthopedic 2 A065
Open reconstruction of articular fractures of the calcaneus using a large femoral distractor
Grądzki Tomasz1, Twardowski Wojciech2
1 Department of Trauma, Burns and Plastic Surgery, K.Marcinkowski Medical University Poznań, Poland, 2 same (targis@tlen.pl)
Operative treatment of comminuted fractures of the calcaneus is a technically demanding procedure, even if good preoperative planning has been done and patient selection has been appropriate. We present the anatomic results of operative reconstruction of 18 consecutive cases of calcaneal fractures but the core of this report is formed on evaluation of the effectiveness of a large femoral distractor in this setting. Operative management of our patient group resulted in good and very good short term anatomic outcome (six months), with shorter operative time and easier reduction of calcaneal fragments as compared with patients treated previously without the distractor. Additionally, with use of the distractor there are fewer assistants needed during the procedure.

Extremities A066
Evidence Based Physiotherapy in postmastectomy lymphoedema
Grądalski Tomasz1, Ochałek Katarzyna2
1 St. Lazar Hospice, Kraków, Poland, 2 St. Lazar Hospice, Kraków, Poland (tomas@tlen.pl)
Physiotherapy is a method of choice to reduce the lymphoedema volume. Complex Physical Therapy (CPT) usually consists of the manual lymphatic drainage, pneumatic massage, multi-layered compression bandaging and exercises. The comparison of the effectiveness of the CPT is difficult because of differences in the management techniques and methods of assessment among the therapists. There is a need to find the treatment option as good as CPT. In the previous unpublished study we confirmed the effectiveness of CPT in term of the decrease the lymphoedema volume, improvement of the limb movement range, hand gripping force, decrease physical complaints and improvement on the health-related quality of life. We observed the trend of enhancement in the health-related quality of life. We observed the trend of enhancement in the health-related quality of life. We observed the trend of enhancement in the health-related quality of life. We observed the trend of enhancement in the health-related quality of life. The limited CPT may be considered as a primary treatment option in reducing postmastectomy limb lymphoedema.
Cardiovascular, Thoracic,2 A069

Lung Metastectomy for Colorectal Cancer—12 year experience

Harris Andrew1, Naidu Balu2, Rajesh Pala3
1 Regional Department of Thoracic Surgery, Heart of England NHS Foundation Trust, UK, 2 Regional Department of Thoracic Surgery, Heart of England NHS Foundation Trust, 3 Regional Department of Thoracic Surgery, Heart of England NHS Foundation Trust (a.harris@doctors.org.uk)

Objectives: NICE guidelines suggest that pulmonary metastatectomy may prolong life in highly selected patients who develop colorectal pulmonary metastasis. However there has been recent concern as to the validity of this guideline. Our aim was to evaluate our current practice.

Method: 58 patients who underwent pulmonary metastatectomy between 1994—2007 were studied. Of these 90% underwent complete surgical resection. 12 patients underwent re-operation and 19 liver resection Analysis was performed by Kaplan-Meier survival and Cox multi- variate regression analysis.

Results: Mean age was 66 years. The mean disease free interval was 34 months (median 29, CI 6 to 81). Mean follow-up was 20 months (median 17, CI 1 to 49).

The actuarial survival after metastectomy was significantly higher at 5 years for those who underwent complete versus incomplete resection. Other significant factors influencing survival were disease free interval over 12 months and over 4 lesions.

Conclusion: Surgery appears worthwhile in the group of patients with favorable clinical markers but surgery in patients with unfavorable parameters is unclear. In this group a randomized clinical trial is warranted.

Sepsis, Infection, Immunity,1 A071

Coagulation parameters as risk factors of vein thrombosis in patients after splenectomy carried out due to oncologic and non-oncologic indications

Heitzman Marek1, Wystrachowski Wojciech2, Zagalski Krzysztof3, Buldziński Grzegorz4, Cierpka Lech5
1 Department of General, Vascular and Transplant Surgery, Silesian Medical University, Katowice, Poland, 2 Department of General, Vascular and Transplant Surgery, Silesian Medical University, Katowice, Poland, 3 Department of General, Vascular and Transplant Surgery, Silesian Medical University, Katowice, Poland, 4 Department of General, Vascular and Transplant Surgery, Silesian Medical University, Katowice, Poland, 5 Department of General, Vascular and Transplant Surgery, Silesian Medical University, Katowice, Poland (ipermarco@gmx.co.uk)

Background: The aim of study was a prospective analysis and comparison of blood coagulation profile and erythrocyte aggregation among patients after splenectomy carried out due to hematologic (oncologic and non-oncologic) indications between June 2005 and March 2007. We tried to find out whether the changes in blood profile may increase the risk of vein thrombosis.

Materials and Methods: Blood samples were studied in 30 patients before operations and on 3rd and 7th day after removal of the spleen. In 6 (20%) patients the direct indications due to spleenectomy were lymphoproliferative diseases and in 24 (80%) non-oncologic disorders (thrombocytopenia or hematolytic anemia). Coagulation parameters were measured by standard tests. Erythrocyte aggregation was measured by using fully automatic erythrocyte aggregometer (Myrenne GmbH Germany) and shown as MEA (mean extent of aggregation). The blood sample was submitted for 10 or 5 to a shear rate 600s−1, after shear stopped the MEA was measured and calculated. After high shearing the MEA was measured during a low-shear rate of 3s−1.

Results: All patients had a significant increase in number of platelets after splenectomy. The platelet count was higher on day 7th than on day 3rd. Most of the patients had a significant increase in C-reactive protein (CRP) level after splenectomy. On 3rd day the CRP level was significantly higher in group of patients with lymphoproliferative diseases. On 3rd and 7th day after removal of the spleen D-dimers level was significantly higher in patients with lymphomas comparing to non-oncologic group. Moreover patients with lymphoproliferative diseases had lower plasma levels of C protein in 3rd as well as S protein levels on 3rd and 7th day after splenectomy. A significant increase of erythrocyte aggregation was observed on 3rd and 7th day after splenectomy in all patients however it was higher in oncologic patients.
Wound healing A072

Estrogen-induced inhibition of smooth muscle activity is non-genomic and cell membrane dependent

Hogan AM1, Kennelly R2, Gallagher T3, Baird AW4, Winter DC5

1 Institute for Clinical Outcomes in Research and Education, St. Vincent’s University Hospital, Elm Park, Dublin 4, Ireland. 2 College of Life Sciences, University College Dublin, Belfield, Dublin 4, Ireland. 3 Institute for Clinical Outcomes in Research and Education, St. Vincent’s University Hospital, Elm Park, Dublin 4, Ireland. 4 College of Life Sciences, University College Dublin, Belfield, Dublin 4, Ireland. 5 Institute for Clinical Outcomes in Research and Education, St. Vincent’s University Hospital, Elm Park, Dublin 4, Ireland.

Introduction: Classical effects of estrogen involve activation of target genes after binding nuclear receptors. Estrogenic effects too rapid for DNA transcription (non-genomic) are now known to occur. However, to date, they have been examined at cell level only. The effect of estrogen on colon motility is unknown despite the increased prevalence of gastrointestinal symptoms in pregnant and premenopausal women.

Methods: Histologically normal colon was obtained from the proximal resection margin of colorectal carcinoma specimens. Circular smooth muscle strips were microdissected and suspended under 1g of tension in organ baths containing oxygenated Kreb’s solution at 37°C. After an equilibration period, they were exposed to 17β estradiol (28; n = 28) or bovine serum albumin (BSA) conjugated estrogen (8; too large to cross cell membrane). Fulvestrant, an estrogen receptor antagonist was added to some baths (n = 8). The cholinergic agonist carbachol (CCH) was added in increasing concentrations. Contractile activity was recorded isometrically. Institutional research board approval was granted.

Results: Estrogen inhibited smooth muscle contractility (mean difference 14%; n = 28; p = 0.004; CI 95%). In keeping with a non-genomic, rapid onset steroid action, the effect was within fifteen minutes and reversible. It was observed in both 17β estradiol and BSA conjugated estrogen. The rapid, non-genomic cell membrane receptor-mediated smooth muscle effects were inhibited by fulvestrant (54% versus 40%; n = 8; p = 0.045; CI 95%).

Conclusion: Estrogen decreases contractility in human colonic smooth muscle in a non-genomic mechanism on a cell membrane receptor that has yet to be fully clarified.

Minimally invasive A074

Pathological findings in a rat surgical model of reflux-induced oesophageal

Ingravallo Giuseppe1, Dall’Olmo Luigi2, Segat Daniela3, Rugge Massimo3, Zaninotto Giovanni3, Ancona Ermanno6


Introduction: Barrett’s esophageal adenocarcinoma (EA) has shown the highest increase in the incidence of all carcinomas in western countries. This justifies the efforts toward animal models of duodeno-gastro-oesophageal reflux (DGER), able to reproduce EA. The group of Hattori described a rat surgical model of DGER-induced EA (Kumagai et al. 2001). The present study reproduced this rat model.

Methods: 40 rats were divided into 5 groups of 8 rats treated with a side-by-side esophagogastric-jejunal anastomosis. According to the period of sacrifice, we defined 3 groups of animals: Group A < 10 weeks p.o. (n = 22); Group B 10–30 weeks p.o. (n = 22) and Group C > 30 weeks p.o. (n = 20). Pathological results were classified as inflammatory-ulcerative lesions, regenerative-hyperplastic lesions (pseudo-tumours), intestinal metaplastic lesions (human Barrett-like), dysplastic lesions and tumours.

Results: Group A: 68% inflammatory-ulcerative lesions, 45% pseudo-tumours, 9% metastatic lesions and neither dysplastic nor neoplastic lesions. Group B: 64% inflammatory-ulcerative lesions, 56% pseudo-tumours, 41% metaplastic lesions and 45% neoplastic lesions: 30% well differentiated mucinous tumours at the anastomotic site and 9% adenosquamous carcinomas. Group C: 80% inflammatory-ulcerative lesions, 50% pseudo-tumours, 60%...
metaplastic lesions and 45% neoplastic lesions: 35% well differentiated mucinous tumours at the anastomotic site and 10% adenosquamous carcinomas.

Discussion: no DGER can induce in rats a “Barrett’s like” intestinal metaplasia. Multi-layered epithelium (MLE), islands of mucinous-columnar cells sharing the pattern of mucin and cytokeratin expression of Barrett’s esophagus, constitutes an evidence of pre-intestinal oesophageal metaplasia. As for carcinomas, we found 4 adenocarcinomas and 15 well differentiated mucinous tumours, defined carcinomas by Hattori. In our opinion, however, the carcinomatous nature of these mucinous tumours is still questionable. In fact, they can be consider reactive lesions or pseudo-tumours. This experimental model has never produced Barrett’s adenocarcinomas, to our knowledge, but squamous or adenocarcinomas (never intestinal-type) carcinomas. Therefore, those well differentiated mucinous expansive masses could be better defined “oesophagitis cystica profunda” (Busquets et al2006). Moreover, we could never find lesions that can be consider analogue to human dysplasia.

BJS A075
Importance of omega-3/omega-6 ratio in the hepatoprotective effect of high-fat nutrition on a warm ischemia/reperfusion injury in rats
Iwasaki Wataru1, Kume Makoto2, Kudo Kazuhiro3, Yoshioka Masato4, Uchinami Hiroshi5, Yamamoto Yuzo6
1 Department of Gastroenterological Surgery, Akita University School of Medicine, Akita, Japan, 2 Department of Gastroenterological Surgery, Akita University School of Medicine, Akita, Japan, 3 Department of Gastroenterological Surgery, Akita University School of Medicine, Akita, Japan, 4 Department of Gastroenterological Surgery, Akita University School of Medicine, Akita, Japan, 5 Department of Gastroenterological Surgery, Akita University School of Medicine, Akita, Japan, 6 Department of Gastroenterological Surgery, Akita University School of Medicine, Akita, Japan
(wataru@pop21.odn.ne.jp)

Introduction: We have reported that pre-operative supplementation of omega-3 rich polyunsaturated fatty acid (PUFA) alleviated a warm ischemia-reperfusion injury of rat liver. In this study, we evaluated whether this beneficial effect was arisen from the energy supplementation as high-fat nutrition or from the increase of omega-3 PUFA itself.

Methods: Male Wistar rats were divided into three groups and were supplemented with different type of PUFA oil once a day besides normal chow for 7 days. Group A: Omega-3 rich PUFA oil (0.54 g/day, omega-3:omega-6 = 1:1). Group B: omega-6 rich PUFA oil (0.54 g/day, omega-3:omega-6 = 1:7). Group C: water (0.6 ml/day, no fat). After these treatments, a 25-minute hepatic warm ischemia was produced by Pringle’s maneuver. Liver tissue and blood samples were collected, before ischemia and at 120 minutes post reperfusion. Concentrations of PUFA in liver tissues (µg/g wet tissue) were quantified. Liver injury was evaluated by serum ALT, AST. Inflammatory response was evaluated by serum TNF-alpha (pg/ml). A p-value less than 0.05 was considered statistically significant by analysis of variance, (mean±SD, n = 8 in each group, p < 0.05).

Results: Omega-3/omega-6 ratio in group A was significantly higher than those in groups B and C (A, 0.53 ± 0.07 versus B, 0.23 ± 0.01, C, 0.33 ± 0.05). At 120 minutes post reperfusion, ALT and TNF-alpha were significantly lower in group A than groups B and C (ALT: A, 1555 ± 621 versus B, 2321 ± 679 2, C, 2320.9 ± 630.6; TNF-alpha: A, 32.04 ± 10.8 versus B, 59.39 ± 19.37, C, 49.48 ± 14.43).

Conclusions: Supplementation of omega-3 rich PUFA ameliorated hepatic I/R injury in rats with increasing omega-3/omega-6 ratio and suppressing inflammatory response. However, as well as water, supplementation of omega-6 rich PUFA did not show any benefits. This indicates that omega-3 rich PUFA supplementation give rise to its beneficial results by increasing the ratio of omega-3/omega-6, but not by increasing the energy as high-fat nutrition.

Hepatobiliary_2 A076
Early complications in different methods of iatrogenic biliary injuries surgical
Jablonska Beata1, Lampe Pawel2, Olakowski Marek3, Lekstan Andrezej4, Gorka Zygmunt5
1 Department Of Gastrointestinal Surgery, Slezaen Medical University, Katowice, Poland, 2 Department Of Gastrointestinal Surgery, Silesian Medical University, Katowice, Poland, 3 Department Of Gastrointestinal Surgery, Silesian Medical University, Katowice, Poland, 4 Department Of Gastrointestinal Surgery, Silesian Medical University, Katowice, Poland, 5 Department Of Gastrointestinal Surgery, Silesian Medical University, Katowice, Poland, (jablonka@poczta.onet.pl)

Treatment of the iatrogenic biliary injuries is the important problem in the gastrointestinal surgery. The aim of paper was analysis of early complications following different methods of iatrogenic biliary injuries reconstruction. Between January 1990 and March 2005, 138 patients – 37 (26.6%) men and 101 (73.2%) women with iatrogenic biliary injuries were operated in the Department of Gastrointestinal Surgery. The mean age was 52; 9 ± 15.02 (18–85) years. The most frequently iatrogenic biliary injuries were caused by open and laparoscopic cholecystectomy. The clinical symptoms were following: abdominal pain, jaundice, cholangitis, pruritus, nausea, vomitus. The laboratory investigations and radiological examinations were performed before surgical procedure. The level of injury was classified according to Bismuth. The following types of biliary injuries were noted: I – u 78 (56,5%) patients, II – u 34 (24,6%) patients, III – u 14 (10,1%) patients, IV– u 6 (4,3%) patients, V– u 6 (4,3%) patients. The following reconstruction methods were performed: Roux-Y hepaticeojunostomosis – in 49 patients (group 1), end-to-end ductal anastomosis– u 45 patients (group 2), jejunal interposition hepaticocholedochostomy – in 27 patients (group 3), bile duct plastic reconstruction – u 6 patients (group 4), choledochoduodenostomy – in 2 patients (group 5), others – in 8 patients (group 6). The mean duration of hospitalization was 31 (8–225) days. The mean duration of operation was 4,5 (2–10) hours. Early complications were observed in 22 (16%) patients (in 12 patients – in group 1, in 3 patients – in group 2, in 2 patients – in group 3, in 4 patients – in group 4, in 1 patient – in group 6). The following early complications were noted: bile collection (11), intraabdominal abscess (4), wound infection (13), peritonitis (2), cholangitis (2), evertation (1), pneumonia (7), acute circulatory insufficiyency (3.7 (%). Early reoperations were performed: 2 – due to biliary-enteric anastomosis dehiscence, 1 – due to evertation, 4 – due to bile collection or intraabdominal abscess.3 (2%) hospital deaths were noted: 1 – due to acute circulatory insufficiency, 1 – due to liver necrosis and acute respiratory and circulatory insufficieny, 1 – due to biliary-enteric anastomosis dehiscence, bile collection, peritonitis and acute circulatory and respiratory insufficieny. Surgical biliary injuries reconstructions performed in experienced surgical centres are safe surgical procedures with low risk of complications.

Unusual observations, strange ideas A077
Role of Power Assisted Liposuction in correction of Gynaecomastia
Jose Rajive Mathew1, Thomas Sunil2
1 Dept of Plastic Surgery Selly Oak Hospital Birmingham, UK, 2 Dept of Plastic Surgery Selly Oak Hospital Birmingham, UK (rajivmatthew@yahoo.com)

The surgical techniques for gynaecomastia have evolved with advances in liposuction techniques. Our technique for gynaecomastia correction includes an initial liposuction procedure in patients with fatty gynaecomastia and conversion to open procedure if necessary. Those with glandular type gynaecomastia are offered an excisional procedure at the outset with or without liposuction. A five year retrospective and four month prospective study was conducted to compare the outcomes of various surgical procedures for gynaecomastia. A total of 135 breasts were operated on in 74 patients. The patients were divided into three groups. Those who had liposuction alone, liposuction with an excisional...
The effects of abdominal compartment syndrome on respiratory and urinary systems functions

Kafali Ertugrul1, Möllahüseyinoglu Hasan2, Er Cemil3, Sahin Mustafa4, Uslu Yasarg
1Selçuk University, Meram Medical Faculty, Emergency Service, Konya, Turkey, 2Selçuk University, Meram Medical Faculty, Emergency Service, Konya, Turkey, 3Meram Education and Training Hospital, Konya Turkey, 4Selçuk University Meram Medical Faculty, General Surgery, Konya Turkey, 5Meram Education and Training Hospital, Konya Turkey (sahinmu@hotmail.com)

Aim: Our aim is to investigate the relation between the increase of abdominal pressure and pulmonary and urinary system functions.

Materials and Methods: 61 patients admitted to Selçuk University Meram Medical Faculty Emergency Service with diagnosis of acute abdomen were included in this study. The diagnosis were; 25 cases ileus, 13 cases acute pancreatitis, 11 cases mesentery ischemia and 12 cases with intestinal perforations. In all cases urine bladder pressures were recorded as the reflection of abdominal pressure. Meanwhile pH, PaCO2, PaO2, SGPT, SGOT, urea and creatinin levels were measured in venous and arterial blood samples. The procedure was repeated consequently 24, 48 and 72 hours. The correlation between abdominal pressure increase and these parameters were evaluated.

Findings: Increase in abdominal pressure has negative effects on renal, pulmonary and liver organ systems. Renal function effected by 10 cm H2O pressure and was obviously affected after 20 cm H2O pressure. The increase of abdominal pressure causes respiratory aholosus; at initial time and hypoxia, pressure and was obviously affected after 20 cm H2O pressure. The increase in abdominal pressure has negative effects on renal, pulmonary and liver organ systems. Renal function effected by 10 cm H2O pressure and was obviously affected after 20 cm H2O pressure. The increase of abdominal pressure causes respiratory aholosus; at initial time and hypoxia, pressure and was obviously affected after 20 cm H2O pressure. The increase of abdominal pressure causes respiratory aholosus; at initial time and hypoxia, pressure and was obviously affected after 20 cm H2O pressure. The increase of abdominal pressure causes respiratory aholosus; at initial time and hypoxia, pressure and was obviously affected after 20 cm H2O pressure.

Results: Urine bladder pressure is reflecting abdominal pressure correctly. The increase of abdominal pressure caused meaningful increase in urea, creatinin, SGOT, SGPT, and PaCO2 levels and decrease in PaO2 and pH levels.

Kidney transplantation from HCV-positive cadaveric donors in HCV-positive recipients – experience of one centre

Kasparyk Tomasz1, Kwiatkowski Artur2, Wszola Michal3, Domagała Piotr4, Durlik Magdalena5, Chmura Andrzej6
1Department of General and Transplantation Surgery, Medical University of Warsaw, 2Department of General and Transplantation Surgery, Medical University of Warsaw, 3Department of General and Transplantation Surgery, Medical University of Warsaw, 4Department of Transplantology and Nephrology, Medical University of Warsaw, 5Department of General and Transplantation Surgery, Medical University of Warsaw (pdomaga@mp.pl)

Body: Due to the shortage of organs for transplantation procurement of kidneys from marginal donors is inevitable. Not infrequently these donors are infected with hepatitis C virus (HCV). The aim of this study was to determine the effect of transplanting kidneys from anti-HCV positive donors to anti-HCV positive recipients.

Patients and methods: 765 KTx performed between 1994 till 2006 had been included in the study, in which 259 kidneys recipients were anti-HCV positive. 60 of them received kidney from anti-HCV positive donor (HCV+ /HCV+ group). The remaining patients received kidneys from seronegative donors (HCV-/HCV+ group). Control group consisted of 506 seronegative recipients whose received kidneys from seronegative donors (HCV-/HCV− group). All kidneys from anti-HCV positive donors prior to KTx were preserved with Machine Perfusion. We investigated recipientsennifer function [ALT, AST, ALP, bilirubin], graft survival, patient survival.

Results: 1. no statistically significant differences between the groups in biochemistry results (LFTs, creatinine at 5 years) 2. no statistically significant differences between the groups in patient survival, graft survival or number of patients returning to dialysis.

Conclusion: Transplantation of kidneys from HCV-positive donors in HCV-positive recipients does not influence long-term liver functions has no influence on long-term renal allograft function enhances the availability of transplantation as means of end-stage renal disease treatment.

Characterization of the endothelin-induced coronary vasoconstrictor responses in the normal and regionally ischemic myocardium

Katalin Turi1, Balázs Sax2, Andrea Nagy1, Máté Kerekes4, Violetta Kekesi3
1Semmelweis University, Cardiology Center, Budapest, Hungary, 2Semmelweis University, Cardiology Center, Budapest, Hungary, 3Semmelweis University, Cardiology Center, Budapest, Hungary, 4Semmelweis University, Cardiology Center, Budapest, Hungary (turi@tak83@gmail.com)

Myocardial endothelin-1 (ET-1) production is known to be significantly elevated in certain cardiac diseases like myocardial ischemia and heart failure. Our aim was to characterize the vasoconstrctor effect of ET-1 on the intact (series I, n = 15) and ischemic (series II, n = 9) coronary bed. In the first series of experiments increasing doses of ET-1 (0·01–1·0 nM) were administered into the left anterior descending (LAD) coronary artery of the in situ dog heart. Coronary blood flow (CBF) was measured by an electromagnetic flow probe (total CBF). In the series II the same ET-1 doses were administered intracoronarily to the regionally ischemic heart prepared by mid-part occlusion of the LAD artery. Residual CBF (measurable proximal to the occlusion), flow-dependent epicardial heat emission (quantitative thermographic method) and retrograde coronary pressure (intraluminal pressure in the ischemic vasculature) was measured in these experiments. According to our results, ET-1 significantly reduced both total and residual CBF in a dose-dependent manner. The maximum reduction of CBF was −91 ± 3% and −83 ± 9% (mean±SEM), respectively. No significant change could be observed in myocardial contractility, arterial pressure and heart rate. At the highest dose of ET-1 a significant augmentation of retrograde coronary pressure was observed. The flow-dependent heat emission significantly decreased both in the LAD-supplied ischemic and non-ischemic area (ATmax: −0·14 ± 0·04 and −0·17 ± 0·04°C). However, the extent of myocardial cooling did not follow the drastic drop in CBF. In conclusion, ET-1 evokes vasostriction to a similar extent both in the normal and ischemic myocardium. The discrepancies between the degree of myocardial cooling and volume-flow reduction—since they occurred at constant or even at elevated retrograde coronary pressure—may suggest the significant participation of the small arteries of the mid-myocardial and endocardial layers in the ET-1 induced vasoconstriction at least in the ischemic region of the heart.
Unusual observations, strange ideas A081

Urinary Tract Infections (UTI’s) in the Early Period After Liver Transplantation – etiological agents and their susceptibility

Kawecki Dariusz1, Chmura Andrzej2, Malkowski Piotr3, Kot Katarzyna4, Swoboda-Kopec Ewa2, Luczak Mirosław6
1 Dept. of Medical Microbiology Medical University of Warsaw, Poland, 2 Dept. of General Surgery and Transplantation Medical University of Warsaw, 3 Dept. of Surgical and Transplantation Nursing Medical University of Warsaw, 4 Dept. of Medical Microbiology Medical University of Warsaw, 5 Dept. of Medical Microbiology Medical University of Warsaw, 6 Dept. of Medical Microbiology Medical University of Warsaw (dkawecki@o2.pl)

Urinary Tract Infection (UTI) is one of the common infection in liver transplantation (LT).

Material and methods: The study covered 83 adult patients undergoing liver transplantation (piggy back technique) between September 2001 and October 2004. All the patients were followed prospectively for urinary tract infections from the LT date and during the first four weeks after surgery. Samples of urine were investigated for bacteriological cultures. The microorganisms were cultured and identified in accordance with standard bacteriological procedures. Susceptibility testing was carried out using National Committee for Clinical Laboratory Standards (NCCLS) procedures.

Results: Urine specimens were examined in 53 pre-operative recipients (61.9%) and in 64 patients (77.1%) during the first month after transplantation. Of the 182 samples investigated, 73 were positive. Bacterial strains were cultured from 17 recipients before LT and from 28 patients after surgery. Among the bacterial strains isolated in early period after LT (n = 222), the most common were Gram-negative rods (n = 46 (63%) isolates), the Enterobacteriaceae family (n = 44 (95.6%) isolates) among them n = 12 (27.3%) of the Gram-negative rods were Extended-Spectrum Beta-Lactamases ESBL(+) strains. Gram-positive bacteria were cultured 14% (n = 25) and fungal strains 3% (n = 2).

Conclusions: 1. The predominance of Gram-negative rods was caused by ESBL(+) and use of broad spectrum antimicrobial prophylaxis. 2. The increased proportion of isolation Multi-Drug-Resistant (MDR) bacteria to antimicrobial agents may be due to the frequent use of these agents for prophylaxis of bacterial infections in liver transplant patients. 3. These (MDR) bacterial strains caused severe UTI’s in patients after LT.

Sepsis, Infection, Immunity A082

Bacterial infections in the early posttransplant period after liver transplantation–etiological agents and their susceptibility

Kawecki Dariusz1, Kot Katarzyna2, Sawicka-Grzelak Anna3, Malkowski Piotr4, Chmura Andrzej5, Luczak Mirosław6
1 Dept. of Medical Microbiology Medical University of Warsaw, Poland, 2 Dept. of Medical Microbiology Medical University of Warsaw, 3 Dept. of Medical Microbiology Medical University of Warsaw, 4 Dept. of General Surgery and Transplantation Nursing, 5 Dept. of General Surgery and Transplantation Medical University of Warsaw, 6 Dept. of Medical Microbiology Medical University of Warsaw (dkawecki@o2.pl)

An analysis of bacterial infections in the early posttransplant period after liver transplantation in adults.

Material and methods: The study covered 83 adult patients undergoing liver transplantation from 2001 to 2004. All the patients were followed prospectively for infections from the LT date and during the first four weeks after surgery. Samples of clinical materials (blood, urine, wound swabs, stool and other) were investigated. The microorganisms were cultured and identified in accordance with standard bacteriological procedures. Susceptibility testing was carried out using (NCCLS) procedures. The statistical analysis was made by chi-square test.

Results: 913 clinical samples taken from liver recipients were investigated in microbiological laboratory. In total 469 strains were cultured. Among the bacterial strains, the most common were Gram-positive bacteria n = 331 strains (70.6%), Gram-negative bacteria n = 133 strains (28.4%) and yeast like fungi n = 5 strains (1%). In the early posttransplant period the common isolates were taken from Surgical Site Area n = 284 (60%) with predomination of Gram(+) strains n = 222 (78%), Gram(-) strains n = 61 (21.5%). From blood n = 99 strains (21.1%) were cultured: Gram(+) n = 75 (75.8%) and Gram(-) n = 22 (22.2%). Urine samples n = 73 (15.6%): among them Gram(−) n = 46 (63%), Gram(+)= 25 (34%), fungi n = 2 (3%). Samples taken from respiratory tract n = 13 (2.8%) strains were cultured: Gram(+) n = 9 (69%), Gram(-) n = 4 (31%). From 34 stool samples Clostridium difficile toxins were positive in 63%, only in 16,7% of samples C. difficile strains were detected, 30% were negative.

We analyzed the susceptibility of cultured strains to antibacterial agents. In total n = 10 strains of (MRSA), n = 138 of (MRCNS) staphylococci were detected, 86% of enterococci were (HLAB) strains and from Enterobacteriaceae family 12.5% (ESBL) rods were detected.

Conclusions: The presence of (MDR) bacterial strains after liver transplantation such as: methicillin-resistant staphylococci (MRSA) – 52.6%, (MRCNS) – 81.7%, enterococci (HLAB) – 86%, enteric Gram(−) bacteria (ESBL) – 12.5% required professional infection controls.

Gastrointestinal A083

Melittin enhances site specific drug delivery in the gastrointestinal tract

Kennelly Rory1, Hogan Aiding2, Bizk Victoria3, Baird Alan4, Winter Desmond C5
1 Institute For Clinical Outcomes In Research And Education, 2 Institute for clinical outcomes in research and education, 3 University College Dublin, 4 University College Dublin, 5 Institute for clinical outcomes in research and education (kennellyrory@yahoo.ie)

The mainstay of management of inflammatory bowel disease is non specific anti inflammatory therapy such as mesalamine. These drugs are formulated for colonic release however are poorly absorbed limiting their effect to the surface epithelium. Melittin, a peptide derived from honey bee venom has tight junction (T.J.) modulation properties. Melittin may have the ability to locally ameliorate absorption of these drugs, potentiating their effect. Human colon was sourced from the clear margins of colon cancer resection specimens. The mucosa was microdissected from the underlying muscle and suspended in permeability chambers with physiological solution bathing both apical and basolateral surfaces. Permeability was measured by calculation of trans-epithelial electrical resistance (TEER) and macromolecular transfer via radiolabelled [(14-C)-mannitol and fluorescein labelled dextran (FD4) flux coefficients. Tissue viability was investigated by secretagogue challenge at the end of each experiment and by lactate dehydrogenase assay at varying time points. Epithelial morphology was examined with haematoxylin/eosin and alcian blue staining. Confocal microscopy was used for direct visualisation of T.J. protein distribution. Melittin was added to the apical side mimicking oral/luminal delivery. Institution review board approval was obtained. A 50% drop in TEER occurred (< 5mins), concentration dependent (EC50 = 44 (95,6%) isolates among them n = 12 (27,3%) of the Gram-negative rods were detected. 86% of enterococci were (HLAB) strains and from Enterobacteriaceae family 12,5% (ESBL) rods were detected.
Hepatobiliary_2 A084

Analysis of the role of urinary trypsin inhibitor (UTI) in the patients with hepatocellular carcinoma

Kikuchi Isao1, Uchinami Hiroshi2, Nakajima Akio3, Yamamoto Yuzo4
1 Department of Gastroenterological Surgery, Akita University School of Medicine, Akita, Japan, 2 Department of Gastroenterological Surgery, Akita University School of Medicine, Akita, Japan, 3 Department of Surgery, Division of Hepato-pancreato-biliary surgery and Transplantation Kyoto University Graduate School of Medicine, Kyoto, Japan, 4 Department of Gastroenterological Surgery, Akita University School of Medicine, Akita, Japan (isaok@pop17.odn.ne.jp)

Background and aim: UTI, an endogenous protease inhibitor, has been considered as an important molecule to suppress the inflammatory response during postoperative course. Since UTI is produced mainly in the liver, it is likely that major hepatectomy decreases the UTI production excessively, resulting in increasing the rate of inflammatory complication. This study aimed to clarify whether UTI has protective effect on inflammatory response by analyzing the correlation between perioperative kinetics of plasma UTI and clinical factors including liver volume in the patients with hepatocellular carcinoma (HCC) undergoing hepatectomy.

Methods: Twenty-five patients with HCC who underwent segmentectomy or larger hepatectomies were enrolled in this study. Plasma UTI was measured before operation, on POD1 and POD7. ∆UTI was defined as the increase of value from preoperative to POD1 level of UTI. Liver volume and tumor volume were measured by CT. UTI expression in the liver was examined by immunohistochemistry. The correlation between ∆UTI and clinical factors were assessed using Pearson’s correlation coefficient. Results are expressed as mean ± SD.

Results: Resected liver, tumor and non-tumor volume were ranged from 11.1 ml to 1980.8 ml, 7.7 ml to 1216.8 ml, and 71.3 ml to 744.0 ml, respectively. Plasma UTI level decreased significantly on POD1 (pre-op: 9.8 ± 3.9, POD1: 7.2 ± 3.0 IU/ml, p < 0.01) and recovered immediately on POD7. The resected liver volume (r = -0.694, p < 0.001) and tumor volume (r = -0.700, p < 0.001) were inversely-correlated with ∆UTI, while non-tumor volume was not. There are no correlations between ∆UTI and other clinical factors except the increase in C-reactive protein on POD1. Immunohistochemistry revealed UTI was expressed stronger in cancer cell than hepatocyte in 8 of 13 HCC samples.

Conclusion: Our study suggested that decrease in UTI level was caused by the resection of tumor and did not lead to inflammatory complication. Further investigation of UTI production in cancer cells will give the hints to uncover the UTI potential.

Hepatobiliary_2 A085

Cholestasis enhances liver ischemia reperfusion induced coagulation activation

Kloock Jaap1, Levi Marcel2, Heger Michal3, Gouma Dirk4, van Gulik Thomas5
1 Department of Surgery, University of Amsterdam, Amsterdam, The Netherlands, 2 Department of Internal medicine, 3 Department of Surgery, 4 Department of Surgery, 5 Department of Surgery (jaap.kloek@amc.uva.nl)

Background Data: Cholestasis is associated with increased morbidity and mortality in patients undergoing major liver surgery. An additional risk is induced when vascular inflow occlusion is applied giving rise to liver I-R injury which is known to result in microcirculatory perfusion failure. The role of the coagulation system in this type of injury is undetermined.

Objective: The aim of this study was to assess activation of coagulation as a result of hepatic ischemia-reperfusion (I-R) injury in cholestatic rats along with outcome after liver resection (PHx).

Methods: Wistar rats were randomized into 2 groups, i.e. bile duct ligation (BDL) or sham laparotomy (control group) and after 7 days both groups underwent 30 mins partial liver ischemia. Rats were sacrificed before ischemia and after 6 h, 24 h, and 48 h reperfusion, respectively (n = 6 per time point). Survival was assessed in an additional two groups (BDL and control animals) undergoing 45 mins partial liver ischemia combined with PHx of the nonischemic lobes (n = 6 each group).

Results: Serum AST and ALT levels were higher after I-R in cholestatic rats (p < 0.05). Hepatic necrosis, wet/dry ratios of liver tissue and neutrophil influx measured by myeloperoxidase activity were increased in the BDL group after up to 48h reperfusion (p < 0.05). Liver synthetic function was decreased in the BDL group as reflected by prolonged prothrombin time at 6h and 24h reperfusion (p < 0.05). I-R in cholestatic rats resulted in a 12fold versus 7fold (p < 0.01) increase in markers for thrombin generation (thrombin-antithrombin complex levels) and a 6fold versus 2fold (p < 0.01) increase in fibrin degradation products, (BDL versus control, respectively). In addition, the cholestatic rats showed significantly increased levels of the fibrinolytic inhibitor plasminogen activator inhibitor (PAI-1) after 6h and 24h reperfusion. I-R + PHx resulted in increased lethal injury in the BDL group (mortality 4/6 versus 0/6, P < 0.05).

Conclusions: Cholestasis enhances liver I-R induced activation of coagulation and is accompanied by increased mortality when combined with PHx.

Cardiovascular, Thoracic_2 A086

Calcium scoring: Is it possible in the aorto-iliacal arteries?

Komen Niels1, Hermans John2, Klitsie Pieter3, Kleinvensink Gert-Jan4, Jeekel Hans5, Lange Johan6
1 Department of Surgery University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands, 2 Department of Radiology University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands, 3 Department of Surgery University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands, 4 Department of Neurosciences University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands, 5 Department of Surgery University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands (n.komen@erasmusmc.nl)

Purpose To evaluate the effect of the lower threshold (LT), slice thickness (ST), convolution kernel (CK) and contrast enhancement on the calcium score and to determine the necessity for a uniform scoring method.

Materials and Methods: The CK was determined by comparing calcium scores of individual lesions on CT-scan of one patient, obtained with 3 different settings (Contrast enhancement (C) or not (NC) – ST (millimetres) – LT (Hounsfield units)) as follows: 1) NC–2–130 2) NC–2–500 3) NC–5–130 versus NC–5–500 4) NC–2–500 versus NC–5–500 5) NC–2–500 versus C–1–500 6) NC–5–500 versus C–5–500 7) C–1–500 versus C–5–500 (Contrast enhancement (C) or not (NC) – ST (millimetres) – LT (Hounsfield units)).

Results: Calcium scores obtained with different CKs were all significantly correlated (p < 0.01) and significantly different. Further analysis was done with kernel B20. Increasing LT and ST resulted decreasing calcium scores while use of contrast agent led to an increase. Correlations between scores obtained with the previously described settings were all significant (p < 0.01) as were the differences (p < 0.001). The interobserver reproducibility was excellent (p < 0.001), except for one setting, NC–5–130 (p = 0.042).

Conclusions: Although lower threshold, slice thickness, convolution kernel and contrastenhancement all affect calcium scoring, it can be performed in a reproducible fashion in the aorto-iliacal arteries. The scores obtained with different settings are correlated, implying that they can all be applied. However, the significant differences indicate that they are not interchangeable. Therefore a uniform setting should be used.
Modulation of Functional Recovery of Achilles Tendon to Bone Unit after Transection

Krivic Andrija 1, Majerovic Mate 2, Seiwert Sven 3, Sikiric Predrag 4

1 University Hospital Center Zagreb General Surgery, Croatia, 2 University Hospital Center Zagreb Clinical Profuse in Surgery, 3 University of Zagreb Medical School, Department of Pathology, 4 University of Zagreb Medical School, Department of Pharmacology (akrivic2004@yahoo.com)

Objective: Tendon to bone region injuries make as much as 90% of sport related lesions. These injuries are hampered with long healing period and common patient noncompliance. In addition, blood flow in the Achilles tendon edge after injury is significantly reduced within the first 24 hours. Insufficient vascular supply, sparse cellular recruit and low nerve stimulation makes Achilles tendon to bone unit as an excellent wound healing model. Recently, we showed that BPC 157 facilitates stronger tendon to bone insertion over control by prompt clearing of collagen type III and substitution with collagen type I fibers in healing tissue since day 4 after sharp Achilles tendon to bone transection. Here we compared the effect of stable peptide BPC 157 and methylprednisolone on early functional recovery after Achilles tendon to bone transection before collagen healing started.

Methods: Surgical transection of the right Achilles tendon to bone area was performed in seventy-two Wistar Albino male rats. Healing Achilles tendon edges were harvested at days 1–4 following the transection. Using Achilles functional index (AFI), myeloperoxidase activity, histological inflammatory cell influx and vascular index early functional recovery was evaluated. Agents (peptide BPC 157 10 µg, methylprednisolone 5 mg, normal saline 5 ml) were given alone (kg b.w.).

Results: BPC 157 improves functional recovery (AFI values increased during all time points, p < 0.05) by anti-inflammatory (decreased myeloperoxidase (MPO) activity and histological inflammatory cell influx, p < 0.05) and increased new blood vessel formation (increased vascular index, p < 0.05). Methylprednisolone decrease MPO activity and histological inflammatory cell influx, (p < 0.05) but also decrease new blood vessel formation and does not effect early functional recovery.

Conclusions: Joint anti-inflammatory action and early new blood vessel formation facilitates early functional recovery in Achilles tendon to bone healing.

Minimally invasive A089

Value of laparoscopic surgery for colon cancer in clinical routine

Kube Rainer 1, Mroczkowski Pawel 2, Gastinger Ingo 3, Lippert Hans 4

1 Klinik für Allgemein-, Viszeral- und Gefäßchirurgie Universitätshospital in Magdeburg, Germany, 2 Klinik für Allgemein-, Viszeral- und Gefäßchirurgie Universitätshospital in Magdeburg, 3 Klinik für Allgemein-, Viszeral- und Gefäßchirurgie Universitätshospital in Magdeburg, 4 Klinik für Allgemein-, Viszeral- und Gefäßchirurgie Universitätshospital in Magdeburg (rainer.kube@med.ovgu.de)

Background: Using data and analysis compiled in the nationwide German qualitative multi-centered study “Colon/Rectum Cancer” (WGCRC), the aim is to determine the value of laparoscopic surgery for colon cancer as clinical routine.

Methods: From 01/01/2000 to 12/31/2003 observed patients with colon cancer resections were evaluated for short term peri-operative and long term oncologic results associated with operative approach (laparoscopic versus conversion versus open).

Results: 949 (44%) of 21,721 patients underwent laparoscopic resection. These patients were significantly younger (p < 0.001) with a lower ASA risk factor (p < 0.001) and earlier UICC tumor stages (p < 0.001) compared with open resection-treated patients. They showed reduced overall morbidity (p < 0.001) and in-hospital mortality (p = 0.001) as well as shorter hospital stays (p < 0.001), the rates of intra-operative and specific complications remaining unchanged. 19% of patients received resections converted to open surgery.

Conclusions: In Germany laparoscopic surgery is used in only a small number of patients with colon carcinoma. These patients are selected for surgical suitability as mirrored by superior early post-operative results. Conversions are associated with inferior peri-operative and long term oncologic outcomes. At 19%, the rate of conversion resections is too high. Accordingly, the use of laparoscopic surgery for colon carcinoma should be centrally concentrated with corresponding patient selection criteria to ensure optimal results.
Sepsis, Infection, Immunity_2 A090

Hepatocellular apoptosis is mediated by TNF-α-dependent Fas/FasL cytotoxicity in a murine model of Gal/LPS-induced acute liver failure

Kuhla Angela1, Eipel Christian2, Siebert Nikolai3, Abshagen Kerstin4, Menger Michael D5, Vollmar Brigitte6

1 Institute for Experimental Surgery, University of Rostock, Rostock, Germany, 2 Institute for Experimental Surgery, University of Rostock, Rostock, Germany, 3 Institute for Experimental Surgery, University of Rostock, Rostock, Germany, 4 Institute for Clinical & Experimental Surgery, University of Saarland, Homburg/Saar, Germany, 5 Institute for Experimental Surgery, University of Rostock, Rostock, Germany (angela.kuhla@uni-rostock.de)

Background/Aim: There is increasing evidence that active contribution of the hepatocyte to liver disease is strongly dependent on the local cytokine environment. Most recently, it has been shown in vitro that tumor necrosis factor alpha (TNF-α) can enhance hepatocyte FasL-mediated cytotoxicity. The present in vivo study examined the relevance of the Fas/FasL pathway for hepatocellular apoptosis in a TNF-α-driven model of acute liver failure.

Methods: Fas wild type (wt) and Fas lpr (lymphoproliferation) mutant (Fas lpr/lpr) mice pretreated with either soluble TNF-α (TNF-α) or control buffer were examined for hepatocellular apoptosis in the liver after exposure to galactosamine (Gal) and E. coli lipopolysaccharide (LPS).

Results: In Fas wt mice, Gal/LPS-exposed livers highly expressed not only Fas but also FasL and revealed marked tissue damage with hepatocellular apoptosis (in vivo microscopy: 268 ± 20 cells/mm2), cleavage of caspase-3 protein, sinusoidal perfusion failure and alanine aminotransferase (ALT) release (497 ± 106 U/L) which was almost completely prevented by application of the soluble TNF-α-receptor (apoptotic hepatocytes/mm2: 19 ± 4; ALT: 103 ± 19 U/L). Fas lpr/lpr mice revealed markedly lower FasL upregulation and were significantly protected against Gal/LPS-induced apoptosis (apoptotic hepatocytes/mm2: 65 ± 4) and necrosis (ALT: 252 ± 73 U/L). Additional neutralization of TNF-α could further reduce apoptotic cell death (apoptotic hepatocytes/mm2: 36 ± 9). Two colour flow cytometry revealed that TNF-α-induced apoptosis of HepG2 cells which was associated with both Fas and FasL upregulation could significantly be prevented by addition of a FasL-neutralizing antibody.

Conclusion: Taken together, our data provide evidence for a direct link between TNF-α and Fas/FasL, in mediating hepatocellular apoptosis upon Gal/LPS exposure. The TNF-α-induced hepatocellular upregulation of Fas and FasL allows their apoptosis by this ligand-receptor interaction. Thus, hepatocytes must be considered as active contributors in Gal/LPS-induced liver injury.

Sepsis, Infection, Immunity_2 A091

Role of perforin cytotoxicity for hepatocellular apoptosis in a murine model of Gal/LPS-induced acute liver failure

Kuhla Angela1, Eipel Christian2, Siebert Nikolai3, Abshagen Kerstin4, Menger Michael D5, Vollmar Brigitte6

1 Institute for Experimental Surgery, University of Rostock, Rostock, Germany, 2 Institute for Experimental Surgery, University of Rostock, Rostock, Germany, 3 Institute for Experimental Surgery, University of Rostock, Rostock, Germany, 4 Institute for Clinical & Experimental Surgery, University of Saarland, Homburg/Saar, Germany, 5 Institute for Experimental Surgery, University of Rostock, Rostock, Germany (angela.kuhla@uni-rostock.de)

Background/Aim: Cytotoxic T lymphocytes (CTL) play a major role in the modulation of inflammatory liver injury. However, it is unclear to what extent cytolytic pathways like TNFα/TNFFR and perforin contribute to this process. In the present in vivo study we used mice lacking the perforin gene and examined the relevance of the perforin pathway for hepatocellular apoptosis in a TNFα-driven model of acute liver failure (ALF).

Methods: Perforin wild type (Pwt) and perforin knock out (Pko) mice pretreated with either soluble TNF-α-receptor for neutralization of circulating TNFα or saline were exposed to galactosamine (Gal) and E. coli lipopolysaccharide (LPS).

Results: In Pwt mice, Gal/LPS-exposed livers revealed marked tissue damage with hepatocellular apoptosis which was almost completely prevented by application of the soluble TNF-α-receptor, and was accompanied by a downregulation of Fas and FasL protein expression. In Pko mice apoptotic liver tissue injury upon induction of ALF was comparably in extent when compared to Gal/LPS-exposed Pwt mice. In addition, neutralization of TNFα in Pko mice also markedly reduced apoptotic cell death. In contrast, however, Gal/LPS-treated Pko mice revealed a considerably higher release of interleukin-6 (1760 ± 354 pg/ml) and higher necrosis rate (ALT: 870 ± 263 U/L) compared to Pwt mice (IL-6: 597 ± 359 pg/ml; ALT: 406 ± 85 U/L). Moreover, TNFα neutralization caused a marked upregulation of both Fas and FasL protein expression in livers of Gal/LPS-exposed Pko mice.

Conclusion: Taken together, these findings indicate that hepatocellular apoptosis in ALF is independent from the perforin pathway, but highly dependent from TNFα and the TNFα-driven Fas/FasL pathway. In contrast to that, availability of perforin mediates partial protection against hepatic necrosis, supposedly via limited IL-6 release. Thus, Fas- and TNFα-mediated mechanisms constitute the principal pathways by which the initiate immune system causes acute liver injury.

Education A092

Medico-Legal education & training amongst consultant surgeons: a questionnaire

Kumar Bhaskar1, Paringe Vishal2, Shaikh Fasial1, Siddiqui Bajaf4, Touqan Nader5, Ahmad Syed Muzzafar6

1 Scunthorpe General Hospital, UK, 2 Scunthorpe General Hospital, 3 Scunthorpe General Hospital, 4 Scunthorpe General Hospital, 5 Scunthorpe General Hospital, 6 Scunthorpe General Hospital (bhaskARGOPAKUMAR@DOCTORS.ORG.UK)

Aims: Modern day surgical practice is under continual public scrutiny as medico-legal issues continue to grow at alarming levels. There are no studies that have addressed medico-legal training and education amongst surgeons. The aim of this study was to assess the views of Consultant surgeons from a variety of surgical specialities on their attitudes towards medico-legal education and training.

Methods: A questionnaire survey was conducted amongst Consultant surgeons from 5 NHS trusts in the Yorkshire region, consisting of six questions and an area of free text for comments to allow consultants to voice concerns or issues.

Results: Surveys were completed by 60 Consultant surgeons. 88% (n = 53) stated that medicolegal training should be provided to consultant surgeons and 90% (n = 54) stated that registrars should also receive similar training. 45% (n = 27) stated that they had received formal training on medicolegal aspects of surgery. 80% (n = 48) expressed concern that there will be a growing number of medico-legal problems in future surgical practice. 17% (n = 10) felt that they were not receiving enough support from their medical defence union. 42% (n = 25) had not heard of the Confidential Reporting System in Surgery (CORRESS). 5 consultants refused to complete the survey for various reasons.

Conclusions: The majority of Consultant surgeons believe that education in medicolegal aspects of surgery should be an essential part of a surgeon’s training at both consultant and registrar level. Such training may help to reduce the incidence of future medicolegal problems in surgery and to lessen their impact.

Gastrointestinal_2 A093

Establishing a consultant surgeon led service to deliver stenting for inoperable rectal carcinoma

Kumar Bhaskar1, Paringe Vishal2, Ahmad Syed Muzzafar6

1 Scunthorpe General Hospital, UK, 2 Scunthorpe General Hospital (bhaskARGOPAKUMAR@DOCTORS.ORG.UK)

Aims: Establishing a consultant surgeon led service to deliver stenting for inoperable rectal carcinoma.
Sepsis, Infection, Immunity_1 A095

Time course of pro-and anti-inflammatory cytokine levels in patients with burn injury. The prognostic value of IL-10

Lantos Janos1, Földi Viktor2, Pálinkás László3, Bogár Lajos4, Roth Elizabeth5, Csontos Csaba6

1 Department of Surgical Research and Techniques, University of Pécs Medical School, Hungary, 2 Department of Anaesthesia and Intensive Therapy, University of Pécs Medical School, Hungary, 3 Department of Immunology and Biotechnology, University of Pécs Medical School, Hungary, 4 Department of Anaesthesia and Intensive Therapy, University of Pécs Medical School, Hungary, 5 Department of Surgical Research and Techniques, University of Pécs Medical School, Hungary, 6 Department of Anaesthesia and Intensive Therapy, University of Pécs Medical School, Hungary

Introduction: Elevated circulating level of cytokines has already been observed suggesting their important role in the pathophysiological responses following burn injury. However, the dynamism and the prognostic role of these cytokines are controversial. The purpose of this study was to determine the time course of pro-and anti-inflammatory cytokine levels, and their prognostic value in patients with burn injury.

Patients and Methods: 26 patients (21 male, 5 female, mean age 48 ± 19 years) with burn injury were studied. Blood samples were collected at the time of hospital admission and 5 consecutive days thereafter. Concentrations of IL-1, IL-6, IL-8, IL-10, IL-12p70, and TNF-α were concurrently measured in plasma from EDTA anticoagulated and non-stimulated blood by a new, sensitive technique, the flow cytometric bead array (CBA Human Inflammation Kit, BD Biosciences, USA).

Results: Total burn surface area was significantly different in survivor (n = 14) and non-survivor (n = 12) patients (20.1 ± 6.3% versus 36.7 ± 18.0%, p < 0.001). Among the 6 cytokines studied higher concentration of IL-6, IL-8, IL-10 were observed in both groups. IL-6 and IL-8 was moderately elevated on admission and started to increase markedly from the day 2, peaking on the day 4 after injury. IL-10 concentration was elevated at the time of hospital admission and gradually decreased thereafter. ROC analysis of data on admission showed that at a level of 14 pg/ml IL-10 indicated the lethality with 83.3% sensitivity and 100% specificity. Significant differences (p < 0.05) between survivors and non-survivors in concentration of IL-6 was observed on day 4, in IL-8 on days 5 and 6, and in IL-10 on days 1, 2 and 3 post injury, all with higher levels in non-survivors. IL-6/IL10 and IL8/IL10 ratios elevated in both groups of patients until day 3, but decreased thereafter in survivors.

Conclusion: Our results confirmed that cytokines play an important role in the post burn pathophysiological processes. Burn injury was accompanied by an acute anti-inflammatory response that was significantly higher in non-survivor patients. The IL-10 level on admission had prognostic value. Inflammatory cytokine levels overwhelmed the anti-inflammatory processes from the day after trauma but started to normalize earlier in surviving patients. This work was supported by OTKA T060227 grant.

Unusual observations, strange ideas A096

Emergency general surgical admissions of Octogenarians, a prospective study

Latif Shehzad1, Mustafa syed abdur rahman2, Alam Imran3, Baxter John4

1 Morriston Hospital, Swansea, UK, 2 Morriston Hospital, Swansea, 3 Morriston Hospital, Swansea, 4 Morriston Hospital, Swansea

Background: Emergency surgical admissions of octogenarians (80 years and above) is increasing, as we are living longer. A number of octogenarians are referred to surgeons with problems that could be managed easily in primary care, hence increasing the surgical workload. Some hospitals have implemented...
Oncology_1 A097

Mass spectrometry based proteomic profiling of colo-rectal cancer tissue as a source of biomarker discovery and an adjunct to disease staging

Liao Christopher C1, Ward Nicholas J2, Wright James M3, Marsh Simon4, Arulampalam Tan5, Norton John6
1 University of Essex, Colchester General Hospital, UK, 2 Colchester General Hospital, 3 Colchester General Hospital, 4 Essex County Hospital, 5 Colchester General Hospital, 6 University of Essex (chienliao@yahoo.com)

Introduction: Colorectal cancer develops in a stepwise fashion due to alterations in genetic and epigenetic pathways leading to abnormality in normal epithelial cells. Proteomic profiling of cancer tissue truly reflects the state of the cell and could help in identifying molecular markers for early diagnosis of disease, disease progression and recurrence. We are evaluating the expression profiles of colorectal cancer tissues as compared with adjacent normal mucosa to identify marker proteins for early detection of cancer and signature proteins as an adjunct to disease staging.

Methods: Hydrophobic total cell protein from colorectal cancer tissue and adjacent normal mucosa were extracted using MB-HIC8 magnetic beads from 37 patients and processed with MALDI-TOF mass spectrometry. The spectral data were pre-processed using SpecAlign® and analysis was done using on-line bioinformatics software GenePattern®.

Results: Unsupervised hierarchical clustering segregated all but one tumour from normal spectra and correctly identified all spectra with 97.2% accuracy. A total of 597 discriminatory peaks were identified between tumour and normal; prediction algorithm using ‘leave-one-out’ k-NN and weighted-voting cross validation clearly predicted tumour from normal with a sensitivity of 100% and specificity of 94%. Train and test model correctly identified tumour from normal with high sensitivity and specificity. The average time interval between initial proteomic reconstruction and final salvage was 75 months. All operations were successful – patients had soft, natural-looking breasts and remained symptom-free at follow up.

Discussion and Conclusion: The choice for a patient to undergo a second reconstruction is difficult, especially as these women have had multiple revisions of their implant-based reconstructions. However, we have shown that implant-free salvage with free abdominal tissue cures their discomfort and disfigurement. We recommend that autologous replacement be performed as soon as an implant-based reconstruction becomes unsatisfactory. Moreover, this subgroup of women would have been better served by initial autologous reconstruction. The challenge is to identify them prospectively.

Plastic_1 A099

Experience with Wise pattern skin resection in skin-sparing mastectomy and immediate breast reconstruction for large breast volumes

Lie Kwok Han1, Di Candidia Michele2, Forouhi Paro1, Malata Charles M3
1 University of Cambridge School of Clinical Medicine, Addenbrooke’s Hospital, Cambridge, UK, 2 Department of Plastic and Reconstructive Surgery, Addenbrooke’s Hospital, Cambridge University Hospitals NHS Trust, Hills Road, Cambridge CB2 2QQ, UK, 3 Department of Plastic & Reconstructive Surgery, Addenbrooke’s University Hospital, Cambridge University Hospitals NHS Trust, Hills Road, Cambridge CB2 2QQ, UK

Introduction: Implant-based breast reconstructions are popular but important complications like capsular contracture, implant failure and unsatisfactory aesthetic results make them inherently prone to revisional surgery. In the context of adjuvant radiotherapy or infection, the original prosthetic reconstruction often fails to provide satisfactory outcomes despite multiple revisional procedures to address complications. Patients continue to complain of pain, poor cosmesis and general dissatisfaction. As a last resort, conversion to autologous tissue reconstruction in the form of free flaps provides excellent cosmetic results and symptom relief. We therefore reviewed our experience in the replacement of failed prosthetic reconstructions with free tissue transfer.

Patients & Methods: Patients undergoing salvage of failed prosthetic reconstructions were retrospectively reviewed. Reconstruction methods, previous radiotherapy, indications for revision, salvage procedures and outcomes were noted. Results: In the six patients studied (mean age = 40 years, r = 23–57), there had been 2 delayed and 4 immediate reconstructions. Five patients had received adjuvant radiotherapy. Five presented after multiple revisional surgeries. The commonest indications for free tissue transfer were recalcitrant capsular contracture, persistent pain and poor cosmetic outcome. Salvage involved explantation, tumour excision and autologous tissue reconstruction using abdominal flaps. The average time interval between initial prosthetic reconstruction and final salvage was 75 months. All operations were successful – patients had soft, natural-looking breasts and remained symptom-free at follow up.

Discussion and Conclusion: The choice for a patient to undergo a second reconstruction is difficult, especially as these women have had multiple revisions of their implant-based reconstructions. However, we have shown that implant-free salvage with free abdominal tissue cures their discomfort and disfigurement. We recommend that autologous replacement be performed as soon as an implant-based reconstruction becomes unsatisfactory. Moreover, this subgroup of women would have been better served by initial autologous reconstruction. The challenge is to identify them prospectively.
Introduction: Skin-sparing mastectomy (SSM) and immediate breast reconstruction (IBR) remain technically challenging in very large breasts. Women often require extensive skin reduction, with high incidence of postoperative complications. We report our experience with SSM and Wise pattern skin reduction (WPSR) in IBR, and examine factors contributing to postoperative complications.

Patients & Methods: The medical records of patients undergoing SSM and IBR with WPSR between 1999–2007 were reviewed. Co-morbidity, BMI, smoking, post-op grade, mastectomy weight, reconstruction type, indications and axillary surgery were noted. Complications were categorised into those relating to skin healing, proven wound infections and "other." Results: 25 operations (20 for malignancy, 5 prophylactic, comprising 17 free TRAM/DIEPs, 5 pedicled TRAMs, 6 LD-flaps and 2 implant-only) were undertaken in 22 patients aged 32–62 (mean: 51), BMI 22.5–39.3 kg/m2 (mean: 30.4 kg/m2), 5/22 current smokers. There were 13 associated axillary clearances. 8 women had grade 2 or 3 ptosis. Mastectomies weighed 924–1972 g (mean: 1299 g). Sixteen operations developed skin complications; 8 (32%) were minor, but 8 required further surgical intervention. 9/25 operations developed an infection, and there were 4 other minor complications. All operations achieved satisfactory aesthetic outcomes. At median cancer follow-up of 24 months (range: 2–98), there have been no local recurrences and 2 deaths. Mastectomy weight was significantly associated with major skin complications requiring further surgery (age adjusted OR per 100g was significantly associated with risk of postoperative infection of SSM was significantly associated with risk of postoperative infection (age adjusted OR per 100g = 1.3–23, p = 0.02). Performance of axillary clearance at the time of SSM was significantly associated with risk of postoperative infection (age adjusted OR = 5.8, CI 1–26, p = 0.021). These relationships were maintained after adjusting for patient (including BMI), surgical and tumour factors.

Conclusion: Wise pattern skin reduction is a useful technique for managing large, ptotic breasts undergoing SSM and IBR. Increasing breast size and the type of cancer surgery are important predictors of postoperative complications.

Wound healing A100

The impact of FloSeal matrix hemostatic agent in thyroid surgery: a prospective, randomized, comparative study

Lissidini Germana1, Guarrado Angela2, Poli Elisabetta1, Piccinni Giuseppe1, Marzaoli Rinaldo1, Testini Mario1

1 Department of Application in Surgery of Innovative Technologies. University Medical School of Bari, Italy; 2 Department of Application in Surgery of Innovative Technologies. University Medical School of Bari, Italy; 3 Department of Application in Surgery of Innovative Technologies. University Medical School of Bari, Italy

Introduction: Hemorrhage is a rare but severe and potentially lethal complication of thyroid surgery. Starting from the occasional successful employment of the FloSeal Matrix hemostatic agent, we decided to design a prospective, randomized, controlled trial aiming to compare the impact of FloSeal Matrix hemostatic agent on thyroid surgery with hemostatic surgical procedures and other hemostatic agents.

Materials and Methods: Between 2006 and 2007, 155 patients underwent a total thyroidectomy. The patients were randomized into three groups: group A (n = 52), group B (n = 52) and group C (n = 51) in which the hemostasis was completed by employing human fibrin glue/oxidized regenerated cellulose patch and FloSeal, respectively. Randomization was performed using numbered and sealed envelopes that were opened at the beginning of the operation.

Results: Mean duration of surgery was 133 minutes (range: 75–280) in group A versus 124 (range: 90–180) and 107 (range: 60–180) in B and C, respectively, with significant statistical differences among the three groups: A versus B (p = 0.07), A versus C (p = 0.001), B versus C (p = 0.006). The drainage stay was significantly shorter in group C (32.2 hours) versus A (39.7 hours, p = 0.02) and shorter in C versus B (39.7 hours, p = NS). The post-operative stay was higher in group B (mean: 49.8 hours) versus group A (mean: 47.5 hours; p = NS) and significantly higher in B versus C (mean: 42.2 hours; p = 0.02) and in A versus C (p = 0.06). The study showed no significant differences in terms of postoperative morbidity: transient hypoparathyroidism (30.6% versus 21.1% versus 27.8%), transient recurrent nerve palsy (4.1% versus 3.8% versus 3.7%) and post-operative haemorrhage (0% versus 1.9% versus 0%).

Conclusion: FloSeal matrix is a safe, effective and easy-to-employ agent improving hemostasis in patients undergoing thyroid surgery.

Hepatobiliary_1 A101

Relationship between Chemokine levels of the Central Nervous and Splanchnic Systems in rats with Prehepatic Portal Hypertension

Losada M1, Cruz A2, Aller M3, Merino JJ1, Arias F4, Arias JL5

1 General Surgery Department. Virgen de la Luz Hospital. Cuenca, Spain; 2 General Surgery Department. Virgen de la Luz Hospital. Cuenca, Spain; 3 Surgery Chair. Dept. of Surgery I. School of Medicine. UCM.Madrid, Spain; 4 Neurobiology Lab. Psychobiology Department. UNED. Madrid, Spain; 5 Surgery Chair. Dept. of Surgery I. School of Medicine. UCM.Madrid, Spain

Introduction: The impact of floseal matrix hemostatic agent in thyroid surgery: a prospective, randomized, comparative study

Methods: Male Wistar rats were used: Control (n = 8); Sham-operated (n = 6) and Triple Partial Portal Vein Ligation (n = 12). At one month of evolution, RANTES, CXCR4/SDF-1alpha and CX3CR1/Fractalkine were measured by ELISA in synaptosomes from several brain areas (hippocampus, cerebellum, lymphatic nodes). We have not found regulation of both chemokine systems only in synaptosomes from the hippocampus (CXCR4/SDF1-alpha and CX3CR1/Fraktalkine). Moreover, CX3CR1 levels increased in the ileum (CXCR1/Fraktalkine). Moreover, CX3CR1 levels increased in the ileum (CXCR1/Fraktalkine). In the CNS of portal hypertensive rats, SDF-1alpha increased not only in synaptosomes from the hippocampus (p < 0.05), but also in cerebellum (p < 0.05). In addition, RANTES (p < 0.05) decreased in the striatum, whereas TNF-alpha and CXCR4 levels trend to increase in the hippocampus. Moreover, in these rats TNF-alpha also increased in the ileum and in mesenteric lymphatic nodes. We have not found regulation of both chemokine systems (CXCR4/SDF1-alpha and CX3CR1/Fractalkine and RANTES) in the rest of the brain areas studied. Interestingly, in the liver Bcl-2 levels were reduced and it was associated with a decrease of both chemokine systems (CXCR4/SDF1-alpha and CX3CR1/Fractalkine and RANTES). Moreover, CX3CR1 levels increased in the ileum (p < 0.05), whereas its ligand, Fractalkine, increased (p < 0.05) in the mesenteric lymph nodes.

Conclusion: The alterations of chemokines in the splanchnic-cerebral axis, all over CXCR1/Fractalkine protein levels, in rats with prehepatic portal hypertension suggest a role of anti-inflammatory and repair mechanisms that could compensate the pathological action of pro-inflammatory mediators. In this way, increased SDF1-alpha levels in the hippocampus and cerebellum could suggest the involvement of this alpha chemokine in stem cell recruitment and in neuronal rearrangements. Therefore, the existence of a mechanism of communication chemokine-dependent through the splanchnic-brain axis in prehepatic portal hypertension could be hypothesized.
Hepatobiliary_2 A102
Mast Cell could express a dual role in Microsurgical Extrahepatic Cholestasis in the
Losada M¹, Cruz A², Sánchez-Patán F³, Anchuelo R⁴, Aller M A⁵, Arias J⁶
¹General Surgery Department. Virgen de la Luz Hospital. Cuenca, Spain, ²General Surgery Department. Virgen de la Luz Hospital. Cuenca, Spain, ³Surgery I Department. School of Medicine. Complutense University of Madrid, Spain, ⁴Surgery I Department. School of Medicine. Complutense University of Madrid, Spain, ⁵Surgery I Department. School of Medicine. Complutense University of Madrid, Spain, ⁶Surgery I Department. School of Medicine. Complutense University of Madrid, Spain.

Background: Fibrosis, bile duct proliferation and mast cell hyperplasia are characteristic histopathological changes in experimental chronic extrahepatic cholestasis. We have studied these liver alterations in a new microsurgical model of extrahepatic cholestasis in the rat.

Methods: Male Wistar rats were divided into two groups: I (Sham-operated; n = 9) and II (Microsurgical Cholestasis; n = 10). After 4 weeks, a morphometric study was carried out using an image analysis system to assess bile proliferation and the fibrosis content of the liver. The liver expression of smooth muscle actin (SMA) was assayed by an immunohistochemical technique and mast cells were also counted.

Results: The animals with microsurgical cholestasis presented portal hypertension with extrahepatic portosystemic collateral circulation, mesenteric venous vasculopathy and increased (p = 0.0001), plasma levels of bilirubin, alkaline phosphatase, AST, ALT and LDH. On the contrary, plasma levels of Albumin decreased (p = 0.001). In cholestatic-rats the liver showed intense biliary duct proliferation (p = 0.0001) and fibrosis (p = 0.0001). Mast cells accumulate (p = 0.0001) around proliferating bile ducts and fibrous septa in the liver of cholestatic-rats.

Conclusions: The microsurgical resection of the extrahepatic bile tract in the rat induces fibrosis and hyperplasia of bile ducts and mast cells. The great mast cell heterogeneity suggests that they could develop a protective role favouring liver remodeling in experimental extrahepatic cholestasis.

Orthopedic_1 A104
Comparison between closed wound drainage and no drainage in total knee
Malhotra Akshay1, Velpula Jagan2, Singh Jagwant1, Benton Mark3, Denn Peter2
¹Macclesfield District General Hospital, Macclesfield, U.K, ²Macclesfield DGH, UK, ³Macclesfield DGH, UK, 4Macclesfield DGH, UK, 5Macclesfield DGH, UK

The use of drains in total knee arthroplasty remains controversial. The drains do not affect the patients’ hospital stay, blood loss or the patients’ satisfaction in any way. On the contrary the drains tend to cost the National Health Service dearly. This prospective, non-randomised study was designed to evaluate the role of drains in routine total knee arthroplasty. Our study involved a single surgeon and a single prosthetic knee implant. Tourniquet was used which was released after applying the dressing. We analysed the following parameters – age, sex of the patient, length of stay and haemoglobin drop. We investigated 100 patients undergoing knee arthroplasties out of which 50 patients had drains inserted and 50 had no drains inserted. The group having no drains inserted had an average age of 70 years with a range of 54–88 years and a male to female ratio of 3 : 4. The average length of stay in hospital was 5 days and the average haemoglobin drop was 22gm/ml. The group having drains inserted had an average age of 69 years with range of 54–87 years and a male female ratio of 1 : 2. The average length of stay in hospital was 5 days and average haemoglobin drop was 30 gm/ml. Thus on conclusion we found that patients without any drains placed had a comparable length of hospital stay and a lesser drop in haemoglobin as compared to the group of patients where drains were used. There were no wound complications in this group either. The cost-effectiveness of not using drains supported by better patient satisfaction and easier dressing post-operatively on the ward outweighs argument in the favour of placing drains.

Orthopedic_1 A103
Post operative pain management of unicompartmental knee arthroplasty with intra-articular cocktail regimen
Malhotra Akshay1, Velpula Jagan2, Singh Jagwant1, Poornacha Tej4, Denn Peter1, Mitchell Paula6
¹Macclesfield District General Hospital, Macclesfield, U.K, ²Macclesfield DGH, UK, ³Macclesfield DGH, UK, ⁴Macclesfield DGH, UK, ⁵Macclesfield DGH, UK, ⁶Macclesfield DGH, UK

Post operative pain management is an essential component of joint replacement surgery. Routinely epidural infusions have been used for managing post operative pain in total knee replacements. In unicompartmental knee replacements we used a cocktail regime consisting of 30 ml of levobupivacaine (5 mg/ml), 0·5 ml of adrenaline (1:1000) and 40 mg of parecoxib mixed in 50 ml of normal saline. This was injected in to the joint after the surgery was performed. No epidural analgesia was used post operatively. We found that this regime provided effective pain relief in post-operative patients supported by decreased use of oral or pararatal analgesics. It enabled patients to mobilize early, shorter convalescence period and a shorter hospital stay. They all achieved good post operative range of movements averaging 120 degrees by the second day. This led to high patient satisfaction. Twelve patients who have had a unicompartmental knee replacement done, had this cocktail regime. Their average length of hospital stay was three days. Pain relief was satisfactory and physiotherapy outcome was improved. In conclusion our study shows that the cocktail regime not only helps in effective pain relief, early mobilization, reducing the incidence of deep vein thrombosis, pulmonary embolism and reducing the hospital stay.

Transplantation, Organ preservation_2 A105
Optimising post-conditioning time of marginal livers
Manekeller Steffen1, Stegemann Judith2, Seinsche Alexandra3
¹Department of Surgery, Faculty of Medicine, Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany, ²Surgical Research Division, Faculty of Medicine, Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany, ³Surgical Research Division, Faculty of Medicine, Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany (steenke.mane@ukb.uni-bonn.de)

Background: Due to the discrepancy between organ donors and receptors the use of marginal livers (steatosis livers or organs from non-heart-beating donors) for transplantation purpose increased. The potential of a short-term aerobic machine perfusion for ‘less then optimal’ grafts after cold storage was recently demonstrated. In this context it was shown that this post-conditioning mainly depends on the provision of oxygen, but was independent on the allowance of nutrients. In our study the optimal time course of post-conditioning is to be evaluated.

Material and methods: Livers from male Wistar rats were withdrawn 30min after cardiac arrest and flushed with 60ml of HTK preservation solution (via portal vein). The organs were then stored at 4°C for 18h under ischemic conditions (CS). After 16h a part of the livers were then transferred to an aerobic machine perfusion circuit for 0·5h, 1h, 2h or 3h. Afterwards the viability of the organs was estimated by an acellular aerobic normothermic reperfusion (2h) in vitro. The vascular resistance (Pa/s/ml), the enzyme release into the perfusate (U/l), bile production (µl/g/h), the O2-consumption (µl/g/min), the ammonium-clearance (µmol urea/gxh), the ATP content (%/CS) and expression of apoptotic factors in the tissues (TUNEL) were evaluated.

Results: After 1h of post-conditioning (1h and 2h) a significant increase in bile production and a decrease in enzyme release could be detected in comparison to CS. Also for the vascular resistance, the oxygen consumption and the urea clearance a positive tendency was noted starting with 1h of PK. The
ATP content of the PK livers after 1h of treatment was 60% higher than in CS organs. No markers for apoptosis could be detected after 1h of PK.

**Conclusion:** It can be concluded that a post-conditioning time of 1h after cold storage can avoid the organviability of marginal livers. The extension or abbreviation of PK time seems to have no further beneficial effects. After 1h of PK the ATP content reaches his maximum, afterwards the values decrease. Also the apoptotic induction is triggered on PK times over 1 hour.

**Hepatobiliary.2 A106**

**Noninvasive quantitative assessment of hepatic steatosis in the rat liver using 3·0 Tesla 1H-Magnetic Resonance Spectroscopy**

Marsman Hendrik1, Werven van Jochem2, Nederveen Aart3, Kate, ten Fiblo4, Stoker Jaap3, Gulik, van Thomas6

1 Department of Surgery, University of Amsterdam, Amsterdam, The Netherlands, 2 Radiology department, Academic Medical Center, 3 Radiology department, Academic Medical Center, 4 Pathology department, Academic Medical Center, 5 Radiology department, Academic Medical Center, 6 Surgery Department, Academic Medical Center

The amount of hepatic fat accumulation (steatosis) is an important diagnostic parameter in the pre-operative workup of patients undergoing liver resection or in living donor liver transplantation. The gold standard for quantitative steatosis determination is histopathological assessment of needle biopsies, which is invasive, subject to undergrading and associated with complications.

1H-Magnetic Resonance Spectroscopy (1H-MRS) using a conventional MRI scanner allows non-invasive quantification of steatosis. The aim of this study was to validate 3·0 Tesla 1H-MRS measurements in a rat steatosis model and to investigate the discriminative power of 1H-MRS. Steatosis was induced by feeding rats a methionine choline deficient (MCD) diet for 0, 1, 2, 3 or 5 weeks (n = 5 per group). 3·0 Tesla 1H-MRS measurements of rat livers were performed and multiple samples were taken for hepatic fat analysis. Correlations (Spearman) were studied between 1H-MRS, histopathology and 1H-MRS. Histopathology revealed no macrovesicular steatosis (MAS) in control rats, whereas one week of MCD diet induced mild MAS (mean, range) of 6% (0–23%). After two weeks MCD diet, a significantly increased MAS was seen of 40% (31–70%) which after three and five weeks, was 60% (30–73%) and 84% (70–93%), respectively.

A significant correlation was observed between 1H-MRS measurements and histopathological MAS (r = 0.93, p < 0·0001). Also, 1H-MRS correlated significantly with total fatty acid concentration (gas chromatography). Histopathology revealed no macrovesicular steatosis (MAS) in control rats, whereas one week of MCD diet induced mild MAS (mean, range) of 6% (0–23%). After two weeks MCD diet, a significantly increased MAS was seen of 40% (31–70%) which after three and five weeks, was 60% (30–73%) and 84% (70–93%), respectively.

1H-MRS measurements of rat livers with increasing steatosis grades were significantly different: 0–25% versus 25–50% MAS (p = 0·01), 25–50% versus 50–75% MAS (p = 0·009), and 50–75% versus 75–100% MAS (p = 0·01).

**Conclusion:** 3·0 Tesla 1H-MRS measurements in a rat steatosis model correlate strongly with morphological and biochemical assessments of parenchymal fat. 1H-MRS was also able to accurately discriminate between varying degrees of steatosis. These results encourage application of 1H-MRS for non-invasive quantitative assessment of steatosis in a clinical trial.

**Oncology.1 A108**

**Histological and clinical evaluation of total regressions of lower two-third rectal cancers after neoadjuvant combined radio-chemotherapy**

Maris Gabor1, Tórik Miklós2, Horváth Akos3, Kincses Zsuzs4

1 Kenczy Teaching Hospital, Surg. Oncol., Debrecen, Hungary, 2 Kenczy Teaching Hospital, Dept. of Pathology, 3 Univ. of Debrecen, Medical Center, Dept. of. Rad. Oncol., 4 Kenczy teaching hospital, Surg. Oncol. (martisgabor@unimedmail.hu)

**Background:** There are even greater number of evidence that the present gold standard treatment of locally advanced adenocarcinomas of lower two-third rectum is the combined chemotherapy and long term radiation treatment completed with surgery and postoperative chemotherapy. The authors have conducted a 6-y. trial involving patients with disease mentioned above. The aim of this study was the analysis of partial and total regressions after neoadjuvant treatment.

**Method and patients:** Total number of patients involved in the so-called long-term radiated patients-group were 78. All patients were proved locally advanced (T3–4) lower two-third adenocc. Previous staging examination these patients were administered 5 FU based chemotherapy regime twice or three times and they underwent a 28 × 1.8 Gray three-field 3D conformal radiation treatment. It was analysed the eventual (up) or down staging by rectal USG and MRI and after operation-by histological evaluation of tumor regression in a 5-grade scale (TRG). All lymph nodes dissected by TME were scrutinised considering metastases. It was analysed in the comprehensive study the DFS, OS, TR and metastasis free survival (MFS) and all these factors were compared to the TRG by statistical analysis. Patients with other organ metastases were excluded from the study.

**Results:** All patients in this group reacted positively on neoadjuvant long term treatment considering improvement of daily bowel movements. 57 percent of patients could be proved a certain degree of down-staging. In 13 cases out of 78 were verified histological complete regression. Each patient had a lower third T3 tumour in a original maximum diameter of 6.5 cm. In 1 patients out of 13 were diagnosed pararectal lymph node met. There could not be found significantly better OS in patients with less than 3 positive lymph nodes compared to lymph node negative patients. It turned out that proportion of local recidives are significantly higher if the patients were more than 3 positive lymph nodes. In these cases the average TR was 16 months which is considerably shorter than it was patients with less than 3 positive lymph nodes.

**Conclusion:** The degree of down staging and TRG are considerable factors play a leading role in a sphincter preservative operation but the final OS and
TR is determined by the number of positive lymph nodes. Proportion of anal sphincter preservative operation have been increased as many as 15 percent. It goes without question that patients with T3–4 rectal cancers should be treated by neoadjuvant long term radiation therapy and chemotherapy. Combination of node negative specimen, originally less than 6 cm of diameter of tumour considerable or total regression of tumour are the most important factors in definitive DFS. The one million dollar question is – or at least will be (not) in the far future–that how you should manage patients with preoperatively proved total regression and in the meantime with negative lymph nodes.

Sepsis, Infection, Immunity_2 A109

Real-time detection technology for rapid diagnosis of mycobacterial tuberculosis complex (mtbc) in endoscopic biopsy samples and paraffin-embedded tissue

Maudar Kewal1, Misha Pradyumna2
1 Bhopal Memorial Hospital and Research Centre, Bhopal, INDIA (maudarj@yahoo.com)
2 Academic Vascular Surgical Unit, Alderson House, Hull Royal Infirmary, Anlaby Road, Hull. HU3 2JZ

Introduction: The diagnosis of Mycobacterium tuberculosis complex (MTBC) in endoscopy biopsy samples and formalin-fixed, paraffin-embedded surgically resected tissues of the gastro-intestinal tract remains a complex issue because the most widely used conventional diagnostic tools, such as culture and acid fast bacilli staining are unable to rapidly detect Mycobacterium tuberculosis with sufficient sensitivity. Using fluorescence resonance energy transfer (FRET) technology based on hybridization probes, we applied a novel technique consisting of an internally controlled quantitative real-time PCR assay that provided a significant improvement in detection sensitivity and quantification.

Materials & Methods: Mycobacterial DNA was extracted from endoscopic biopsies and tissue sections by proteinase K digestion in combination with DNeasy Blood & Tissue Kit (Qiagen, Germany). Real time assay was performed with RealArt Mycobacterium tuberculosis Kit using Roche Light Cycler 2.0. Qualitative and quantitative analysis was performed in 14 biopsies and 8 tissue sections received from Medical & Surgical Gastroenterology Departments of our institute with suspected cases of MTB infection.

Results: Clinical suspected cases (n = 22) of tuberculosis infection in the gastro-intestinal tract included in the study were negative for qualitative presence of MTBC using conventional diagnostic methodologies. However, application of Real time PCR detection technology showed positivity of 45% and specificity of 100% confirming presence of MTBC in 10 cases out of the 22 studied.

Conclusion: Results of our investigation exhibit that the real-time detection technology using FRET probes has much higher sensitivity and specificity for the detection of MTBC DNA in endoscopy biopsy samples and formalin-fixed, paraffin-embedded surgically resected tissues of the gastro-intestinal tract. However, to establish the superiority of this novel technique for MTBC diagnosis in various latent infectious states, it will be necessary to accumulate data from a larger number of patients with suspected tuberculous infection.

Gastrointestinal_2 A111

How the symptoms of dyspepsia Improve after cholecystectomy?

Mehrvarz Shaban1, faniae s.ahmad2
1 Dept. of Surgery, Baqiyatallah University of Medical Science, Tehran, Iran
2 Assistant Professor of Surgery, Dept. of Surgery, Baqiyatallah University of Medical Science, Tehran, Iran (mehrvarz@bmu.ac.ir)

Introduction: Although in the symptomatic Gallstone disease, cholecystectomy is the treatment of choice, but these patients may have atypical or dyspepsia symptoms such as (Glubus sensation, heart burn, bloating . . . ). The rates of improvement of symptoms after cholecystectomy are varying, and they are not acceptable. This study intends to determine the rate of improvement of symptoms, especially in dyspepsia patient after cholecystectomy.

Methods and Material: In this study, 148 patients with symptomatic gall stone (98 with typical pain and 50 with dyspeptic symptom) underwent cholecystectomy, were included. Four months after operation they evaluated for the improvement of their preoperative symptoms.

Conclusions: In patients who have dyspeptic symptoms, improvement rate after cholecystectomy is low (33%). We recommend that in patients with Gallstone and dyspeptic symptoms without typical biliary pain, it is best to do more investigations before surgery, such as upper GI endoscopies, psychologic consultation and . . . to rule out other differential diagnosis. Key Words: Gallstone, Cholecystectomy, Dyspepsia, Regurgitation, Glubus sensation didn't improved.

Cardiovascular, Thoracic_2 A110

Early result : Randomized Controlled trial of treatment for intermittent claudication

Mazari Fayaz Ali Khan1, Gulati Sumit2, Lee H. L.D3, Mehta Tapan4, Rahman MNA5, Chetter Ian6

1 Academic Vascular Surgical Unit, Alderson House, Hull Royal Infirmary, Anlaby Road, Hull. HU3 2JZ
2 Assistant Professor of Surgery, Dept. of Surgery, Baqiyatallah University of Medical Science, Tehran, Iran
3 Academic Vascular Surgical Unit, Alderson House, Hull Royal Infirmary, Anlaby Road, Hull. HU3 2JZ
4 Academic Vascular Surgical Unit, Alderson House, Hull Royal Infirmary, Anlaby Road, Hull. HU3 2JZ
5 Academic Vascular Surgical Unit, Alderson House, Hull Royal Infirmary, Anlaby Road, Hull. HU3 2JZ
6 Academic Vascular Surgical Unit, Alderson House, Hull Royal Infirmary, Anlaby Road, Hull. HU3 2JZ (fayazmfazarr@bstmail.com)

Introduction: The diagnosis of Mycobacterium tuberculosis complex (MTBC) is endoscopy biopsy samples and formalin-fixed, paraffin-embedded surgically resected tissues of the gastro-intestinal tract remains a complex issue because the most widely used conventional diagnostic tools, such as culture and acid fast bacilli staining are unable to rapidly detect Mycobacterium tuberculosis with sufficient sensitivity. Using fluorescence resonance energy transfer (FRET) technology based on hybridization probes, we applied a novel technique consisting of an internally controlled quantitative real-time PCR assay that provided a significant improvement in detection sensitivity and quantification.

Materials & Methods: Mycobacterial DNA was extracted from endoscopic biopsies and tissue sections by proteinase K digestion in combination with DNeasy Blood & Tissue Kit (Qiagen, Germany). Real time assay was performed with RealArt Mycobacterium tuberculosis Kit using Roche Light Cycler 2.0. Qualitative and quantitative analysis was performed in 14 biopsies and 8 tissue sections received from Medical & Surgical Gastroenterology Departments of our institute with suspected cases of MTB infection.

Results: Clinical suspected cases (n = 22) of tuberculosis infection in the gastro-intestinal tract included in the study were negative for qualitative presence of MTBC using conventional diagnostic methodologies. However, application of Real time PCR detection technology showed positivity of 45% and specificity of 100% confirming presence of MTBC in 10 cases out of the 22 studied.

Conclusion: Results of our investigation exhibit that the real-time detection technology using FRET probes has much higher sensitivity and specificity for the detection of MTBC DNA in endoscopy biopsy samples and formalin-fixed, paraffin-embedded surgically resected tissues of the gastro-intestinal tract. However, to establish the superiority of this novel technique for MTBC diagnosis in various latent infectious states, it will be necessary to accumulate data from a larger number of patients with suspected tuberculous infection.

Objective: To compare angioplasty (PTA), supervised exercise (SEP) and PTA + SEP in the treatment of intermittent claudication (IC) due to femoro-popliteal disease.

Methods: Over a 6 years period, 178 patients (108 men, median age 70 years) with angioplastable femoro-popliteal lesions were randomized to: PTA, SEP or PTA + SEP. Patients were assessed prior to and at 1 & 3 month post treatment. ISCVS outcome criteria (Ankle pressures, treadmill walking distances) and Quality of Life (QoL) questionnaires (SF36 and VascuQoL) were analysed.

Results: All groups were well matched at baseline, 21 patients withdrew. Intra group analysis: All groups demonstrated significant clinical and QoL improvements (Friedman test, p < 0.05). SEP (59 patients, 8 withdrew) – 62.7% of patients (n = 32) improved following treatment [20 mild, 9 moderate, 3 marked], 27.4% (n = 14) no improvement and 9.8% (n = 5) deteriorated. PTA (60 patients, 3 withdrew) – 66.6% of patients (n = 38) improved following treatment [19 mild, 10 moderate, 9 marked], 22.8% (n = 13) no improvement and 10.5% (n = 6) deteriorated. PTA + SEP (59 patients, 10 withdrew) – 81.6% of patients (n = 40) improved following treatment. [10 mild, 17 moderate, 13 marked], 14.2% (n = 7) no improvement and 4.0% (n = 2) deteriorated Inter group Analysis: PTA + SEP produce a much greater improvement in clinical outcome measures than PTA or SEP alone, but there was no significant QoL advantage (Kruskal Wallis test, p > 0.05).

Conclusion: SEP should be the primary treatment for the patients with claudication and PTA should be supplemented by a SEP.
This presentation, which focuses on the importance of innovative mentors in the training and further development, is based on my own experience. During the course of medical school, residency, fellowship and faculty appointments, I was indebted to many innovative mentors and colleagues who prompted me to consider, not only the “tried and true” but also innovative approaches solutions to problems, both in the laboratory and in the clinic. These “Guiding Lights” were Alfred Blalock, (1958–1961), at the Johns Hopkins School of Medicine, who started me transplanting lobes of liver in dogs, at a time when no one else was doing that, Willard Goodwin at UCLA, who introduced me to clinical renal transplantation in 1961 and many others. Under Wm. Kelly and R.C. Lillehei I developed in the laboratory the first routinely successful method for long term success with pancreas transplants in 1966. Other mentors who stimulated me to be creative in my work were Drs. Robert A Good, Thomas Starzl, Folkert Belzer, Ben Eiseman and John S. Najarian and Sir Peter Medawar. Through their efforts I also learned how to teach and mentor and also reach out to the community. In this presentation, I will demonstrate how these and other mentors influenced and helped me become innovative in my approach to surgical problems in transplantation.

Oncology_1 A113

Critical role of p38 mitogen-activated protein kinase signaling in colonic radiation

Mihaescu Andread1, Jeppson Bengt2, Thorlacius Henrik3
1 Department of Surgery, Lund University, Malmo University Hospital, Malmo, Sweden, 2 Department of Surgery, Lund University, Malmo University Hospital, Malmo, Sweden, 3 Department of Surgery, Malmo University Hospital, Malmo, Sweden (Andreada.Mihaescu@mumed.lu.se)

Background: Adjuvant radiation is frequently used in the treatment of different types of tumours although associated with serious side effects. Leukocyte and platelet-mediated tissue damage constitute a key feature in irradiation injury but the signalling mechanisms behind leukocyte and platelet recruitment in the colon remain elusive. p38 mitogen activated protein kinase (MAPK) signalling is an important signal transduction pathways integrating extracellular stimulus to an intracellular signal. The aim of our study was to define the role of p38 MAPK signalling in colonic radiation injury.

Method: Male C57Bl mice were randomly divided into 6 groups (5 animals in each). The specific p38 MAPK inhibitor SB239063 was given intravenously immediately prior radiation (0–4mg/kg). Leukocyte- and platelet-endothelium interactions in the colon were determined by use of intravital fluorescence microscopy 16 h after radiation with 20Gy. CXC chemokines were determined by use of ELISA.

Results: Radiation induced clear-cut increase in leukocyte and platelet recruitment as well as in CXC chemokines levels in the colon. Inhibition of p38 MAPK signaling reduced dose-dependently radiation-induced leukocyte rolling and adhesion as well as platelet rolling and adhesion. Moreover SB239063 decreased MIP-2 and KC expressions more than 60% and respective 40% in the colon of radiated mice.

Conclusion: Our study demonstrates that p38 MAPK signalling constitutes a key role in radiation damage of the colon and that inhibition of p38 MAPK activity abolishes leukocyte and platelet recruitment as well as CXC chemokine formation. Thus, we conclude that p38 MAPK signalling pathway may be useful for new therapeutic strategy against radiation injury.

Oncology_2 A114

Various patterns of Podoplanin Expression in Esophageal Cancer

Mizuno Yasuhiro1, Kubo Hajime2, Watanabe Go3, Sakai Yoshitaru4
1 Department of Surgery, Kyoto University, Kyoto, Japan, 2 Department of Surgery, Kyoto University, Kyoto, Japan, 3 Department of Surgery, Kyoto University, Kyoto, Japan, 4 Department of Surgery, Kyoto University, Kyoto, Japan (mizunoy5000@yahoo.co.jp)

Background: Podoplanin is a mucin-type glycoprotein and is known as a lymphatic endothelial marker. Immunostaining against podoplanin is currently a useful tool to detect lymphatic involvement of cancers, and is widely used in routine pathological diagnosis. However, we often observe the expression in cancer cells per se and fibroblastic mesenchymal cells.

Purpose: We examined the expression patterns of podoplanin in esophageal cancer, and investigated the association with clinicopathological data.

Method: Total of 26 esophageal cancer cases were selected from the pathology case archive of Kyoto University Hospital based on the diagnosis and the quality of the available tissue on the paraffin block. We investigated the podoplanin expression in 26 cases, using home-made monoclonal antibody, clone 7B10. The specificity and sensitivity of 7B10 were higher than commercially available D2-40.

Result: We observed the podoplanin expression in cancer cells and mesenchymal cells as well as lymphatic endothelial cells. As for the staining in the cancer cells, 13 samples (50%) were detected as positive for podoplanin. Among these 13 samples, 2 samples were detected only in the invasive front. 10 samples (38.5%) were stained in the mesenchymal cells. We classified 26 samples into several groups according to the expression pattern of podoplanin and investigated whether podoplanin expression was associated with clinicopathological data. However, we revealed no significant correlation between the expression and prognosis.

Conclusion: Although podoplanin is well known as the lymphatic marker, we here reported that it could be also expressed by cancer cells per se and mesenchymal cells. We recently reported that podoplanin expression in stroma is significantly associated with poorer prognosis in lung cancer. The cases investigated in this study may be few. Podoplanin could be an interesting tumor marker.

Dukes B colorectal cancer: are the right patients getting chemotherapy?

Mohamed Faheez1, Jha Madan2, Wilson Robert3
1 Department of Coloproctology, James Cook University Hospital, Marton Road, Middlesbrough, United Kingdom, 2 Department of Coloproctology, James Cook University Hospital, Marton Road, Middlesbrough, United Kingdom, 3 Department of Coloproctology, James Cook University Hospital, Marton Road, Middlesbrough, United Kingdom (faheez@btinternet.com)

Introduction: Treatment for colorectal cancer is dictated by stage. The role of adjuvant chemotherapy for Dukes B (T3 or T4 N0 (Stage II) patients remains unclear. The Colorectal Multidisciplinary Team (MDT) identifies patients from this group who may benefit from adjuvant chemotherapy. Our aim was to analyze outcome of Dukes B colorectal cancer patients treated at our institution.

Methods: All patients with Dukes B histology were selected from a prospectively collected database of all colorectal cancers resected between 1997 and 2007 at our institution. Data including demographics, CEPOD classification, site of tumour, histopathology and adjuvant treatment were analysed. Survival from date of operation was calculated using Kaplan–Meier estimates.

Results: Of 1098 patients who underwent colorectal cancer resections, 38% (414/1098) were staged as Dukes B (238 males and 176 females). Mean age at surgery was 71 years (range 37 to 97 years). Median follow up was 45 months. Resections were elective in 79% (328/414) of patients, and urgent or emergency in 21% (86/414). Tumours were colonic in 66% (275/414) of patients, and rectal in 34% (139/414). 25% (105/414) of patients received adjuvant chemotherapy. Overall median survival was 80 months with a 60% 5-year survival. Patients who received chemotherapy had a median survival of 81 months and 56% five year survival. This was equivalent to patients who received no chemotherapy (80 months median survival, 62% 5-year survival, p = 0.98).

Conclusion: Our colorectal MDT selection criteria appear to optimize survival in those Dukes B patients who would benefit while minimizing inappropriate use of chemotherapy.
Cardiovascular, Thoracic A116

Video-Assisted Thoracoscopic Surgery in Solitary Pulmonary Nodule

Mohbibi Hassan Ali, Mehrvarz Shaban, Fanaiye Seyed Ahmad

1 Baqiyatallah University of Medical Science, Department of Surgery and Trauma Research Center, Iran, 2 associate professor of general surgery, Baqiyatallah University of Medical Science, Department of Surgery, Iran, 3 associate professor of general surgery, Baqiyatallah University of Medical Science, Department of Surgery, Iran, (mohbibi@yahoo.co.in)

Introduction: A solitary pulmonary nodule (SPN) is a single, well-circumscribed, spherical and small lesion. A new solitary pulmonary nodule on chest radiography may be malignant. Chest CT scan and PET scanning are used but only a biopsy can definitively diagnose. Bronchoscopic or Transsthoracic biopsy can identify but Video-Assisted Thoracoscopic Surgery (VATS) is an accepted approach specially for peripheral and small lesions.

Method & materials: In this case-series study, patients with SPN and risk factors were admitted. They underwent VAST by double lumen orotracheal tube and video-assisted insertion. All of the SPN were resected by EndoGIA (45–3.5 mm) staplers.

Results: In five patients, all were male. Their ages were 46, 42, 30, 45 and 73 years and the size of nodules were 1.5, 2, 1.2, and 4 cm respectively. Resections were successful and complete; only one of them was malignant.

Conclusion: VATS in SPN is suitable, diagnostic and therapeutic approach.

Minimally invasive A117

Pulmonary Wedge Resections by Video-Assisted Thoracoscopic Surgery

Mohbibi Hassan Ali, Mehrvarz Shaban, Nasser Mohammad, Hassan

1 Baqiyatallah University of Medical Science, Department of Surgery and Trauma Research Center, Iran, 2 associate professor of Surgery-Department of Surgery-Baqiyatallah University of Medical Science, Tehran, IR, Iran, 3 assistant professor of cardiothoracic Surgery-Department of Surgery-Baqiyatallah University of Medical Science, Tehran, IR, Iran, 4 Medical Science, Tehran, IR, Iran (mohbibi@yahoo.co.in)

Introduction: Pulmonary wedge resections are necessary for definitive diagnosis in some situations. Video-Assisted Thoracoscopic Surgery (VATS) is suitable approach instead of open surgery.

Method: In a case-series study, patients who referred for Pulmonary Wedge Resection by pulmonologist were admitted. VAST performed by general anesthesia through simple orotracheal tube and via three incisions and ports. Wedges were resected by applying two EndoGIA (45–3.5 mm) staplers. The pleural cavity was drained with a chest tube. Postoperative pain assessed by Visual Analog Scale (VAS) up to 10.

Results: In 37 patients, 33(89%) were male. The mean age was 39 ± 8.3 years. Resections were 93% in right side with enough specimens. The most common morbidity was chest wall pain in 14 cases (9%) but the mean Visual Analog Scale was 2.39. Hemoptysis observed in 7 cases (19%). In 3 cases (8%); chest tubes were more than one day in places because of air leakage.

Conclusion: Pulmonary wedge resections are advised to do by VATS due to low morbidity, less pain and good result.

Plastic A118

Immediate postmastectomy reconstruction of the small breast: a five year retrospective study of a single surgeon’s experience

Molina Alexandra, Chiitumbo Chungeni, Malata Charles

1 Department of Plastic and Reconstructive Surgery, Addenbrooke’s University Hospital, Cambridge, UK, 2 University of Cambridge School of Clinical Medicine, 3 Department of Plastic and Reconstructive Surgery, Addenbrooke’s University Hospital, Cambridge, (khl31@cam.ac.uk)

Introduction: Reconstruction of the small breast poses a number of challenges to the plastic surgeon including lack of donor sites, thin soft tissue cover and limited implant choice. There is a paucity of literature addressing this frequently encountered scenario. The problem is further exacerbated in those patients who wish to avoid contralateral balancing breast augmentation. This paper highlights some of the practical problems presented by thin, small-breasted patients requesting immediate post-mastectomy breast reconstruction.

Patients & Methods: We retrospectively reviewed the experience of a single plastic surgeon in treating 20 patients with mastectomy weight of less than 350g (~25th centile) over a 5-year period at a large University Teaching Hospital. Data including BMI, breast size, mastectomy weight, co-morbidity, reconstruction type, complications and aesthetic outcome were collected. Pre- and post-operative medical photographs were reviewed and patients followed up in clinics.

Results: Twenty-four reconstructions were performed in 20 patients, incorporating 10 latissimus dorsi flaps (of which one was totally autologous), 8 implant-only reconstructions, 4 free and one pedicled abdominal tissue flaps, and a single superior gluteal artery perforator (SGAP) flap. Half of the study patients underwent surgery to the contralateral breast. The average mastectomy weight was 208 g (range 74g–342g). One free TRAM flap failed due to fulminant MRSA septicaemia, and salvage reconstruction was performed using an LD flap and expander. There were no other serious complications and all patients achieved satisfactory aesthetic results.

Discussion and Conclusion: Small breast women generally have low BMI and thus are good surgical candidates: post-operatively they are at relatively low risk of complications. However, any breast size mismatch is more noticeable and implants may produce obvious wrinkling and ridging due to poor soft tissue cover. The majority of these patients wish to avoid contralateral surgery which imposes further restrictions on the surgeon in the choice of reconstructive technique. Autologous flaps have traditionally been avoided in thinner women due to inadequacy of donor site tissue, but in fact often produce superior cosmetic results. We advocate tailoring the choice of reconstructive technique to the individual patient but have enjoyed success with the variety of methods discussed. Newer autologous flaps such as the inferior gluteal perforator flap and the transverse gracilis myocutaneous flap should be considered for thin small-breasted patients in view of the limitations of well-established techniques.

Plastic A119

Reverse abdominoplasty as a simple option for oncological truncal reconstruction

Mondal Debabrata, Kumiponjera Devor, Wishart Gordon, Malata Charles

1 Department of Plastic & Reconstructive Surgery, Addenbrooke’s University Hospital, Cambridge, UK, 2 Department of Plastic & Reconstructive Surgery, Addenbrooke’s University Hospital, Cambridge; United Kingdom, 3 Cambridge Breast Unit, Addenbrooke’s University Hospital, Cambridge, United Kingdom, 4 Department of Plastic & Reconstructive Surgery and Cambridge Breast Unit, Addenbrooke’s University Hospital, Cambridge, United Kingdom (debabrata.mondal@addenbrookes.nhs.uk)

Introduction: Central trunk reconstruction, following radical ablation of recurrent malignancy, poses a challenge because of unavailability of standard local flaps, their reach limitations and possible harbouring of subclinical disease.

This report presents two women reconstructed with reverse abdominoplasty flaps following full thickness resection of a recurrent lower chest wall angiosarcoma and upper abdominal wall metastatic adenocarcinoma.

Reports: A 65 year old female with multiple recurrences of a radiation-induced angiosarcoma of the right breast underwent four successive resections over a 3 year period. The resultant defects were variously reconstructed by direct closure, local advancement flaps, ipsilateral latissimus dorsi musclecutaneous (LD) flap, contralateral LD flap and finally reverse abdominoplasty. The last resection entailed full thickness anterior abdominal wall and xiphisternal resection necessitating the concomitant use of prosthetic mesh. The patient remains disease-free with a high Karnofsky performance status and an acceptable aesthetic appearance. A 47 year old woman with laparoscopic epigastric port-side recurrent carcinoma from previous cholecystectomy underwent...
full thickness resection of her anterior abdominal wall. The defect was unevenly reconstructed with a combination of a prosthetic mesh and a reverse abdominoplasty flap, without resorting to complex microsurgical free tissue transfers.

**Conclusion:** Upper central trunk malignancy ablation defects are difficult to reconstruct because of their particular anatomical location especially in the presence of recurrence or adjuvant radiotherapy. These case reports demonstrate that successful oncological reconstruction of the central trunk can be achieved in selected cases using a simple technique such as the reverse abdominoplasty flap, without resorting to complex microsurgical free tissue transfers.

### Gastrointestinal 1 A120

**Result of Biliointestinal Bypass in treatment of Morbid Obesity**

Mosavi Naieni Seyed Mortezai1, mehrvarz shaban2

1 Dept. of Surgery, Baqiyatallah University of Medical Sciences, Tebran, Iran, 2Dept. of Surgery, Baqiyatallah University of Medical Sciences, Tebran, Iran (mehrvarz@bmnu.ac.ir)

**Background:** There are a lot of surgical methods for treatment of morbidly obese patients. Biliointestinal Bypass (BIB) is a Bariatric surgery produces significant long term weight reduction by malabsorption in the gut. This operation is a modification of Jejunoileal bypass (JIB) with anastomosis of the proximal end of jejunum to the fundus of the gall bladder. In this study we evaluated the efficacy and complication of JIB in the treatment of morbid obesity.

**Method & Material:** The indication of surgery was BMI > 40 or BMI = 35–40 with co-morbid illness. In this prospective study, between Sep 2004 and March 2006, 23 patients (16 female and 7 male) with mean weight 125 ± 18 and body mass index 44 ± 5, underwent BIB surgery in khatam and Baqiyatallah(a.s) hospitals. At least 83% of patients complained one of the co-morbid illnesses due to excess weight like musculoskeletal problems, diabetes, cardio-pulmonary disease and ... After surgery the patients evaluated for weight reduction and other surgical and metabolic complications for average 16 months (11–24 mo).

**Results:** In the follow up period there was no significant adverse metabolic complication. None of the patients had DVT or PE and the mortality rate was zero. The average weight reduction after 6, 12, 18 and 24 months were 22.1, 34.5, 39.6 and 42.5 Kg, respectively. The average BMI after 6, 12, 18 and 24 months were 37.5, 33, 32 and 33, respectively. Diarrhea was the most frequent complication which observed within the 21% of the patients. Two (8-6%) Incisional hernia was observed because of postoperative wound infection. This study showed that amount of weight loss was significantly better in the men.

**Conclusion:** BIB is a simple and reversible method for the morbidly obese patients. Anastomosis of the proximal end of jejunum to the gall bladder eliminates the blind loop in JIB and maintains enterohepatic circulation of bile and prevents of bacterial overgrowth, renal calculi formation and hepatic failure. In comparison of the original technique using the slightly longer terminal ileum versus 20 Cm) and 20 Cm jejunum reduces metabolic side effects.

### Oncology 2 A121

**Influence of location and mitotic index on prognosis in patients with gastrointestinal stromal tumors**

Mrowiec Sławomir1, Jabłońska Beata2, Leidgens Marcin3, Pająk Jacek4, Lampie Paweł5

1 Department of Gastrointestinal Surgery, Silesian Medical University, Katowice, Poland, 2 Department of Gastrointestinal Surgery, Silesian Medical University, Katowice, Poland, 3 Department of General Surgery, Hospital dr Tytus Hahdusinski in Zakopane, 4 Department of Pathology, Silesian Medical University, Katowice, Poland, 5 Department of Gastrointestinal Surgery, Silesian Medical University, Katowice, Poland (jablonska@poczta.onet.pl)

Gastrointestinal stromal tumors (GIST) are a particular group of neoplasms originating from interstitial pacemaker cells of Cajal. The most useful prognosis factors are: tumor diameter, mitotic index, cell structure and location in the gastrointestinal tract. The aim of paper was to correlate two prognostic factors (location and mitotic index) with survival of patients operated for GIST. Between 1989 and 2002, 74 patients (37 men and 37 women) were operated for GIST in the Department of Gastrointestinal Surgery. The mean age was 54.9 (11–89). 2-years and 5-years survival was analyzed in operated patients. Two prognostic factors: location in the alimentary tract and mitotic index were analyzed. The location of GIST was following: in 1 (4%) patients -- in the lower oesophagus, in 42 (56.8%) patients -- in the stomach, in 4 (5.4%) patients -- in the duodenum, in 13 (17.6%) patients -- in the small intestine, in 12 (16.2%) patients -- in the large bowel. The most frequently (51%) mitotic index was 2–9/50 hpf considered as the intermediate malignant potential risk. Survival of 2 years was the most frequently noted in patients with GIST located in the oesophagus, stomach, duodenum – 34 (79%) patients. Lower rate of 2 years survival was noted in patients with GIST arising from the small intestine – 7 (63.6%) patients and from the colon and rectum – 4 (36.3%) patients. Survival of 5 years was also the most frequent in patients with GIST located in the upper part of gastrointestinal tract – 37.2%, in the median part of gastrointestinal tract – 16.3%, in the lower part of gastrointestinal tract - 27.7%. The results were analyzed statistically (p ≤ 0.05 was considered as significant). Correlation between location, mitotic index and survival of patients was assessed. The investigation showed statistically significant influence of tumor location in the gastrointestinal tract (p = 0.0264) and mitotic index (p = 0.0003) to survival of patients operated for GIST. The lower location and higher mitotic index of GIST are associated with shorter survival of patients.

**Minimally invasive A122**

**Fundus-first approach reduces the conversion rate in difficult laparoscopic cholecystectomies. Personal technique and preliminary results**

Nazari Shahräm1, Khosroushahi Semira2, Ziaee S. Ali3, Fanaei S. Ahmad3, Amini Ashin4, Sarie Hamid reza5

1 Erfan Hospital, Tebran, Iran, 2 Erfan Hospital, 3 Erfan Hospital, 4 Bagiyatallah Hospital, 5 Imam Hosain Hospital, 6 Erfan Hospital (donzarid@btsmed.com)

**Objectives:** Laparoscopic cholecystectomy (LC) is the ‘gold standard’ in surgical management of symptomatic cholecystolithiasis. Isolation of the cystic duct is the first dangerous technique in LCs. Nearly all of the laparoscopic surgeons are now popular with standard LC, in which dissection begins at Calot’s triangle. In conventional open cholecystectomy, the fundus-first dissection (FFD) is a well recognized safe procedure during difficult cholecystectomies because it minimizes the risks of damage to the structures in or around Calot’s triangle. In spite of this, FFD is not widely practiced in LCs.

**Methods:** The purpose of this study is to evaluate the facility of FFD in difficult LCs. The study included 500 patients treated over 25 months. The inclusion criterion was the presence of ultrasound proven gallstones. Patients were excluded from the study if there was evidence of common bile duct stones, or carcinoma of the gallbladder. The grave majority were difficult cases, so we also reviewed the safety aspects of this approach and evaluated whether the fundus-first technique can prevent conversion in difficult cases.

**Results:** The fundus-first approach was started in 35 patients; 30 procedures were completed laparoscopically. Five of the cases were further converted to open surgery. The mean operative time was 95–130 minutes (mean 112.5), which is significantly greater than conventional laparoscopic standard cholecystectomy (range 20–40 minutes, mean 30). Fundus-first laparoscopic cholecystectomy (FFLC) was performed without immediate or late complications.

**Conclusion:** FFLC appears to be a safe procedure, and has the potential to reduce the conversion rate in difficult cases and may decrease the risk of injury to bile ducts.

**Recommendation:** FFLC could be started in difficult LCs. The surgeon should have adequate laparoscopic experience. If in spite of FFD, the anatomy of Calot’s triangle is still obscure, he must convert to open exploration to prevent bile duct injuries.
Unusual observations, strange ideas A123

Gonadectomy and related hematological and hemorheological changes in the rat. A pilot study

Nemeth Norbert1, Kiss Ferenc2, Hever Timea3, Gulyas Adrienn4, Furka Istvan5, Mikó Irene6

1 Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary,
2 Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary,
3 Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary,
4 Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary,
5 Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary,
6 Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary,

Introduction: Pathophysiological gender differences of diseases (distribution, progression, therapy) became important nowadays. Previously, in a canine model gonadectomy and reverse hormone substitution were found to cause significant changes in hemorheological parameters. In recent rodent study we aimed to investigate the postoperative changes after gonadectomy, focusing on the determinants of deformability and aggregation properties of erythrocytes.

Methods: Twelve male and twelve female (in inter-estrus phase) outbred rats were anaesthetized. Three animals of both genders, respectively, were used as healthy controls. On the other animals, bilaterally, orchidectomy via incisions on scrotum and ovariectomy through a lower median laparotomy were performed, making careful ligatures of deferent duct/ureter tube and of testicular/ovarian vessels. The wounds were closed. In the 1st, 2nd and 3rd postoperative months 3–3 males and females were anaesthetized for blood sampling via cardiac puncture (exsanguination), Hematological parameters (Sysmex F-800 microcell-counter), fibrinogen concentration (Sysmex CA-500 coagulometer), blood-and plasma viscosity (Hewlett-40 viscosimeter), erythrocyte deformability (Carat FT-1 filtrimeter) and erythrocyte aggregation (Myrenne MA-1 aggregometer) were determined.

Results: In males leukocyte count markedly increased for 2nd, and decreased for 3rd month. Lymphocyte ratio increased in males, decreased in females. Platelet count of both genders showed slight elevation by the 1st month. In males hematocrit became lower, while in females mean corpuscular volume was larger by 10% in the 3rd month. Fibrinogen concentration and plasma viscosity increased in both genders. Blood viscosity increased in males, however the hematocrit/viscosity ratio lowered in females. Erythrocyte aggregation at zero shear-rate was markedly high in females, showing permanent elevation at low hematocrit/viscosity ratio.

Conclusions: Gonadectomy can variously affect the hematological and hemorheological parameters during postoperative months. Thus, supposedly the risk of microcirculatory changes may also alter after gonadectomy according to the hormonal changes. Grants: KPO 0147/2006 and OTKA F68523.

Transplantation, Organ preservation_2 A125

Upper GI lesions in hemodialyzed and renal transplant patients – endoscopic and histopathological evaluation

Ostrowski Krzysztof1, Kwiatkowski Artur2, Rowiński Wojciech3, Chmura Andrzej4

1 Department of General and Transplantation Surgery, Medical University, Warsaw, Poland, 2 Department of General and Transplantation Surgery, Warsaw Medical University, 3 Department of General and Transplantation Surgery, Warsaw Medical University, 4 Department of General and Transplantation Surgery, Warsaw Medical University

Introduction: In an era of minimal invasive surgery, endoscopic flap harvesting has not been widely accepted as the gold standard for harvesting muscles flaps, despite numerous benefits over the open technique. This is due to a lack of experience.

Materials and Methods: This study analyses three experimental flap models in pigs (gracilis, rectus abdominis, latissimus dorsi) comparing the endoscopic assisted technique with the open one in 23 trainees without extensive endoscopic experience, harvesting a total of 68 flaps. A brief presentations of the techniques used in the endoscopic models is given in contrast to the open models. Evaluation was based on the following criteria: total procedure time, complications, post-op recovery time, difficulty and learning curve.

Results: Endoscopic flap harvesting performed by trainees without extensive experience, still yields better results over the open technique and has major advantages such as minimal donor site morbidity and pain, less scarring and early recovery. The disadvantages include a longer procedure time, 2D vision and a longer learning curve. Mean operating time was significantly higher for the endoscopic procedure (120–210 min) compared to the open models (90–150 min). The recovery period ranged from 4h to 12h for the endoscopic assisted procedure versus 16h to 72h in the open procedure. The overall difficulty was not significantly higher for the endoscopic assisted model (1-26 out of 5) compared to the open one (2-42 out of 5).

Conclusions: Given the low complication rate and relative ease of harvest, 24 out of 26 trainees would apply the endoscopic technique in the clinic. We conclude that the endoscopic technique is currently the best way to harvest these types of flaps, despite being underrated by senior consultants.

Minimally invasive A124

Endoscopic assisted versus open free flap harvesting. A comparative study in pigs

Nistor Alexandru1, Blidisel Alexandru2, Jiga Lucian3, Hoinoiu Bogdan4, Ionac Mihai5

1 Victor Babes University of Medicine and Pharmacy Timisoara, Romania, 2 Victor Babes University of Medicine and Pharmacy Timisoara, 3 Victor Babes University of Medicine and Pharmacy Timisoara, 4 Victor Babes University of Medicine and Pharmacy Timisoara, 5 Victor Babes University of Medicine and Pharmacy Timisoara (alex@umft.ro)

Introduction: In an era of minimal invasive surgery, endoscopic flap harvesting has not been widely accepted as the gold standard for harvesting muscles flaps, despite numerous benefits over the open technique. This is due to a lack of experience.

Materials and Methods: This study analyses three experimental flap models in pigs (gracilis, rectus abdominis, latissimus dorsi) comparing the endoscopic assisted technique with the open one in 23 trainees without extensive endoscopic experience, harvesting a total of 68 flaps. A brief presentations of the techniques used in the endoscopic models is given in contrast to the open models. Evaluation was based on the following criteria: total procedure time, complications, post-op recovery time, difficulty and learning curve.

Results: Endoscopic flap harvesting performed by trainees without extensive experience, still yields better results over the open technique and has major advantages such as minimal donor site morbidity and pain, less scarring and early recovery. The disadvantages include a longer procedure time, 2D vision and a longer learning curve. Mean operating time was significantly higher for the endoscopic procedure (120–210 min) compared to the open models (90–150 min). The recovery period ranged from 4h to 12h for the endoscopic assisted procedure versus 16h to 72h in the open procedure. The overall difficulty was not significantly higher for the endoscopic assisted model (1-26 out of 5) compared to the open one (2-42 out of 5).

Conclusions: Given the low complication rate and relative ease of harvest, 24 out of 26 trainees would apply the endoscopic technique in the clinic. We conclude that the endoscopic technique is currently the best way to harvest these types of flaps, despite being underrated by senior consultants.

Transplantation, Organ preservation_2 A125

Upper GI lesions in hemodialyzed and renal transplant patients – endoscopic and histopathological evaluation

Ostrowski Krzysztof1, Kwiatkowski Artur2, Rowiński Wojciech3, Chmura Andrzej4

1 Department of General and Transplantation Surgery, Medical University, Warsaw, Poland, 2 Department of General and Transplantation Surgery, Warsaw Medical University, 3 Department of General and Transplantation Surgery, Warsaw Medical University, 4 Department of General and Transplantation Surgery, Warsaw Medical University

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Minimally invasive A124

Endoscopic assisted versus open free flap harvesting. A comparative study in pigs

Nistor Alexandru1, Blidisel Alexandru2, Jiga Lucian3, Hoinoiu Bogdan4, Ionac Mihai5

1 Victor Babes University of Medicine and Pharmacy Timisoara, Romania, 2 Victor Babes University of Medicine and Pharmacy Timisoara, 3 Victor Babes University of Medicine and Pharmacy Timisoara, 4 Victor Babes University of Medicine and Pharmacy Timisoara, 5 Victor Babes University of Medicine and Pharmacy Timisoara (alex@umft.ro)
Sepsis, Infection, Immunity_1 A126

Idiopathic liver abscesses
Otto Wlodzimierz1, Cieslak Bartosz2, Najgier Boguslaw2, Mackiewicz Anna3, Krawczyk Marek4
1 Medical University Warsaw, Poland; 2 A.M. Warszawa; 3 A.M. Warszawa; 4 A.M. Warszawa (mack@system.pl)

Idiopathic liver abscesses is the pathology of the liver arising without any apparent cause.

Aim of study: The aim was to evaluate the results of treatment applied to 128 patients (m.77, f.51, m.a.50) from 1998 to 2007, according to the prospective protocol. Material: Ultrasound abdomen and CT scans established the diagnosis of single abscess in 84 patients (65%), multiple abscesses in 30 patients (24%) and multiloculated abscesses in 14 patients (11%).

Method: The treatment included antibiotic therapy alone for the abscesses < 6cm in size (36 pts.), percutaneous aspiration for the single abscess > 6cm in size (48 pts.) and the open drainage and/or liver resection for multiloculated or multiple abscesses (44 pts.).

Results: Out of 36 patients treated with antibiotics alone 20 (55%) required percutaneous drainage; 8 of them (40%) required percutaneous aspiration but 9 (45%) required surgical drainage and 3 (5%) liver resection. Out of 48 patients treated with percutaneous aspiration 32 (66-6%) recovered but 16 (33-4%) required open drainage or liver resection; 9 (18%) of them developed complications and 4 (8.3%) died due to sepsis. Out of 44 patients treated initially with open drainage 8 (18%) developed complications; 3 of them (7%) required additional percutaneous aspiration and 5 (11%) surgical drainage. Three of them (6-8%) died due to sepsis. Cultures was positive for Staphylococcus, Enterococcus and Escherichia coli in 28%, 19%, 16%, respectively.

Conclusions: Antibiotic therapy, percutaneous aspiration and surgical drainage appeared to be the complementary methods of treatment. Results were dependent upon the advances of infection, abscesspeculiarities and surgeon experience.

Transplantation, Organ preservation_2 A127

Biliary complications following liver transplantation (ltx). Is that a laboratory or clinical problem?
Pacholczyk Marek1, Ligiewska Beata2, Adadyński Leszek3, Lisik Wojciech4, Wasiak Dariusz5, Chmura Andrzej6
1 Dept of General and Transplantation Surgery, Medical University, Warsaw, Poland; 2 Dept of General and Transplantation Surgery Warsaw Medical University; 3 Dept of General and Transplantation Surgery Warszaw Medical University; 4 Dept of General and Transplantation Surgery Warszaw Medical University; 5 Dept of Surgical and Transplantation Nursing Medical University of Warsaw; 6 Dept of General and Transplantation Surgery Warszaw Medical University (pacholczymk@interia.pl)

Biliary complications (BC) following LTx remain one of the major causes of postoperative morbidity and treatment failure. The list of most frequent BC consists of biliary stricture, fistula, ischemic type biliary lesions (ITBL), cholangitis and bile leakage following T-drain removal. Between 2000–2007 200 consecutive cadaveric LTx have been performed in our institution. All but 10 were the first, full size grafts. 18 patients were transplanted from the emergency reasons (MUC/UNOS 1), remaining 182 (91.4%) from elective (36 patients [19.8%] status 2 by UNOS). All but 7 patients had a standard cholecchcholedochostomy using straight drain drainage for 6 weeks. Routine bile cultures have been taken. Bile drain was removed after cholangiogram. All patients received antibiotic prophylaxis. Ursodeoxycholic acid was used in selected cases.

Results: During first 6 weeks positive bile cultures in absence of clinical and biochemical symptoms of cholangitis were found in 114(57%) cases. Symptomatic cholangitis requiring antibiotic treatment were observed in 22 patients(11%) during the first 6 months. Two patients required endoscopic sphincterotomy and temporary stenting due to anastomatic stricture (1) or papilla fibrosis (1). Bile leakage following drain removal was observed in 18 (9%) patients. 14 (7%) out of them were treated conservatively, and only remaining 4(2%) required surgery with lavage and/or stenting during procedure. In one case extra-hepatic bile ducts necrosis was diagnosed which required reconstruction of biliary anastomosis. No ITBL case has been observed or stricture requiring surgical repair. Bile leaks at the site of anastomosis was found in 2 recipients (1%) successfully treated endoscopically (sphincterotomy 1, stenting 1).

Conclusion: Despite the high incidence of positive bile culture related most likely to use of drain the overall number of BC was low-22 (11%). Most of these complications have been successfully treated conservatively(18-9%)and only 4 had a surgery with good outcome.

Orthopedic_1 A128

Avascular Necrosis of Multiple Large Joints secondary to Lymes arthritis-an unusual presentation
Paringe Vishal1, Thiru Madhu2, Siddiqi Najaf3, Shaikat S.O4
1 Department of trauma and orthopaedics, North Lincolnshire and Goole NHS trust, Scunthorpe General Hospital, UK; 2 Department of trauma and orthopaedics, North Lincolnshire and Goole NHS trust, Scunthorpe General Hospital, DN15 7BH United Kingdom; 3 Department of trauma and orthopaedics, North Lincolnshire and Goole NHS trust, Scunthorpe General Hospital, DN13 7BH United Kingdom; 4 Department of trauma and orthopaedics, North Lincolnshire and Goole NHS trust, Scunthorpe General Hospital, DN13 7BH United Kingdom, (vishalparinge@doctors.org.uk)

Lyme disease is caused by the spirochetal bacterium Borrelia burgdorferi transmitted by ticks of the Ixodes ricius complex. The primary stage is characterized by round rash called ‘Erythema migrans’ (EM), at the site of tick bite. The secondary stage involves musculoskeletal symptoms like migrating joint pains without obvious swelling. The tertiary stage characterized by intermittent attacks of monoarticular or oligoarticular arthritis, primarily in large joints. Avascular necrosis of multiple large joints secondary to Lyme disease has never been reported in literature as yet. We present a 36-year-old male patient with rapid onset of avascular necrosis of major joints, following Boreliiosis, referred to the clinic in Oct 2005, with progressively worsening pain in his hips, shoulders and knee joints. He was not diabetic or on immunosuppressive medications. In June 2002, while on holiday in Tenerife, he reported insect bites to this right hip region followed with severe pain in right hip region with both legs being weak, numb and he noticed a bulbus rash at the site of the bites and diagnosis was Lyme disease after noting antibodies to the disease and was treated with massive doses of antibiotics. He denied being treated with steroids. He was noted to have progressively worsening signs of avascular necrosis of hip and shoulder joints on plain radiographs. He underwent bilateral hip and shoulder arthroplasty and histology of the femoral confirming avascular necrosis. Most patients with Lyme arthritis respond to antibiotic therapy; however, in around 10% of patients the inflammation persists despite antibiotic therapy. The incidence of treatment-resistant Lyme arthritis is lower in children than in adults. In Europe, both B. burgdorferi and B. garinii can cause treatment resistant Lyme arthritis. The Centre for Disease Control and Prevention states that the diagnosis of Lyme disease is based on symptoms, physical findings and patient’s history and serology.

Wound healing A129

Current use of modified bacterial cellulose in reconstructive surgery
Pasieka Zbigniew MD, PhD1, Grobelbski Bartłomiej M.Sc.,2, Kowalska Karolina M.Sc.,3, Lawniczak Piotr MD,4
1 Experimental Surgery Unit of the Department of Endocrinology of the Medical University of Lodz, Poland; 2 Experimental Surgery Unit of the Department of Endocrinology of the Medical University of Lodz; 3 Experimental Surgery Unit of the Department of Endocrinology of the Medical University of Lodz; 4 Experimental Surgery Unit of the Department of Endocrinology of the Medical University of Lodz; (vogas.corporator@zpl.p.pl)

Today knowledge and materials availability significantly limit the possibilities of internal organs reconstruction. Currently applied polymeric substitutes
(silicones, gore-tex, collagen, plastics) are being rejected due to their physicochemical properties, immunogenicity, lack of vascularisation, and most often do not fulfill the role of replaced organ. On the other hand, autologous grafts make operation rather complicated. The problem concerns the reconstruction of such organs as trachea, peritoneum, as well as damaged peripheral nerves. Experimental Surgery Unit of the Department of Endocrinology of Medical University of Łódź in cooperation with Institute of Technical Biochemistry of the Technical University of Łódź proposes modified bacterial cellulose as a material for organs and tissues reconstruction. Physicochemical properties, susceptibility to vascularisation and high biocompatibility make this material perfect for such purpose. Latest studies showed that bio-cellulose, natural polymer produced by bacteria Acetobacter xylinum, is a highly biocompatible material. It has already found an application as a wound dressing. There are also experiments concerning its internal use as vessel substitutes and hernia meshes. Following specific modification process there is a possibility to produce cartilage-like substitute for trachea, auricular and nasal concha or even tubes for nerves regeneration. Obtained products are similar to natural tissue, with biocompatibility, mouldability, biophysical and chemical properties fitting the needs of reconstructive surgery. Current experiments performed in Experimental Surgery Unit concern microbial cellulose used for: trachea reconstruction, hernia meshes and neurotubes. Various surgical techniques, the choice of sutures and tissue glue, and different cellulose samples were tested on animal model. Best methods of implantation and most useful materials were estimated according to observation of animals after operation and histological analysis of explanted samples. Surgical stage is of an extreme importance for project target which is to produce cellulose material for clinical use. Presented results give new prospects for reconstructive surgery.

Cardiovascular, Thoracic, 2 A130

A model for oligonucleotide transfer in the vein graft wall under controlled non-distending pressure

Peroulis Michail1, Kakisis Ioannis2, Kapelouzou Alkistis3, Giaglis Stavros4, Macheras Anastasios3, Karatzas Gavriil6

1 Vascular surgeon in 3rd Department of Surgery, Athens University Medical School, Athens, Greece. Post doc in experimental surgery Foundation for Biomedical Research, Academy of Athens, Athens, Greece. 2 Lecturer of vascular surgery 3rd Department of Surgery, Athens University Medical School, Athens, Greece. 3 Assistant Professor 3rd Department of Surgery, Athens University Medical School, Athens, Greece. 4 Professor of Experimental Surgery, Athens University Medical School, Athens, Greece. (mpervul@gmail.com)

Peroulis Michail,1,2 Kakisis Ioannis,2 Kapelouzou Alkistis,1 Giaglis Stavros,1 Andreas Evangelos,1 Kostomitsopoulos Nikolaos,1 Macheras Anastasios,2 Karatzas Gavriil1 Foundation for Biomedical Research, Academy of Athens, Athens, Greece. 2 Department of Surgery, Athens University Medical School, Athens, Greece.

Introduction–Aim: The quest for a simple and low-cost method for the delivery and expression of genes in the living cell is the key for the development of gene therapy. The aim of our study was to test the effectiveness of eg–1 decay oligonucleotide (ODN) transfection into vein grafts using controlled non-distending pressure.

Materials–Methods: Three groups of five male New Zealand rabbits each were used for this study. The experimental animals were anaesthetized with ketamine and xylazine and intubated. A 2,5 cm segment of the external jugular vein was harvested, cannulated and inserted into an inelastic plastic sheath that was sealed at both ends. A 40 nMol ODN solution in normal saline was infused via the cannula to a pressure of 1 atm. In the first group, we delivered an eg–1 decay ODN, in the second group a mutant decay and in the third group a fluorescent-labeled ODN. After 20 min, the vein segment was thoroughly rinsed and anastomosed end to end to the carotid artery. The vein graft was removed along with a segment of the contralateral jugular vein 48 hours later.

Results: The histological structure of the vein graft was intact. Increase of immunofluorescence was confirmed by DAPI staining in the nucleuses of the vein graft cells, confirming the successful delivery of the ODN. Quantitative real time PCR revealed a 60% decrease of eg–1 gene expression (0.89 ± 0.11) in the animals in which eg–1 decay ODN was delivered compared to the control group.

Conclusion: Pressure-mediated transfection achieved nuclear localization of eg–1 decay ODN in jugular vein grafts, resulting in a 60% inhibition of target gene expression. The method is safe, quick and effective and may be exploited for the control of diseases in which eg–1 is implicated, such as atherosclerosis and intimal hyperplasia.

Sepsis, Infection, Immunity, 2 A131

The virulence of staphylococcus aureus and staphylococcus epidermidis strains isolated from patients with diabetic foot ulcers

Podbielska Ada1, Galkowska Hanna2, Stachyra Emilia3, Stelmach Ewa4, Olszewski Waldemar L.5, Łuczak, Rosinski G., Karnafel W.M6

1 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 2 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 3 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 4 Department of Microbiology, Medical University, Warsaw, Poland, 5 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 6 Department of Microbiology, Medical University, Warsaw, Poland (wkl@cmdik.pan.pl)

Pathogenicity of bacterial species is determined by their ability to produce virulence factors involved in colonization and invasion of host tissues i.e. adhesins, invasins, extracellular enzymes and toxins. We selected for S.aureus genes encoding bacterial surface proteins binding fibronectin (fnb-A), collagen (cna) and gene for exfoliatin A (eta) and for S.epidermidis genes encoding autolysin (atlE) and genes for polysaccharide intercellular adhesin production (icaAB, IS256). The aim of our study was to characterize S.aureus and S.epidermidis isolates obtained from ulcer curettage, skin biopsy from ulcer edge and from toe web surface of diabetic foot patients and from toe web of healthy volunteers. We analyzed S.aureus (n = 53) and S.epidermidis (n = 21) isolates. Strains were identified by using Chapman base, Slide Staph-kit and API STAPH test after overnight 37°C bacterial culture in BHI base. Genomic DNA was isolated using Roche High Pure Template Kit. Presence of genes were examined in PCR reaction with specific primers. PCR products were detected on 2% agarose gel electrophoresis and stained with ethidium bromide.

Results: Genetic profile of S.aureus strains yielded from ulcer curettage (n = 19): eta 47%, fnbA 79%, cna 84%; from skin biopsy (n = 18): eta 39%, fnbA 61%, cna 89%; from toe web surface (n = 18): eta 16%, fnbA 44%, cna 94%. Genetic profile of control S.aureus strains (n = 11) yielded from toe web surface of healthy volunteers: eta 9%, fnbA 0%, cna 9%. Genetic profile of S.epidermidis strains yielded from ulcer curettage (n = 5): atlE 100%, icaAB 100%, IS256 80%; from skin biopsy (n = 4): atlE 100%, icaAB 100%, IS256 100%; from toe web surface (n = 11): atlE 82%, icaAB 100%, IS256 48%.

Conclusions: The frequency of all studied genes for virulence factors in strains of S.aureus yielded from diabetic foot patients was higher than in control strains. Strains isolated from skin surface were characterized by a low frequency of gene eta compared with strains isolated from ulcer tissue. Investigation of virulence genes atlE and icaAB in S.epidermidis strains needs rather evaluation at the mRNA level, whereas the presence of insertion sequence IS256 can be carry out at the DNA level.

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Extremities A132

Vascular endothelial growth factor/VEGF in the development of critical limb

Proczka Robert Michal¹, Bialek Paweł², Malecki Maciej³, Chorostowska-Wynimko Joanna⁴, Polańska Małgorzata⁵, Polański Jerzy⁶

¹ 2-nd Department of General, Vascular and Oncological Surgery Medical university of Warsaw, ² 2nd Department of General, Vascular and Oncological Surgery Medical university of Warsaw, ³ Department of Cell Biology Maria-Skłodowska-Curie Memorial Institute, ⁴ Laboratory of Molecular Diagnostics National Institute of Tuberculosis and Lung Diseases, ⁵ 2-nd Department of General, Vascular and Oncological Surgery Medical university of Warsaw, ⁶ 2-nd Department of General, Vascular and Oncological Surgery Medical university of Warsaw

Introduction: Vascular endothelial growth factor/VEGF is the key cytokine responsible for spontaneous growing of collaterals in the ischemic muscle. However, in some patients, especially with critical ischemia, the physiological angiogenic response is not enough for maintaining the basic perfusion. On the other hand, the research of Carolinska Instytut, as well as of our own experience with patients requiring parenteral nutrition support, revealed that the plasma level of VEGF in the patients with critical limb ischemia is extremely high, but there is no expected biological response. We suspect that critical peripheral ischemia can be connected to or even result from abnormalities in the VEGF family.

Material and Methods: In the group of 35 patients with moderate or critical peripheral ischemia, we measured plasma level of vascular endothelial growth factor/using ELISA and specific antibodies. We measured also lipids level, CRP, the level of leukocytes hemoglobin erythrocytes, and platelets. During the surgical reconstruction or amputation we took a sample of artery in the femoro-popliteal level/mostly common femoral artery/to determine the VEGF-receptors level. We measured mRNA expression for VEGFR 1 and VEGFR 2 in the artery wall/using reverse transcriptase/

Results: In all patients that developed critical ischemia we noticed disorders in the lipids levels. We found also the VEGFR 1 and VEGFR 2 expression and VEGF interaction disorders.

Conclusion: Critical peripheral ischemia is connected with abnormalities in the VEGF family and its receptors.

Gastrointestinal I A134

The role of Matrix Metalloproteinases in the pathogenesis of Non-Alcoholic Fatty Liver Disease: an explorative study

Remmerswaal Ronald¹, van den Engel Sandra², Roest Henk³, de Bruin Ron⁴, IJzermans Jan⁵, Alwayn Ian⁶

¹ Department of Experimental Surgery, Erasmus Medical Center Rotterdam, The Netherlands, ² Department of Experimental Surgery, Erasmus Medical Center Rotterdam, The Netherlands, ³ Department of Experimental Surgery, Erasmus Medical Center Rotterdam, The Netherlands, ⁴ Department of Experimental Surgery, Erasmus Medical Center Rotterdam, The Netherlands, ⁵ Department of Experimental Surgery, Erasmus Medical Center Rotterdam, The Netherlands

Background/Aims: Non-alcoholic fatty liver disease (NAFLD) is considered to be the hepatic manifestation of the metabolic syndrome and accounts for at least four percent of patients on the liver transplant wait list. In search for a therapy for NAFLD, first the pathogenesis needs to be elucidated. The aim of our study is to assess the role of Matrix Metalloproteinases (MMPs) in the pathogenesis of NAFLD.

Methods: In C57BL/6 male mice NAFLD was induced by a methionine-choline deficient (MCD) diet. For fourteen days, mice were gavaged twice daily with 200mg/kg/day of a broad spectrum MMP-inhibitor (n = 7) or with vehiculum (n = 7). After sacrificing the animals, samples of urine and liver were collected. The grade of steatosis was assessed according to Brunt’s histology scoring system. MMPs were detected in urine with gelatinase zymography and in liver using in situ zymography. Genomic and proteomic analysis of liver-tissue was performed using PCR and Western Blotting respectively.

Results: Inhibition of MMPs prevents the development of NAFLD. Less MMP-activity was detectable in urine from MMP-inhibitor treated animals compared to vehiculum-treated animals. In fatty livers, in situ zymography showed higher concentrations of MMPs located around fat-droplets and in the nucleus. Genomic and proteomic analysis of liver-tissue revealed alterations in expression of peroxisome proliferator activated receptor-α (PPAR-α) and sterol regulatory element binding protein (SREBP-1c).

Conclusions: MMPs are closely involved in the development of hepatic steatosis. Inhibition of these enzymes significantly reduces the manifestation of NAFLD, as shown by histology and in situ zymography. PCR and Western Blotting suggests alterations in levels of fatty acid oxidation and fatty acid synthesis.

Transplantation, Organ preservation II A135

Sensitive forensic medicine methods allow to detect donor dna in recipient blood for years after kidney transplantation

Rutkowska Joanna¹, Interewicz Bożenna², Ginak Renata³, Rydzelewski Andrzej⁴, Świętek Marta¹, Dominik Aleksandra⁵

¹ Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warszaw, Poland, ² Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warszaw, Poland, ³ Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warszaw, Poland, ⁴ Department of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Warszaw, Poland, ⁵ Central Clinical Hospital, Ministry of Internal Affairs, Warszaw, Poland

Sepsis, Infection, Immunity II A133

Influence of parenteral nutrition on activity of N-acetyl-β-hexosaminidase

Raczkowska K¹, Snarska J², Grecz E³, Raczkowski K⁴, Szajda S⁵

¹ Department of Pharmacetical Biochemistry, Medical University of Białystok, Poland, ² 1st Department of General Surgery and Endocrinology, Medical University of Białystok, ³ Department of Anaesthesiology and Intensive Care, Medical University of Białystok (s1n2a3@poczta.onet.pl)

Parenteral nutrition (PN) is an effective method for supplying energy and nutrients via the intravenous route when oral and enteral feeding is impossible or contraindicated. Although PN is a life saving therapy, its use may be associated with serious complications. Parenteral nutrition-related metabolic complication have not yet been adequately defined and described. Laboratory monitoring is an important part of the assessment and management of patients requiring parenteral nutrition support. N-acetyl-β-hexosaminidase (HEX) is the most active lysosomal exoglycosidase participating in catabolism of glycoconjugates. HEX catalyzes removal of N-acetylgalactosamine residues from the non-reducing end of oligosaccharide chains of glycoconjugates. The aim of our study was to examine the effect of parenteral nutrition on the HEX activity in the blood serum. The blood serum samples were collected from 10 adult hospital patients: before receiving PN and 5 days after nutritional treatment. HEX activity (gKat/ml) was determined colorimetrically by the method of Zwierz et al. Statistical significance was established at p < 0.05. The preliminary results show significant decrease in HEX activity in blood serum of patients at fifth day PN in comparison to level of this enzyme before nutritional support (the mean concentration of HEX was 1.31 times lower). These data suggest elevation in the functional activity of lysosomal exoglycosidase under conditions of PN. It is confirmed that a 5-day infusion treatment of PN change metabolism of glycoconjugates.
After organ transplantation passenger cells and cellular debris from ischemia and rejection damaged cells disseminate in recipient and in most part are being taken up by macrophages and dendritic cells (DC). The most important question is whether donor DNA may be incorporated into recipient cell genome in the process of the so called “illegitimate DNA incorporation” a frequent phenomenon in nature. A subsequent question would be the presumptive effect of donor DNA on the rejection process.

**Aim:** To search for donor DNA in recipient tissues and cells after allogeneic transplantation and immunosupression. Materials. Recipient’s blood samples were collected before and after kidney transplantation 1, 14, 28, 90, 180, 360 and 720 days and genomic DNA was isolated using Nucleopin kit (macherey-Nagel). Quantification of DNA was performed in capillary cuvettes on GeneQuant (Amersham Pharmacia Biotech). The short tandem repeats analysis (STR) was applied. The investigated loci were: phospholipase A2-HUMPLA2A1(AAT)n, cystochrome P450 HUMCYAR0(AAAT)n and D1S80. This type of analysis is used in forensic medicine.

**Results:** Donor cytochrome P450 or HUMPLA2 or D1S80 genes were detected in recipient blood cells up to 2 years after kidney transplantation. Positive results were observed in all investigated patients, 24hr after grafting in 3 out of 5pts and in 4 out of 4 pts after 14 days, in 28 out of 28 after 28, in 2 out of 2after 90, in 3 after 180, in 1 after 1 and in 2 out of 2 after 2 years. All patients remain under further follow-up.

**Conclusions:** Donor DNA can be detected in recipient blood cells 2 years after kidney transplantation. The question as to whether the detected donor DNA was contained in the surviving donor cells or in a form of apoptotic or necrotic bodies in recipient phagocytes or was incorporated into recipient cell genome remains to be answered. The role of donor DNA in recipient cells in rejection or acceptance is not clear, although we know from animal experiments that it is detected in recipient dendritic APCs (antigen presenting cells). Most recent study documents presence of donor DNA in nuclei of recipient APCs. The comparison of clinical course of transplant and level of donor DNA have so far not been carried out because of a low number of patients.

Sepsis, Infection, Immunity_2 A136

**Effects of ringer lactate, HAES %10 and HAES %10 + dimethylsulphoxide on free oxygen radicals in haemorrhagic shock**

Sahin Mustafa1, Kafali Ertugrul2, Bayir Aysegül3, Ak Ahmet4

1 Selcuk University, Meram Medical Faculty, Konya, Turkey, 2 Selçuk University, Meram Medical Faculty, Konya, Turkey, 3 Selçuk University, Meram Medical Faculty, Konya, Turkey, 4 Selçuk University, Meram Medical Faculty, Konya, Turkey (sahinmu@hotmail.com)

**Background:** The aim of this study was to investigate the effects of antioxidant and resuscitation fluids which were used during haemorrhagic shock on tissue ischemia.

**Methods:** Forty New Zealand type rabbits were divided into four groups as C (control), R (Ringer Lactate), H (HAES) and D (Dimethylsulphoxide-DMSO) + H (HAES). Haemorrhagic shock was induced by bleeding from carotid artery. Thirty minutes after shock, Group C was not resuscitated while Group R was resuscitated with Ringer Lactate; Group H with 10% HAES and Group D with HAES 10% and DMSO. Thiobarbituric acid reactive substances (TBARS) and lactate levels in blood, liver and small bowel samples were measured.

**Results:** There were no significant differences among the groups tissue and plasma TBARS and lactate levels. Other side there were significant differences with D Group and other groups.

**Conclusion:** Resuscitation fluids do not have any superiorities over each other to prevent tissue ischemic insult in haemorrhagic shock. But and addition of antioxidants to the resuscitation fluids give us positively results.

Cardiovascular, Thoracic_2 A137

**Evaluation of plasma and pericardial ghrelin levels in patients undergoing cardiac**

Sax Balazs1, Nagy Andrea2, Turi Katalin1, Szabolcs Zoltan4, Cocek Karoly3, Kekesi Violetta6

1 Department of Cardiology, Semmelweis University, Budapest, Hungary, 2 Department of Cardiology, Semmelweis University, Budapest, Hungary, 3 Department of Cardiology, Semmelweis University, Budapest, Hungary, 4 Department of Cardiovascular Surgery, Semmelweis University, Budapest, Hungary, 5 Karothy Hospital, Budapest, Hungary, 6 Department of Cardiology, Semmelweis University, Budapest, Hungary (sas8@freemail.hu)

Ghrelin (GHR) is a newly discovered endocrine regulatory peptide which is mainly produced in the gastrointestinal tract. However, its production has recently been described in various tissues including the myocardium. The peptide was primarily known for releasing growth hormone and regulating food uptake, but remarkable cardioprotective and vasodilative effects have also been shown. Therefore, we aimed to characterize ghrelin concentrations in systemic (central venous plasma) and local (pericardial fluid, PF) samples of patients with ischemic (ISCH, n = 37, sex: (m/f): 28/9, age: 62+/-1 year, BMI: 28.7+/-0.6 kg/m2) and valvular heart disease (VHD, n = 13, sex: 5/8, age: 62+/-2 year, BMI: 25 6+/-1.2 kg/m2), and to investigate their correlation with certain metabolic and cardiac parameters. Plasma and PF samples were collected intraoperatively, active (acylated, A) and total (T) GHR concentrations and insulin levels were measured with RIA and ELISA methods. According to our results, both A-GHR and T-GHR concentrations were found to be higher in the VHD group (mean+/–SEM: 155+/-9 versus 127+/-4 and 850+/-26 versus 765+/-14 pg/ml, p < 0.05). However, the pericardial to plasma ratio of both A-GHR and T-GHR were significantly higher in the ISCH group (0.74+/-0.06 versus 1.04+/-0.06 and 0.94+/-0.02 versus 1.04+/-0.02, p < 0.01). In concordance with the literature, negative correlation was found between plasma T-GHR and BMI (r = -0.34, p = 0.01), and between plasma T-GHR and the carbohydrate metabolism index HOMA-A (r = -0.30, p = 0.03). Significant correlation was found between plasma A-GHR and right ventricular diameter (RVD) (r = 0.47, p = 0.008). Lower systemic GHR levels in the ISCH group is likely due to the higher BMI of these patients; however, the higher PF to plasma ratio of both GHR forms may refer to an increased local ghrelin production of the ischemic heart. The correlation of RVD and plasma A-GHR may reflect to a possible role of GHR in the regulation of the pulmonary vasculature.

Sepsis, Infection, Immunity_2 A136

**Erythropoietin inhibits postischemic leukocyte adhesion in allogeneically transplanted mouse hearts without affecting coronary microcirculatory dysfunction**

Schramm Rene1, Kirsch Sarah2, Schäfers Hans-Joachim3, Harder Yves4, Menger Michael-D5

1 Department of Thoracic and Cardiovascular Surgery, University of Saarland, Homburg/Saar, Germany, 2 Department of Clinical and Experimental Surgery, 3 Department of Thoracic and Cardiovascular Surgery, 4 Institute for Clinical and Experimental Surgery, 5 Institute for Clinical and Experimental Surgery (renecbremen@hotmail.com)

This study was meant to analyze the effect of erythropoietin (Epo) on microcirculatory dysfunction and inflammation in murine cardiac allografts. Balb C mouse hearts were transplanted into C57BL/6 mice after 3-hour cold ischemia. Epo was given i.p. in recipients at 2 hours before reperfusion (n = 6), while controls received saline only (n = 6). The subepicardial microcirculation was assessed by intravital fluorescence microscopy (IVM) at 1, 3 and 6 hours of reperfusion. In controls, subepicardial capillary blood flow velocities and functional capillary densities (FCD) decreased during

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reperfusion from 0.34 ± 0.04 mm/s and 351 ± 73 cm²/cm² to 0.30 ± 0.01 mm/s and 239 ± 41 cm²/cm², however not significantly. Capillary diameters and venular blood flow characteristics showed no significant changes over time, ranging between 4.5 and 5.5 μm as well as 0.76 and 0.96 mm/s. Epo treatment had no effect on coronary microhemodynamics. Postischemic inflammation was characterized by augmented microvascular leakage ranging between 71 and 99% throughout the entire observation period. This was comparable between controls and Epo-treated mice. During reperfusion, control allografts showed decreasing numbers of rolling leukocytes and increasing numbers of firmly attached leukocytes from 64 ± 16 cells/mm² and 238 ± 84 cells/mm² to 19 ± 16 cells/mm² and 479 ± 134 cells/mm² (p > 0.05). Capillary leukocyte plugging remained stationary over time in controls with 5.7 ± 0.4 cells/HIFP at 1 h and 5 ± 0.5 cells/HIFP at 6 h of reperfusion. Epo-treatment did not alter leukocyte rolling interactions. In contrast, firm leukocyte arrest in postcapillary venules was inhibited by Epo-treatment, resulting in 84 ± 34 cells/mm² at 6 h of reperfusion (p < 0.05). Epo-treatment also reduced capillary leukocyte plugging to 3.6 ± 0.3, 2.6 ± 0.3 and 3.0 ± 1.3 cells/HIFP at 1, 3 and 6 h of reperfusion (p < 0.05). These are the first data on microcirculatory dysfunction and inflammation in murine cardiac allografts assessed by IVM. We demonstrate that non-hematopoietic treatment with Epo exerts anti-inflammatory effects, reducing leukocyte-coronary endothelium adhesive interactions, without affecting microhemodynamics.

Transplantation, Organ preservation,1 A139

Preservation of kidney grafts with the Airdrive, a novel disposable system for oxygenated perfusion of kidney and liver grafts

Schreinemachers Marie-Claire JM1, Rooschot Benedict M2, Sittzia Mario1, van Gulik Thomas M4, Tolba Rene H3
1Department of Surgery, Surgical Laboratory, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands, 2Department of Surgery, Surgical Laboratory, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands, 3Department of Surgery, Surgical Laboratory, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands, 4House of Experimental Therapy, University Clinic of Bonn, Bonn, Germany

**Body:** Recently a disposable, low cost machine perfusion (MP) system for the preservation of kidney and liver grafts has been developed, named the Airdrive (AD). This air-pressure driven hypothermic perfusion system allows for oxygenated MP during the entire preservation period. The aim of the study was to assess MP preservation with the Airdrive using the low-viscosity perfusion solution, Polysol. As controls, kidney grafts were cold stored using the University of Wisconsin (UW) or Polysol solution (PS).

**Methods:** German Landrace pigs (18–32 kg) underwent left nephrectomy. The kidneys were thereafter flushed with either UW (n = 6) or PS (n = 6) followed by 20 hr of MP. Pulsatile perfusion was performed with a mean arterial pressure of 20 mmHg at a temperature of 2–6 ºC. After preservation all preserved kidneys were autotransplanted and the contralateral kidneys removed. Renal function was assessed daily. Seven days posttransplant, animals were sacrificed and the kidney grafts removed for histological analysis.

**Results:** All animals survived for 7 days. Overall, improved renal function compared to both HTK and PS CS groups (creatinine, area under the curve, p < 0.001 and p < 0.05, respectively). Four days after transplantation, serum creatinine and blood urea levels of PS AD preserved grafts were comparable to controls (p = 0.360). Peak-creatinine and peak-urea values were lower in both PS AD and PS CS preserved grafts compared to HTK CS. All PS AD and PS CS preserved grafts showed immediate function, as demonstrated by urine production directly after reperfusion as compared to only 1 graft in the HTK CS group.

**Conclusion:** Pulsatile perfusion of warm ischemically damaged porcine kidney grafts using the Airdrive MP system with Polysol resulted in improved preservation quality compared to CS using HTK or Polysol and even in complete functional recovery equal to the controls.

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**Transplantation, Organ preservation,1 A141**

Gaseous oxygen persufflation as a convenient alternative to hypothermic machine perfusion for the curative preservation of marginal/predamaged donor livers

Schuppis Andrea1, Thomas Thomas2
1Surgical Research Div., Univ. Hospital Bonn, Germany, 2Surgical Research Division University Clinic of Surgery Sigmund Freud Str. 25 D-53127 Bonn, Germany

**Background:** Recently the endoplasmic reticulum(ER) has been disclosed as subcellular target reactive to ischemia/reperfusion, and possibly enhanced by
hypothermic machine preservation. Here, the respective role of perifusate composition and/or the effect of continuous oxygenation to trigger ER-stress in the graft should be investigated.

**Methods:** Livers were retrieved 30min after cardiac arrest of male Wistar rats and preserved by cold storage (CS) for 18h at 4°C. Other organs were subjected to aerobic conditions either by oxygenated machine perfusion with HTK (MP-HTK) or Belzer solution (MP-Belzer) at 4°C or by venous insufflation of gaseous oxygen during cold storage (VSOP). Viability of livers was evaluated upon reperfusion in vitro according to previously validated techniques for 120 min at 37°C.

**Results:** Oxygenation during preservation (MP-HTK, MP-Belzer or VSOP) concordantly improved functional recovery ( bile flow, ammonia clearance) and reduced parenchymal enzyme leakage and histological signs of necrosis. However, MP with either medium produced about 500% elevated protein expression of CHOP/GADD153, suggesting pro-apoptotic ER-stress responses, paralleled by a significant elevation of enzyme activity of the ER-resident Caspase-12, compared to CS. Although MP also promoted a slight (20%) induction of the cytoprotective ER-protein BI-1, prevailing of proapoptotic reactions after ER-stress was suggested by increased cleavage of caspase-3 and PARP in both MP groups. By contrast, VSOP did neither promote induction of GADD153, BI-1 or caspase 12 activation nor result in cleavage of caspase 3 or PARP compared to CS.

**Conclusions:** ER-stress is conjectured a specific side effect of long-term oxygenated machine perfusion irrespective of the medium used and actually promotes cellular apoptosis, probably via activation of caspase-12. The simple insufflation of gaseous O2 may be considered a feasible alternative for long-term conditioning of marginal liver grafts, which is apparently indifferent to the endoplasmic reticulum.

Unusual observations, strange ideas A142

**Isolated primary breast tuberculosis - report of three cases**

Şen Meral1, görgüleoglu canan2, özel duygu3, bozer mikdat4

1 Fatih University School of Medicine, Department of General Surgery Ankara, Turkey, 2 Assistant Prof. Dr., Fatih University School of Medicine, Department of Dermatology Ankara, Turkey, 3 Associate Prof. Dr., Fatih University School of Medicine, Department of Pulmonology, Ankara, Turkey, 4 Associate Prof. Dr., Fatih University School of Medicine, Department of General Surgery Ankara, Turkey (dmeerali@yabos.com)

Tuberculosis (TB) continues to be an important reason of mortality and morbidity due to spread of HIV infection, increased number of multidrug resistant cases, absence of new, effective drug and vaccine. Sometimes TB cases present atypically and sometimes with predominant extrapulmonary manifestations that result in delays in diagnosis and treatment. Nearly 18% of TB cases have only extrapulmonary manifestations and incidence of breast TB, is less than 0.1% in western countries and 3–4% in developing world. As breast TB is a very rare disease, high level of suspicion is the corner stone for the diagnosis. Breast TB might mimic other diseases clinically and radiologically, so we would like to present these cases to mention that mammary tuberculosis should be included in the differential diagnosis of breast lesions like breast carcinoma, persistent breast abscess and infectious pattern with fistulizations, especially for patients from high risk populations and endemic regions. In this report we presented three patients with breast tuberculosis. All of our three female patients were in reproductive age and presented with multiple painful breast masses. In all cases, the diagnosis of breast TB was confirmed by histopathologic evaluation at the time of open surgical biopsy. Antituberculous chemotherapy with four drugs, initiated immediately upon diagnosis and cure had been obtained at the end of sixth month.

Plastic_2 A144

**Assessment of the influence of vomer flap surgery on maxillary growth in the infant cleft population**

Shah Amit1, Azzawi Khayam2, Ahmad Tarui3

1 University of Cambridge, UK, 2 University of Cambridge, 3 University of Cambridge (ar31298@hotmail.com)

**Background:** Vomer flap (VF) procedure is a controversial type of palatoplasty surgery that uses the mucoperiosteal tissue of the vomer to cover a cleft hard palate. The controversy is related to the argument that vomer flap surgery possibly interferes with mid-growth. However, there have been no studies to date documenting actual long-term growth problems. Moreover, the aetiology, if any, of this effect is not clear. Aim:-To study the influence of the vomer flap in primary repair of complete cleft lip and palate on maxillary growth using dental impressions.

**Methods:** A retrospective study, using an objective reproducible method of comparison, by way of dental impressions. All children included in the study had complete cleft lip and palate which was subsequently surgically repaired. Each child had two dental impressions, one pre- and one post-operatively. Each child was randomly assigned to one of two groups, those treated with the vomer flap procedure and those treated by alternative methods of surgical correction. Suitable comparisons were done using the Student’s t-test. The dental impression-interpturbosity distance, antero-posterior distance, depth, and cleft gap were taken.

**Results:** The only measurement that showed a significant difference between the two groups was the anteroposterior distance. Those children who had undergone the VF procedure had significantly shorter mid-facial lengths when compared to those children who had had alternative corrective surgery.
Conclusion: The vomer flap procedure could have an adverse affect on maxillary growth. Furthermore, this affect seems to be related to the orientation of the resultant scar.

Plastic,1 A145
An innovative technique of revision breast reconstruction with the pedicled latissimus dorsi flap
Shah Amir1, Azzawi Khayam2, Irwin Michael3
1 University of Cambridge, UK, 2 University of Cambridge, 3 University of Cambridge (as329@hotmail.com)

Breast reconstruction utilising the pedicled myocutaneous latissimus dorsi (LD) flap is a method of reconstruction acceptable to many patients. We present two cases of immediate breast reconstruction of a partial breast defect with an LD flap who subsequently required completion mastectomy and further reconstruction re-using the same flap. The revision breast reconstruction is described at the time of completion mastectomy with repositioning and medial advancement of the LD flap and expandable implant insertion. Advantages include utilisation of the same flap without recourse to further tissue harvest and an elegant means of reconstruction producing an aesthetic result whilst achieving the primary goal of tumour excision. We believe these two cases illustrate an innovative method of revision breast reconstruction for tumour recurrence.

Cardiovascular, Thoracic,1 A146
Early Carotid Endarterectomy for Critical Carotid Artery Stenosis After Thrombolysis Therapy in Acute Ischaemic Stroke
Siddiqi Tamim1, Parnaby Craig2, Muir Keith3, Stuart Wesley4
1 Southern General Hospital, Glasgow, UK, 2 Southern General Hospital, Glasgow, 3 Southern General Hospital, Glasgow, 4 Southern General Hospital, Glasgow (tamim.flabotmail.co.uk)

Objective: Recombinant tissue plasminogen activator (rt-PA) reduces rates of death and dependence when given within 3 hours of acute ischemic stroke. To date the Southern General Hospital Stroke Unit has treated 200 acute stroke patients with IV rt-PA. Following successful treatment, management of the underlying cause of stroke is required, including, occasionally, early carotid endarterectomy (CEA). There are potential areas of concern in these high risk patients, including risks of bleeding, loose embolic material at the carotid stenosis site render more fragile by rt-PA and the instability of the patients’ neurological state following acute stroke. We elected to examine our experience before continuing to offer early CEA. This paper describes 4 patients who underwent early (<96 hours) CEA for residual high-grade cervical carotid stenosis after thrombolysis therapy for acute ischaemic stroke.

Methods: Four patients underwent early (<96 hours) CEA for residual high-grade cervical carotid stenosis, after thrombolytic therapy for acute ischaemic stroke. These cases were reviewed to identify adverse events and potential contra-indications to early surgery.

Results: All 4 underwent successful CEA under local anaesthetic. One patient required intra-operative shunting. One patient required further surgery for bleeding from the anastomotic suture line. One patient was treated with intravenous dextran therapy and urgent CT angiography because of a single post operative transient ischaemic attack. At discharge, none of the patients had suffered a clinical deterioration of their neurological status.

Conclusion: We believe it is safe to perform early CEA (<96 hours) in patients treated with IV rt-PA for acute stroke. The major concerns regarding surgery in this group include increased risk of bleeding, increased chance of clot at the carotid stenosis site render more fragile by rt-PA and the instability of the patients’ cerebrovascular state post acute stroke. The benefit of CEA in reducing the risk of recurrent stroke or carotid occlusion in these patients outweighs the risk of complications from early surgery.

Hepatobiliary,2 A147
Hydrogen sulfide mediates the hepatic arterial buffer response in rats
Siebert Nikola1, Eipel Christian2, Vollmar Brigitte3
1 Institute for Experimental Surgery University of Rostock, Rostock, Germany, 2 Institute for Experimental Surgery University of Rostock, Rostock, Germany, 3 Institute for Experimental Surgery University of Rostock, Rostock (nikola.siebert@uni-rostock.de)

Background: Hepatic blood supply is uniquely regulated by the hepatic arterial buffer response (HABR), counteracting alterations of portal venous blood flow by flow changes of the hepatic artery. Most recently H2S has been recognized as a novel signalling molecule with vasoactive properties. The present study evaluated whether and to what extent H2S mediates the HABR.

Methods: In pentobarbital-anesthetized and laparotomized rats, flow probes around the portal vein and hepatic artery allowed for assessment of the portal venous (PVBF) and hepatic arterial blood flow (HABF). Standardized reduction of PVBF was induced via tourniquet of the A. mes. sup. In each animal, values for PVBF and HABF were assessed under both baseline conditions and stepwise tourniquet of the A. mes. sup. for induction of HABR. Three groups of animals were studied: (i) animals, which received a continuous infusion of the H2S donor Na2S (150 µmol/kg h iv, n = 7); (ii) animals, which received a bolus injection of DL-propargylglycine (PAG), i.e. an inhibitor of the H2S synthesizing enzyme cystathionine-γ-lyase (100 mg/kg iv, n = 9) followed by continuous infusion of saline and (iii) animals with continuous infusion of saline (control, n = 7).

Results: Under baseline conditions, HABF and PVBF averaged 2 ± 0.0 1 ml/min and 18.6 ± 1.1 ml/min without significant differences among animals of the three experimental groups. Na2S administration markedly increased the buffer capacity, i.e. the ratio of change in HABF and PVBF with a mean value of 22.2 ± 3.4%, when compared to the saline-treated controls (15.4 ± 2.3%). In contrast, blockade of H2S formation by application of PAG reduced the buffer capacity towards 8.1 ± 1.5%. In all three groups mean arterial blood pressure and heart rate remained unchanged throughout the experiments (range: 103–126 mmHg and 318–420/min).

Conclusion: Herein, we show for the first time that H2S contributes to the HABR and partly mediates the vasodilative response of the hepatic artery.

BJS A148
The effect of ischaemic postconditioning on the reperfusion injury in aorto-bifemoral bypass surgery
Smay Laszlo1, Arato Endre2, Masoud Shafiei3, Kollar Lajos4, Roth Erzsabet5, Jancso Gabor6
1 University of Pecs Medical School, Department of General and Vascular Surgery, Pecs, Hungary, 2 University of Pecs Medical School, Department of General and Vascular Surgery, 3 University of Pecs Medical School, Department of General and Vascular Surgery, 4 University of Pecs Medical School, Department of General and Vascular Surgery, 5 University of Pecs Medical School, Department of Surgical Research and Techniques, 6 University of Pecs Medical School, Department of Surgical Research and Techniques (smay@vpmail.hu)

Introduction: During aorto-bifemoral bypass (ABP) surgery due to cross-clamping of the aorta a mass of peripheral skeletal muscle is suffering from ischaemia-reperfusion injury (IRI). IRI induces oxidative stress and inflammatory response with leucocyte activation. Ischaemic postconditioning was described as very potent and simple method for reducing reperfusion injury in experimental cardiac model.

Aims: In our study we aimed to examine the protective effect of ischaemic postconditioning on IRI in aorto-bifemoral bypass surgery.

Materials and Methods: 20 patients, underwent an ABP surgery, were examined in prospective randomized study. Patients were divided in two groups. In 1st group (control) patients (10) underwent traditional ABP operation. In group 2 (10 patients), we made ischaemic postconditioning with a 60 sec re-clamping of the graft after the first 60 sec of reperfusion. Peripheral blood samples were collected in preoperative period, and after reperfusion in the 2nd and 24th hours, and on 7th day. For monitoring cellular oxidative stress plasma

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superoxide-dismutase (SOD) activity, reduced glutathione (GSH) concentration, and total thiol (SH) group concentration were measured. The degree of lipid peroxidation was marked with quantity of malondialdehyde (MDA). For characterization, inflammatory response plasma myeloperoxidase (MPO) level, leukocytes free radical production, and expressions of leukocyte adhesion molecules (CD18, CD11a) were measured.

**Results:** Our results showed a reduced oxidative stress in the early postoperative phase (2nd and 24th hour) with a smaller elevation of MDA ($p < 0.05$), and a less depletion of antioxidant systems (SOD, GSH, SH) in postconditioned group. Plasma MPO ($p < 0.05$), CD18 and CD11a levels were continuously lower ($p < 0.05$) in postconditioned group than in control.

**Conclusions:** Our results suggest that ischaemic postconditioning had protective effect against IRI in human aorto-bifemoral bypass surgery. Ischaemic postconditioning might be effective tool in vascular surgery for reducing the ischaemic reperfusion trauma. Supported by OTKA K67731, K48851, K60227 grants.

**Orthopedic 2 A149**

Four Strands Repair of FDP to Bone: A totally internal technique without a pull out suture: A cadaveric dissection study and bio-mechanical analysis of tendon to bone repair strength

Sinha Manish¹, Wearing Scott², Nico Aö³, Vijh Vik⁴

¹ Canniesburn Plastic Surgery Unit Glasgow, UK, ² wolfson bioengineering unit strathclyde university glasgow, ³ wolfson bioengineering unit strathclyde university glasgow, ⁴ selly oak hospital birmingham (drmanish@btstmail.com)

**Aims:** To describe the new technique of four strand repair of FDP tendon-to-bone, it’s cadaveric dissection study and biomechanical analysis of tendon-to-bone repair strength.

**Method:** The method is presented by photographs and a video. Ten cadaveric finger dissections were studied after repair. The tendon-to-bone repair was submitted to distraction on an Instron machine to determine the strength of the repair as compared to a four strand button tie-over repair in twenty fingers.

**Results:** Ten cadaveric fingers were repaired and assessed. All neurovascular bundles were found to be intact. The repair was assessed as ‘satisfactory’ in 6/10 and ‘anatomically accurate’ in 4/10. In 5/10 fingers, a branch of digital artery at the trifurcation was found to enter the pulp obliquely and all were intact. The detailed results of the strength of the repair are to be presented.

**Conclusion:** Totally internal tendon-to-bone repair with four or more strands is anatomically safe, causes no injury to the neurovascular bundles and yields a satisfactory repair. Biomechanical testing of repair strength is also presented.

**Orthopedic 2 A150**

Totally internal technique of re-attachment of FDP without a pull out suture: A cadaveric dissection study and bio-mechanical analysis of tendon to bone repair

Sinha Manish¹, Wearing Scott², Nico Aö³, Vijh Vik⁴

¹ Canniesburn Plastic Surgery Unit Glasgow, UK, ² wolfson bioengineering unit strathclyde university glasgow, ³ wolfson bioengineering unit strathclyde university glasgow, ⁴ selly oak hospital birmingham (drmanish@btstmail.com)

**Aims:** To describe the new technique of FDP reinsertion, it’s cadaveric dissection study and bio-mechanical analysis of tendon to bone repair strength.

**Method:** Ten cadaveric finger dissections were studied after repair. The tendon-to-bone repair was submitted to distraction on an Instron machine to determine the strength of the repair as compared to a button tie-over repair in twenty fingers.

**Results:** All neurovascular bundles were found to be intact. In 7/10 fingers, a branch of digital artery at the trifurcation was found to enter the pulp obliquely and all were intact. The repair was assessed as ‘anatomically accurate’ in 7/10 and satisfactory in 3/10. The detailed results of the strength of the repair are to be presented.

**Conclusion:** The new technique is anatomically safe, causes no injury to the neurovascular bundles and produces an anatomically correct totally internal tendon-to-bone repair. With no pull out sutures, repair is splinted during the collagen restructuring maintaining its tensile strength. Biomechanical testing of repair strength is also presented.

**Plastic 1 A151**

Adaptation of the Hall-Findlay’s technique for simultaneous contra-lateral reduction in delayed breast reconstruction with extended latissimus dorsi flap

Sinha Manish¹, longhi paolo², serra paola³

¹ Department of Plastic Surgery, Selly Oak Hospital, UK (drmanish@btstmail.com)

**Introduction:** In the past we have presented our independent results with Hall-Findlay’s technique. We now present our experience with adapting this technique for simultaneous contra-lateral breast-reduction in ELD flap breast-reconstruction.

**Method:** 23 consecutive patients underwent simultaneous contra-lateral balancing reduction. The modifications consisted of wider upper pole reduction with smaller thinner pedicle reducing the projection.

**Results:** All patients had a successful recovery no haematoma, infection or seroma. 2 patients (8.69%) wished further reduction and 1 (4.34%) required dog ear revision.

**Conclusion:** The technique combines the safety of the supra-medial pedicle with advantages of a vertical scar in a quick but safe manner ensuring adequate resection and sound healing with less scars and faster recovery for the patient. The modifications allow the reduction of the contra-lateral breast with a lower projection to match the ELD reconstruction. Superior aesthetic results are achieved with this approach because the corrected opposite breast becomes the model for the reconstruction rather than the corollary. We have found the modified technique to be reliable and versatile with a shorter operative and recovery time adding minimal morbidity of simultaneous contra-lateral reduction and effectively reducing the need of a delayed balancing reduction.

**Gastrointestinal 1 A152**

Apoptotic signaling pathways respond to preoperative enteral nutrition

Słotwiński Robert¹, Olszewski Waldemar L², Lech Gustaw³, Slodkowski Maciej⁴, Zaleska Marzanna⁵, Kędziora Sylwia⁶

¹ Dept. of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, ² Dept. of Immunology and Nutrition, Medical University, Warszawa, Poland, ³ Dept. of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warszawa, Poland, ⁴ Dept. of General, Gastrointestinal Surgery and Nutrition, Medical University, Warszawa, Poland, ⁵ Dept. of Conservative Dentistry Medical University, Warszawa, Poland, ⁶ Dept. of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warszawa, Poland.

**Introduction:** The present study examined the effect of enteral nutrition and major surgical trauma on the apoptotic signaling pathways (Bcl-2, Bax, caspase 3, 6, 9, NF, PARP 1, TNFR1/CD120a and CD95/Fas expressions assessed by Western blot and flow cytometry) of peripheral blood lymphocytes in pancreatic cancer patients. The prospective, randomized studies were performed in 29 patients with pancreatic cancer after pancreaticoduodenectomy with and without preoperative enteral standard or enteral immunonutrition. Ten healthy volunteers were subjected to the control group. Blood samples were collected before surgery and on day 1, 3, 7 thereafter. In the whole group of patients before and after surgery the expressions of Bcl-2, Bax and PARP were markedly higher as compared with NF, caspase 3, 6, 9 and TNFR1. Preoperative enteral immunonutrition increased Bcl-2, NFκB and decreased Bax or caspases (3, 6, 9) expressions after pancreatic surgery. In pancreatic cancer patients the preoperative percentage of CD95 + cells (CD95+ /CD3+ and CD95 + /CD3+ - subsets) was significantly higher (11.4 ± 9 versus 3.6 ± 2%, $p = 0.02$ and 55 ± 9 versus 41.6 ± 13.4, $p = 0.01$ respectively) in comparison with control group. There was a significant down-regulation of Bcl-2 expression on...
in venules were quantitatively assessed by 50% vessel diameter reduction and complete vessel occlusion (CVO) using intravital fluorescence microscopy. Animals received either a continuous intravenous infusion of a H2S-donor (Na2S; 15 μmol/kg/h; n = 7) or a single intravenous bolus of a H2S-inhibitor (propargylglycin (PAG); 100 mg/kg; n = 7). Control animals received equivalent volumes of physiologic saline (n = 10). Flow cytometry was used to evaluate the effect of H2S on TRAP (thrombin receptor activating peptide) -induced human platelet activation. In Na2S-pretreated animals venular thrombus formation was significantly delayed (CVO: 726 ± 66 s vs. 1900 s at 0.001) as compared to saline-controls (552 ± 24 s), while application of the H2S-inhibitor PAG significantly (p < 0.001) accelerated thrombus kinetics (346 ± 21 s) compared to both other groups. Moreover, persistent venular patency upon continuous equi-illumination was found in 50% of all vessels studied in Na2S-treated animals, while saline- and PAG-administration could not prevent vessel occlusion at all (0% patency). Concomitantly, bleeding time was markedly prolonged in Na2S-termed control and PAG-animals. TRAP-induced platelet P-selectin expression (70 ± 18%), as assessed by flow cytometry, was almost completely abolished by concomitant Na2S-exposure (8 ± 5%), whereas PAG slightly enhanced the fraction of P-selectin expressing platelets (72 ± 23%). Our results clearly demonstrate that H2S effectively prevents venular thrombus formation. This antithrombotic effect is associated with a downregulation of P-selectin expression on platelets. In summary, application of H2S-donors could represent a potential preventive strategy in diseases associated with thromboembolism.

**BRENDEL A155**

**Vitamin B6 as an effective chemopreventive agent against colorectal cancer – experimental study based on Azoxymethane induced carcinogenesis in F344 rats**

Spychalski Michal1, Dziki Łukasz2, Buczyński Jarosław1, Kulig Andrzej3, Sporny Stanisław4, Dziki Adam6

1 Department of General and Colorectal Surgery, Medical University of Lodz, Poland, 2 Department of General and Colorectal Surgery, Medical University of Lodz, Poland, 3 Department of General and Colorectal Surgery, Medical University of Lodz, Poland, 4 Department of Clinical Pathology of Polish Mother’s Memorial Hospital Research Institute, 5 Department of Dentist’s Pathology, Medical University of Lodz, 6 Department of General and Colorectal Surgery, Medical University of Lodz, Poland (nik@tou.net.pl)

Colorectal cancer (CRC) is still an unresolved problem of oncology. Apart from the constant improvements being made through the development of novel treatments, much attention has been paid to the chemoprevention of CRC. In our study we assessed vitamin B6 efficiency and mechanism of preventive activity against colorectal cancer. We compared its potential to well known chemopreventive agent – selective Cyclooxygenase-2 (COX-2) inhibitor – celecoxib. Materials: 70 male F344 rats were randomized into 6 groups. In groups 1 to 5 colorectal carcinogenesis was induced by 2 subcutaneous injections of Azoxymethane (20 mg/kg). Rats from group 1 and 2 were treated with vitamin B6 (respectively 0.3 and 0.7 mg/day). Rats from group 3 and 4 were treated with celecoxib (respectively 10 and 30 mg/day). After 26 weeks all the animals were sacrificed large intestines were removed and assessed. The total number of the premalignant lesions – Aberrant Crypt Foci (ACF) was counted. Additionally immunoexpression of COX-2, Vascular Endothelial Growth Factor (VEGF) and c-myc was assessed.

**Results:** Both celecoxib and vitamin B6 reduced the number of ACF. Median number of ACF per field of vision in groups treated with celecoxib was respectively 1.7 and 0.75. For vitamin B6 the results were respectively 1.42 and 1.5. The observed reduction was statistically significant, comparing to the control group (p < 0.001). Immunohistochemical studies: VEGF, COX-2 and c-myc immunoexpression indexes were increased in AOM treated rats. Celecoxib and vitamin B6 in lower dose reduced the VEGF immunoexpression. Celecoxib treatment did not influence COX-2 and c-myc immunoexpression. Vitamin B6 reduced COX-2 and c-myc immunoreactivity. The observed reduction was statistically significant (p < 0.001).

**Discussion:** To our knowledge our experiment is the first one, which directly compares chemopreventive potential of vitamin B6 and celecoxib.
We demonstrated that vitamin B6 is a potent chemopreventive agent with multi-directional activity against colorectal carcinogenesis.

Gastrointestinal A156

Sacral Nerve Stimulation (SNS): Is it a boon in chronic constipation (CC)?

Srinivasiah Narasimhaiah1, Waudby Phillip2, Duthie Graham3
1 Academic Surgical Unit Castle Hill Hospital, University of Hull, Cottingham, UK. (simba_ans@yahoo.com)

Introduction: Chronic constipation can be extremely difficult to treat affecting one’s QOL. SNS has been tried when other treatments have failed. However, reports of this procedure are limited, so we reviewed our experience in order to determine whether it is a worthwhile procedure.

Methods: Patients with chronic constipation who were referred for SNS between Aug 2005–Oct 2007 were identified. This study is a retrospective review of a prospectively maintained SNS-database with clinical-notes review.

Results: There were 12 female patients with chronic constipation who were referred to be considered for SNS. The mean age was 39 years with a median follow-up of 6 months (Range 1–16 months). Majority were idiopathic slow transit constipation, with 20% of them secondary to spinal traumatic neuropathy. Symptoms included one or more of abdominal discomfort, pain, bloating, lack of motivation, embarrassment and depression impacting on their QOL and making them socially isolated. The average frequency of bowel movements was 3–5/month assisted with enormous amounts of one or more of the following measures (laxatives, bulking agents, suppositories, enemas, biofeedback, rectal irrigation and antegrade continence enema). Out of the 12 patients who were referred for SNS, there were 96% temporary and 6% permanent procedures performed. 2/5 of them are awaiting a temporary SNS procedure. All the 6/50% who had permanent SNS have had success. There was failure in 1/8% following 2 temporary, refusal in 1/8% without trial SNS and return to normal bowel habit in 1/8% after a failed temporary. Assessment of the bowel diaries among successful patients, showed an improvement in bowel movements to once/day–3 times/week. They also demonstrated improvement in abdominal symptoms and QOL. One (8%) patient had pain on urination as a complication.

Conclusions: SNS for chronic constipation in our experience offers an option, when other treatments have failed.

Wound healing A157

Hyperbaric Oxygen For Chronic Anal Fissure – Long Term Outcome

Srinivasiah Narasimhaiah1, Cundall Jeremy2, Chapple Keith3, Duthie Graham4, Laden Graham5
1 Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham, UK, 2 Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham, UK, 3 Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham, UK, 4 Hyperbaric Unit, Classic Hospital, Anlaby, Hull, United Kingdom (simba_ans@yahoo.com)

Introduction: Optimal treatment of the patient with a chronic anal fissure (CAF) is unclear. Medical therapy has poor long-term outcome whilst surgery may have significant associated morbidity. We have previously shown, in a small pilot study, that hyperbaric oxygen (HBO) is an effective treatment for CAF. Since long-term outcome is unknown, we investigated a cohort of CAF patients at least 5 years after HBO therapy.

Methods: Patients with CAF who had failed both medical and surgical management underwent HBO therapy (fifteen 90 minute treatments of 100% oxygen at 2.4 atmospheres). Peri-anal symptoms were assessed at least 5 years after HBO therapy using a patient questionnaire.

Results: 8 patients (4 male, 4 female, median age 58 [range 27–82] years) were identified. Median symptom duration prior to HBO treatment was 2.5 (IQR 1.3–4.6) years. A single patient required further surgery (rotation flap) and another patient has occasional pain and bleeding. One patient died from unrelated causes. The remaining five patients have required no further treatment and are totally asymptomatic.

Conclusion: HBO therapy has long-term effectiveness in the treatment of CAF unresponsive to conventional therapy.

Sepsis, Infection, Immunity A158

Immunoregulatory disorders in patients with burn injury

Stankiewicz Wanda1, Dąbrowski Marek2, Witkowski Wojciech3, Szymański Paweł1, Feliga Marcin3, Maruszyński Marek4
1 Military Institute of Hygiene and Epidemiology, Warsaw, Poland, 2 Military Institute of Hygiene and Epidemiology, Warsaw, 3 Military Medical Institute, Warsaw, 4 Military Medical Institute, Warsaw, 5 Military Medical Institute, Warsaw, 6 Military Medical Institute, Warsaw (marus@poczta.fm)

Introduction: The assessment of functional efficiency of immune system in patients with burn injury may contribute for better understanding the pathomechanisms responsible for failed healing the wounds. The diagnostic procedure extended by immunological tests may also indicate how to improve the results of routine treatment of the patients.

The aim of the study: Determination of immunoregulatory and immunogenic properties of immune system in patients with burn injury.

Patients and methods: In the group of 12 patients with burn injury the immunological examinations were performed in the microculture system of mononuclear cells isolated from the blood (PBMC), comprising the estimations of: a) immunoregulatory ability and immunocompetence of T lymphocytes (response to PHA and Con A, saturation of IL-2 receptors, T cell suppressive activity – SAT index) b) immunogenic activity of monocytes (LM index reflecting the ratio of IL-1/IL-1ra, and production of chosen cytokines: IL-1b, IL-1ra, IL-10, TGF b), c) determination by flow cytometry the quantities of CD1, CD4, CD8, CD19, CD16/56 cellular phenotypes in PBMC population.

Results: The immunological examinations showed that in patients with burn injury the immun functional activity of T lymphocytes are deficient, the response of T cells to mitogens decreased, the ratio of TCD4/TCD8 is lowered and the production of IL-10 and TGFb decreased. In contrast to that, the immunogenic activity of monocytes was considerably exceeded (high LM value, deficit of the production of IL-1ra).

Conclusion: It can be suggested that introduction of appropriate immunocor rective therapy into the routine anti-infective and anti-inflammatory treatment may improve the therapeutic results in patients with burn injury.

Oncology A159

Is there a correlation between lymphangiogenetic potential and lymphangiogenesis in colon cancer

Stałeczny Marek1, Olszewski Waldemar L2, Gawrotowska Magdalena3, Rutkowska Joanna4, Cąkała Marta5, Maruszyński Marek6
1 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 2 Department of Surgery, Central Military Hospital, Warsaw, Warsaw, Poland, 3 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 4 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 5 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 6 Department of Surgery, Central Military Hospital, Warsaw, Warsaw, Poland (marus@poczta.fm)

Presence of lymphatics facilitate formation of cancer metastases. High level of permeability of tumor blood capillaries but not the putative cancer-produced VEGF C may be responsible for more lymphatics seen around cancer than in normal tissue. Are there morphologic and functional differences between newly
formed and pre-existing intra-or peritumoral lymphatics? The aim of our study was to visualize tissue space and initial and collecting lymphatics in and around gastric and colon cancer foci, and correlate their presence with expression of VEGF-C and VEGF-R2. Samples of human gastric and colon cancer and normal gastric and colon tissue, were obtained from 12 patients. Tissue samples were injected with Patent Blue in chloriform suspension to visualize interstitial space and lymphatic capillaries. Another fragment was sectioned and stained with monoclonal antibodies for CD68, CD3, elastase, LYVE1, Prox1, podoplanin, CD31, ICAM1, VCAM1. The number, topography and morphology of lymphatic vessels were evaluated in the peri-and intratumoral areas. Using real-time PCR we analyzed expression of VEGF-C and VEGF-R2, VEGF-R1 in the tumor and surrounding normal tissue. Specimens of gastric and colon cancer revealed presence of peri-tumoral but not intra-tumoral lymphatics. These vessels stained positively with mAbs against LYVE1 and CD31 but not Prox1, podoplanin, ICAM1 and VCAM1. In the intratumoral areas thousands of minute “lakes” could be visualized what is usually seen in tissues with lymphoedema. We speculate that increased production of lymph in the tumor tissue brings about dilatation but not lymphangiogenesis of peritumoral lymphatics.

**Wound healing A160**

**Radiation-induced tissue fibrosis**

Stene Christina1, Mihaescu Andrade2, Johnson Louis Banka3, Palmquist Ingrid4, Jeppsson Bengt5

1 Department of Surgery, Malmö University Hospital, Land University, Malmö, Sweden, 2 Department of Surgery, Malmö University Hospital, Land University, Malmö, Sweden, 3 Department of Surgery, Malmö University Hospital, Land University, Malmö, Sweden, 4 Department of Surgery, Malmö University Hospital, Lund University, Malmö, Sweden, 5 Department of Surgery, Malmö University Hospital, Lund University, Malmö, Sweden

**Introduction:** Radiation-induced normal tissue toxicity is a major contributor to long-term complications after rectal cancer treatment. Pathophysiologic mechanisms are not fully understood, but an excessive fibrotic reaction following excessive inflammation and activation of proteinases has been suggested. In this study we therefore studied MMP-9, inhibitors (TIMP), TGF-beta and fibrosis in rectal tissue in patients following short-term or long-term preoperative radiotherapy and rectal cancer surgery.

**Material and methods:** 46 patients with rectal cancer underwent preoperative radiotherapy, either 25 Gy during 1 week or 50 Gy during five weeks. 33 patients with rectal cancer situated above 15 cm without radiotherapy served as control. Tissue biopsies were taken from tumor and normal mucosa before and after radiotherapy for analysis of MMP-2, MMP-9 and TIMP-1, as well as serum for analysis of IL-6 and peritoneal tissue for analysis of TGF-beta.

**Results:** There were increased tissue levels of MMP-2 and consequently collagen degradation in rectal tissue in patients following short-term or long-term preoperative radiotherapy and rectal cancer surgery.

**Conclusion:** These alterations may be involved in the tissue remodeling that occur after radiotherapy leading to excessive deposition of collagen. Early intervention with inhibition of proteinases in patients undergoing radiotherapy may be one way of reducing the occurrence of excessive collagen deposition.

Orthopedic_A161

**Studies on inflammatory etiology of heterotopic ossification (HO) after total hip replacement**

Stolarczyk Artur1, Nagraba Lukasz2, Deszczynski Jaroslaw3, Mitek Tomasz4, Ploski Rafal5

1 Dept. Orthop. & Rehab., Medical University, Warsaw, Poland, 2 Dept. Clin. Rehab., Medical University, Warsaw, Poland, 3 Dept. Orthop. & Rehab., Medical University, Warsaw, Poland, 4 Dept. Orthop. & Rehab., Medical University, Warsaw, Poland, 5 Dept. of Clinical Genetics, Warsaw Medical University of, Poland

**Background:** HO is a frequent complication following a major orthopedic surgery such as total hip arthroplasty. The inflammatory etiology of HO is supported by a recent report of association of this condition with HLA-A*02 and B*18. Our purpose was to study the distribution of HLA class I (A and B) and class II (DRB1) alleles among Polish patients with and without HO who underwent THR. DNA was isolated from peripheral blood and HLA typing was performed using the PCR-SSP kit (One Lambda). Distribution of selected HLA alleles I studied groups is shown in Table. We observed a strong association between HO and advanced age (mean age 72.6 y versus 64.6 y, among those with versus without HO, respectively, p = 0.0001) and male sex (74.6% versus 21.6%, respectively, p = 0.0004) whereas we could not confirm the association between HO and A*02 and B*18. However, we observed that DRB1*01 might have a protective role since it showed a trend for a decrease among patients with HO versus those without HO (Table). Interestingly, we noted that the decrease of DRB1*01 was particularly pronounced among older (> 70 years) patients (Table). We conclude, that HLA genotype may have a role in HO but further studies on larger cohorts of patients are indicated.
Sepsis, Infection, Immunity_A163
Fungal infections in patients hospitalized in Intensive Medical Care Unit

Swoboda-Kopec Ewa1, Blachnio Sylwia2, Sudík-Tyżka Beata1, Stelmach Ewa1, Kanski Andrzej1, Łuczań Miroslaw8
1 Microbiological Laboratory of Central Clinical Hospital Medical University of Warsaw, Poland, 2Microbiological Laboratory of Central Clinical Hospital Medical University of Warsaw, 3Microbiological Laboratory of Central Clinical Hospital Medical University of Warsaw, 4Microbiological Laboratory of Central Clinical Hospital Medical University of Warsaw, 5Dept. of Critical and Intensive Care Central Clinical Hospital Medical University of Warsaw, 6Microbiological Laboratory of Central Clinical Hospital Medical University of Warsaw (akawezek@o2.pl)

Introduction: Fungal infections in patients hospitalized in Intensive Medical Care Unit are a serious clinical problems.

Aim of study: In our study we analyzed the occurrence of fungal strains and their susceptibility to antifungal agents in samples of clinical material taken from patients hospitalized in Intensive Medical Care Unit of Central Clinical Hospital in Warsaw in 2007.

Material and methods: In total 1697 samples of clinical materials from hospitalized patients were tested in Micological Laboratory. From Intensive Care Unit the most common clinical specimens were taken from respiratory tract – 22 (10%), digestive tract (stool) – 15 (21%), urine samples – 14 (19%), blood – 13 (18%), wound swabs – 5 (7%) and other – 4 (5%). Specimens were cultured on Saboraud medium plates supplemented with gantamicine and chloramphenicol (Becton Dickinson). Isolated strains were identified using CHROMagar Candida agar and automatic test ID32 C (bioMerieux). Susceptibility tests were done with E-tests (AB Biodisc) for Amphotericin B, Flucnazole, Itroconazole and Voriconazole. Results In total number of 1697 micological examination, 73 samples (4,3%) were positive. We cultured 88 of fungal strains. 86 (97,7%) of them were yeastlike fungi and 2 were moulds (2,3%). Yeastlike fungi isolated from clinical materials belonged to ten species: C. albicans – 41 (47,6%), C. glabrata – 16 (18,6%), C. tropicalis – 11 (12,8%) and C. parapsilosis – 9 (10,5%), other – 9 (10,5%). The isolated moulds 2 strains (2,3%) were Aspergillus niger and Aspergillus fumigatus. We cultured and C. parapsilosis – 9 (10,5%), other – 9 (10,5%). The isolated moulds 2 strains (2,3%) were Aspergillus niger and Aspergillus fumigatus. We cultured and C. parapsilosis – 9 (10,5%), other – 9 (10,5%).

Results: In the group N 73 samples (4,3%) were positive. We cultured 88 of fungal strains. 86 (97,7%) of them were yeastlike fungi and 2 were moulds (2,3%). Yeastlike fungi isolated from clinical materials belonged to ten species: C. albicans – 41 (47,6%), C. glabrata – 16 (18,6%), C. tropicalis – 11 (12,8%) and C. parapsilosis – 9 (10,5%), other – 9 (10,5%). The isolated moulds 2 strains (2,3%) were Aspergillus niger and Aspergillus fumigatus. We cultured and C. parapsilosis – 9 (10,5%), other – 9 (10,5%). The isolated moulds 2 strains (2,3%) were Aspergillus niger and Aspergillus fumigatus. We cultured and C. parapsilosis – 9 (10,5%), other – 9 (10,5%).

Conclusion: C. albicans species was dominated pathogen cultured from clinical materials.

Conclusions: The immunological examinations indicated that the patients with renal cancer demonstrate both quantitative (ratio of TCD4/TCD8) and functional immunoregulatory deficits of T lymphocytes (lower than normal values of SAT, IL-2 receptor saturation and, partially, lower response to mitogens) Embolization of the renal artery (ERA) introduces strong immunostimulatory element In these patients, increasing immunogenic activity of monocytes and improving the parameters characterizing the immunological competence of T lymphocytes. The observed immunotrophic effects of ERA in patients with renal cancer can be estimated as a valuable therapeutic element, beneficial for the further course of the disease.

Unusual observations, strange ideas A165
Hospital acquired pneumonia risk factor in surgical ICU patients

Szczepanik Antoni1, Kubisz Aldona2, Kruszyńska Tomasz3, Kulig Jan4
1 1st Department of Surgery, Jagiellonian University, Medical College, Krakow, Poland, 2 1st Department of Surgery and Institute of Physiotherapy, Jagiellonian University Medical College, Krakow, Poland, 3 1st Department of Surgery, Jagiellonian University, Medical College, Krakow, Poland, 4 1st Department of Surgery, Jagiellonian University, Medical College, Krakow. Poland (antoszezp@poczta.onet.pl)

Objective: Hospital acquired pneumonia (HAP) remains the leading infection in ICU patients and contributes significantly to overall morbidity and mortality. The purpose of this study was to identify the risk factors for hospital-acquired pneumonia in surgical ICU patients and to stratify them based on their prognostic significance.

Patients: In all, 233 consecutive patients admitted to the ICU of the 1st Department of General and Gastrointestinal Surgery, Jagiellonian University Medical College, between May 2003 and April 2004 were eligible for participation.

Intervention: The cohort was divided into two groups. The study group included 92 ICU patients who developed HAP while in ICU. The control group...
group consisted of 141 ICU patients without HAP. In both groups the following risk factors for HAP were analysed: demographic data (age, sex); nutritional status with BMI as a surrogate marker; neoplastic versus non-neoplastic primary disease; type of intervention (endoscopic versus surgical); duration of ICU stay, duration of artificial ventilation, the presence of a gastrointestinal tube, accompanying systemic and localized infections as well as blood glucose control.

Education A166

Computed assessment of coordination skills in surgical staff and medical students – Is this a valuable tool?

Szczepaniak Antoni1, Spieszny Michał2, Szczepaniak Maciej3, Kubisz Aldona4, Klociek Tomasz5

1 1st Department of Surgery, Jagiellonian University, Medical College, Krakow, Poland, 2 Department of Theory and Methodology of the Team Games, Academy of Physical Education, Krakow, Poland, 3 Department of Theory and Methodology of the Team Games, Academy of Physical Education, Krakow, Poland, 4 1st Department of Surgery, Jagiellonian University, Medical College, Krakow, Poland, 5 Department of Theory and Methodology of the Team Games, Academy of Physical Education, Krakow, Poland

Coordination skills belong to the most important elements of human motoric ability. These skills influence the quality and results of sport performance and some professions. In numerous situations coordination skills limit the effectiveness of motoric processes. Surgery is the area in which the final result of procedures depends on the combination of knowledge, concentration and motoric ability. The implementation of new techniques such as surgical endoscopy, laparoscopy, imaging-guided surgery requires new type of coordination skills in comparison to open surgery. Therefore proper training of surgical residents is the key to safe and effective surgery. The new branch of training is based on sophisticated computerized simulators, however the final training must take place on the patient site. The aim of this study was to assess several coordination skill in surgical staff and medical students. The results between the group of residents, fully trained surgeons, and medical students were compared. All subjects (9 residents, 7 fully trained surgeons, and 20 medical students) were tested using the standard computerized protocol. The test was divided into 5 parts:–simple eye-hand reaction, combined eye-hand reaction, Piorkowski aptitude test, concentration – diversity test and orientation-perception test. The mean ratios of the results (+/- SD) were calculated for each tests.

Results: The level of coordination measured by each of the tests was in the upper 1/2 of the general population results. The simpler the test was, the results of residents tend to be higher than fully trained surgeons. Medical students results were more diffused. The group of older surgeons achieved significantly better results in most complicated orientation-perception test. The results showed that simple coordination tests probably correlate with the age, but more complicated skills are higher in more advanced group. The overall coordination skills may be the marker of predisposition for surgical profession.

Unusual observations, strange ideas A167

Bacteriology of callus of closed fractures of tibia and femur

Szczepany Grzegory1, Interewicz Bożenna2, Swohoda-Kopeć Ewa3, Olszewski Waldemar Ł4, Gorecki Andrzej5, Wasilewski Piotr6


More than 1% of closed fractures of lower limbs and 6% of implanted materials are complicated by inflammation despite all efforts to avoid infection. The question arises whether this clinical complication is not caused by bacteria dwelling in limb tissues. Skin, subcutaneous fat, muscle and fracture gap callus were obtained from 71 adult patients operated on due to closed comminuted fractures of tibia or femur, 28 because of non-alignment of bone axis and 43 due to delayed fracture healing. Aerobic bacteria were isolated from gap callus of 14% healing and 35% non-healing fractures. No isolates were found in subcutis and only in 3% in muscles. No anaerobic bacteria were detected. PCR amplifications of 16s rRNA were found positive in 42% of callus specimens proving presence of bacterial DNA even when no isolates were found. The 95% similarity of the genetic pattern of some strains from foot skin and callus, estimated with RAPD technique, suggested their foot skin origin. Taken together, the colonizing bacterial cells and their DNA were detected in fracture callus but not other deep tissues. Contamination was precluded by lack of isolates in disinfected cuts, subcutis, muscles and materials used for sampling cultured after surgery. We suggest that certain strains of bacteria dwell in normal tissues of lower limbs and may cause inflammation upon stimulation by trauma. Their source may be tissue fluid, superficial and deep lymphatics, and lymph serving the physiological transport to the regional lymph nodes of microorganisms penetrating foot skin during microinjuries.

Extremities A168

Immune response of the limb lymphatic system to trauma

Szczęsny Grzegorz1


Mechanical injuries of the lower extremity evoke changes in local immune system. In our previously reported lymphoscintigraphic (LSG) studies closed fractures of lower limbs caused dilatation of lymphatics (Ly) draining the site of fracture and enlargement of inguinal lymph nodes (LN). In contrast, in long-lasting non-healing fractures draining Ly became obliterated and the LNs disappeared. Aim. The aim of study was to compare immunohistochemical pictures of the uneventfully healing and non-healing fracture gap specimens with limb LSG pictures.

Methods: Observations were performed in 38 patients (group A. uneventfully healing n = 10, and group B. delayed healing, n = 28) with closed fracture of tibia without traumatic skin changes. In each patient LSG of lower extremities was performed and tissue specimens from fracture gaps were taken during operation.

Results: Group A. LSG showed enlargement of regional LNs and dilated Ly, which coincided with histological pictures of immune cell infiltrates and foci of ossification. Group B. Non-healing fractures revealed lack of cellular reaction in the fracture gap and concomitant decrease of Ly and LN mass.

Conclusions: We suggest a functional link between the healing bone fracture and surrounding soft tissue wound with the response of the regional immune system. Active response of the regional lymph nodes seems to correlate with healing of fracture, whereas, depletion of lymphoid tissue is either cause or effect of the prolonged non-healing process.

Extremities A169

Evaluation of clinical effectiveness of two-and four-layer compression in venous leg ulcer treatment—randomized study

Szczyzczkowski Maria T1, Jawien Arkadiusz2, Moscienna Paulina3, Czerniakowska Katarzyna4, Cwiada Justyna5

1 Srginal Nursing Department Collegium Medicum UMK Bydgoszcz, Poland, 2 Department of Surgery Collegium Medicum UMK Bydgoszcz, Poland, 3 Surgical Nursing Department Collegium Medicum UMK Bydgoszcz, Poland, 4 Surgical Nursing Department Collegium Medicum UMK Bydgoszcz, Poland, 5 Surgical Nursing Department Collegium Medicum UMK Bydgoszcz, Poland 

The aim of the study was to assess clinical effectiveness and dynamics of venous leg ulcer healing after applying two- or four-layer compression.

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Material and methods: The study was performed between 2000 and 2005 among 112 patients with 121 venous ulcers treated in Venous Ulcers Outpatient Clinic, Bzziel Memorial Hospital in Bydgoszcz. Patients were randomized to two groups treated with two- and four-layer systems. The treatment program included holistic assessment, high multilayer compression and additional activities. Healing dynamics were assessed by planimetry. Maximal time of observation was 48 weeks.

Results: In primary statistical analysis cumulative healing rate showed significant predominance of two-layer system (p = 0.007, log-rank test) but after reaching randomization balance in terms of starting surface of venous ulcer the difference among them was not found. (p = 0.249, log-rank test). Values of Kaplan-Meier test showed that among patients with medium and high degree of physical activity, the probability of higher healing rate was found in the group of patients with two-layer system (p = 0.089, log-rank test).

Conclusions: Systematic multilayer compression with initial pressure of 40 mmHg is an effective method in treating conservatively the venous leg ulcers. Two- and four-layer systems have similar clinical effectiveness but healing rate in two-layer system increases with the increased patient’s physical activity.

Cardiovascular, Thoracic A170

Endovascular treatment of posttraumatic aortic lesions

Szmidi Jacek1, Rowinski Olgierd2, Galzka Zhbigniew3, Jakimowicz Tomasz4, Grygiel Katarzyna5, Solonyko Bohdan6

1 Department of General, Vascular and Transplant Surgery Medical University of Warsaw, Poland, 2 Second Department of Radiology Medical University of Warsaw, Poland, 3 Department of General, Vascular and Transplant Surgery Medical University of Warsaw, Poland, 4 Department of General, Vascular and Transplant Surgery Medical University of Warsaw, Poland, 5 Department of General, Vascular and Transplant Surgery Medical University of Warsaw, Poland, 6 Department of General, Vascular and Transplant Surgery Medical University of Warsaw, Poland

Traumatic aortic rupture can be the reason of sudden symptoms or, when limiting, can be responsible for long-lasting, asymptomatic pseudoaneurysm. In the acute cases, but also in persistent ones open surgery is a procedure limiting, can be responsible for long-lasting, asymptomatic pseudoaneurysm. The diagnosis might be not straightforward and one should not forget basic activities. Imaging studies among others should include lymphoscintygraphy, ultrasound examination, magnetic resonance imaging (or CT scan), occasionally arteriography or phlebography. In our Department between June 2002 and February 2008 endovascular repair of posttraumatic descending thoracic injury was performed in 20 patients. The group consisted of 17 males and 3 female aged between 16 and 54 years. In 18 cases the trauma was a result of an automobile accident and in two cases a fall from a height. Eleven patient were admitted directly after the accident with multi-organ trauma and shock. The remaining patients were admitted after a varying amount of time after injury due to pseudoaneurysm presence. Initial diagnosis in these patients was made during routine chest x-ray examination or echocardiogram. Pre-operative assessment consisted of spiral computed tomography and in 4 cases preoperative angiography. In 19 cases thoracic lesion was placed below the ostium of the left subclavian artery. All patients underwent endovascular repair using straight tube commercial stentgrafts – Zenith (13), Talent (6) and Relay (1). The procedure was conducted under regional epidural anaesthesia except two cases with local and two with general. Upon completion we performed surgical or neurological exploration. Mean follow-up of 23 months was uneventful with CT-surveillance postoperatively, in 6-th, 12-th month and annually thereafter in all cases. Stentgraft implantation is the method of choice in treating patients with post-traumatic, thoracic aortic rupture. Minimal invasion during this procedure allows to avoid severe complications which can burden open thoracotomy and clamping of the thoracic aorta. In long-time follow-up it is a safe and effective technique.

Extremities A171

Current non-surgical treatment of lymphedema (CPT, pneumatic compression)

Szuba Andrzej1

1Department of Internal Medicine, Wroclaw University of Medicine, Poland (szzaha@yahoo.com)

Lymphedema is a chronic disabling condition which continue to be a challenge for treating physicians. Various forms of physiotherapy are advocated as the treatment of choice in lymphedema. Combined physical therapy (CPT) – treatment which includes manual lymphatic drainage (a specialized form of massage), compressive bandaging and exercises, recommended by the International Society of Lymphology is proven to be an effective way to reduce lymphedema volume in majority of treated patients. The effectiveness of the CPT is documented by numerous published studies, however the role of specific components of the CPT remains controversial. The manual lymphatic drainage – a method based on stimulation of lymphatic flow by gentle touch of the skin seems to have some effect in early stages of lymphedema, while in advanced stages it probably can be neglected. Compressive bandaging is without a doubt the most effective part of the CPT. It requires usually a multiple layer, short stretch bandage application, however there is a little evidence from controlled trials on efficacy of other types of bandaging. Pneumatic compression therapy developed in 50’s by Dr. Jobst, criticized for low effectiveness and higher risk of complications is recently coming back as a valid and safe therapeutic option along with new, technologically improved compression devices. Several studies documented satisfactory therapeutic outcomes of pneumatic compression therapy in patients with lymphedema. Newer pneumatic compression pumps offer larger selection of compression sequence programs and pneumatic sleeves with increased number of chambers. Still the effectiveness of new devices remain to be proven in clinical studies.

Extremities A172

Chronic leg enlargement – differential diagnosis of lymphedema in angiologist’s experience

Szuba Andrzej1

1Department of Internal Medicine, Wroclaw University of Medicine, Poland (szzaha@yahoo.com)

Chronic symmetric or asymmetric leg enlargement is one of frequent causes of angiologist’s consultation. Usually patients are referred as suspected lymphedema. Diagnostic approach in such cases obviously should include careful medical history (time course, onset, related symptoms, family history, concomitant disorders) and physical exam (edema: pitting, non-pitting; lack of edema; Stemmer’s sign, tenderness, skin changes, distribution of edema/enlargement, varicose veins/collateral skin circulation, vascular bruits, increased pulsation, bony abnormalities). Imaging studies among others should include lymphoscintigraphy, ultrasound examination, magnetic resonance imaging (or CT scan), occasionally arteriography or phlebography. Differential diagnoses include systemic diseases (congestive heart failure, hypoproteinaemia, autoimmune/collagen diseases, Cushing’s disease, myxedema) and a variety of common and rare disorders usually confused to legs: 1) vascular disorders: chronic venous insufficiency, postthrombotic syndrome, inferior vena cava syndrome, May-Thurner syndrome, hemangiomas, arterovenous fistula, Parkes-Weber and Klippel-Trenaunay syndromes, arterial aneurysms, 2) lipomatosis: lipedema, Dercum’s disease, post-traumatic pseudolipoma, simple obesity, 3) primary neurogenic: neurogenic muscle hypertrophy, complex regional pain syndrome, 4) mixed origin and others: Baker’s cyst ruptured or compressing popliteal vein, pelvic and leg tumors malignant or benign, post-traumatic edema, chronic osteomyelitis, hemihyper trophy, Proteus syndrome, factitious edema including Munchausen syndrome, cyclic idiopathic edema. The diagnosis might be not straightforward and one should not forget basic imaging studies including lymphoscintigraphy and magnetic resonance even in seemingly obvious cases. One patient may have more than one problem (e.g.
postthrombotic syndrome and lymphedema secondary to prostate cancer) and a thorough diagnostic process is always necessary.

Hepatobiliary_2 A173
Comparing different haemostatic devices to stop severe liver bleedings—an animal
Takács Ildikó1, Wegmann Jürgen2, Sándor Ferencz3, Andrea Ferencz4, Szabóes Horváth3, György Wehner3
1 Department of Surgical Research and Techniques, Medical Faculty, University of Pécs, Hungary, 2Brahm Acucap AG&Co. KG, Am Acucap-Platz, 78532 Tuttingen, Germany, 3Department of Surgical Research and Techniques, Medical Faculty, University of Pécs, Hungary, 4Department of Surgical Research and Techniques, Medical Faculty, University of Pécs, Hungary, 5Department of Surgery, Medical Faculty, University of Pécs, Hungary
(takacildi@yahoo.com)

Background: The correct haemostasis in liver surgery is still a big challenge for surgeons because of the continuous oozing of blood from vessels that are too small to be ligated. The aim of this study was to compare the potential of a newly developed compress to two haemostatic compresses available in the market.

Methods: Sangustop®, TachoSil® and Surgicel® haemostatic devices were investigated in a randomised study in 20 pigs. A standardized resection was performed on three liver lobes. The diffuse liver bleedings were treated by applying the different haemostatic felts in a randomised order, then the bleeding time until haemostasis was measured. Handling of the fleeces was a subjective sensation of the surgeons. Tissue sampling for histopathological investigations was carried out after 21 days.

Results: The bleeding time of Sangustop®, TachoSil®, and Surgicel® was 140 ± 88, 243 ± 140 (p < 0.002 versus Sangustop®) and 352 ± 70 sec (p < 0.0001 versus Sangustop®) respectively. The number of the used fleeces of Sangustop®, TachoSil® and Surgicel® was 1.4, 2, 0 and 3.2 in average. Surgicel® was the best to handle in surgeons’ ranking. As a complication in 9 cases out of the 20 animals a perigraft cyst was present near TachoSil®. The microscopic evaluation of the TachoSil® implantation zone presented fibrosis and significant inflammation, whereas in case of Sangustop® and Surgicel® respectively only fibrosis was found in the wound area.

Conclusion: Sangustop® showed significant better haemostatic effect than TachoSil® and Surgicel®. Sangustop® seems to be an effective haemostatic device in this trial, which will be proven in a clinical human trial.

Wound healing A175
Effects of extracorporeal shock waves on bowel anastomosis healing
Tekin Sakir1, Pekin Ceyhun2, Kartal Adili3, Tekin Ahmet4, Sahin Mustafa5, Tavli Lema6
1 Selcuk University, Meram Medical Faculty, Department of General Surgery, Konya Turkey, 2Selcuk University, Meram Medical Faculty, Department of General Surgery, Konya Turkey, 3Selcuk University, Meram Medical Faculty, Department of General Surgery, Konya Turkey, 4Selcuk University, Meram Medical Faculty, Department of General Surgery, Konya Turkey, 5Selcuk University, Meram Medical Faculty, Department of General Surgery, Konya Turkey, 6Selcuk University, Meram Medical Faculty, Department of Pathology, Konya Turkey (sahinmm@hotmail.com)

Purpose: We planned to investigate the effects of extracorporeal shock waves on bowel anastomoses.

Material and methods: In study 30 Wistar Albinio female rats were divided into in to three equal groups. Group I (Control group) underwent only laparotomy. Group II (Study group) underwent laparotomy, right colon segmented resection, bowel anastomosis and ESW (in postoperative 3, 5, and 7 Days, 14 kV with 400 impulses in each application, totally 1200 impulses 0,12 mJ/mm2). Specimens consisting anastomosis lines of study groups and control groups were investigated histopathologically, fibroblast, collagen, angiogenesis and enflammation cells were examined. Results were analysed with student t test and ANOVA for all values p < 0.05 were considered meaningful.

Findings: Average anastomosis burst pressures were 272 ± 7.89 in group III and 220 ± 6.83 in group II. This difference was found meaningful statistically (p < 0.05). Fibroblast/collagen numbers were found 14 ± 5 ± 5.6 in Group I, 214 ± 62.1 in group II and 416 ± 52.44 in group III, Vessel numbers were found 5 ± 80 ± 3 ± 19 in group I, 51 ± 20 ± 10 ± 76 in group II and 75 ± 10 ± 13 ± 80 in group III. The number of fibroblast/collagen and vessels were higher in group III than group II and group I (p < 0.05), with these findings enflammation cells in group III were found much more dense than in group II.

Conclusion: According to our study results ESW encounters strength of bowel anastomoses. Anastomose burst pressures in individuals which were applied ESW (group III) were higher than group II and group I (p < 0.05), with these findings enflammation cells in group III were found much more dense than in group II.

Orthopedic_2 A176
The use of barbed sutures in the repair of the rotator cuff
Thompson Simon1, Emery Roger2, Reilly Peter3, Amis Andrew4
1 St Marys Hospital, Paddington, UK, 2St Marys Hospital, Paddington, 3St Marys Hospital, Paddington, 4Imperial College, London (c.m.thompson@ic.ac.uk)

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Introduction: Tears to the rotator cuff are common, some are repaired surgically. There are problems associated with repair and arthroscopic knot tying, and re-tear rates can be as high as 94%. It is known that surgical knots can slip, break, split, deluse, and cause ischaemia and infection, affecting the biology of the healing process and tendon repair.

Methodology: A new design for a patented barbed suture was developed. Using an Instron machine, the pull out strength of the sutures was measured in the sheep infraspinatus tendon. Four groups of eight infraspinatus tendons were tested, using one, two, three, or four sutures for repair. The maximum pull out strength was recorded.

Results: One suture had an average pull out of 38.9N, two sutures 82.3N, three sutures 118.8N, and four sutures 176.0N. Discussion Under low cyclical loading barbed sutures may offer an alternative to current rotator cuff repair methods, being technically easier, quicker, and with less biological complications.

Conclusion: The use of barbed sutures may be used in the repair of the rotator cuff. Further testing is required.

Introduction: Hemorrhoidal disease is a common anorectal condition and may need surgery. Postoperative pain is a common and important complaint following conventional hemorrhoidectomy (CH). Doppler Guided-Hemorrhoidal Artery Ligation (DG-HAL) is based on selective ligation of the arteries supplying blood to the piles.

Materials and Methods: In a randomized clinical trial, we compared the post-operative pain, return to usual daily activities and patient’s satisfaction between DG-HAL (n = 25) and CH (n = 26) groups. Post-operative pain assessed by Visual Analog Scale scored between 0–10. Data analyzed for parametric and nonparametric variables by SPSS 13 software.

Results: Among 51 cases, 42 were male and the mean age was 42.29 years. The average pain scores in the 1st, 2nd and 3rd post-operative day were 1.92, 1.08 and 0.3 in DG-HAL but 6.54, 6.31 and 5.81 in CH groups. In DG-HAL, 80% of cases returned to daily activities in third days but in CH only 15.4% (P value < 0.05). Complete satisfaction in DG-HAL and CH groups were 76% and 50% respectively (P value < 0.05). Conclusion: Less postoperative pain, early return to usual daily activities and better patient’s satisfaction were seen within DG-HAL group. This technique can be a good alternative for CH.

Education A177

Evaluation of Intercollegiate Surgical Curriculum Project (ISCP) critical care competencies in surgical training: a questionnaire survey

Touqan Nader1, Paringe Vishal2, Kumar Bhashkar1, Shaikh Faisal3, Hemadri Makan5, Moore Peter6

1 Scunthorpe General Hospital, UK, 2 Scunthorpe General Hospital, 3 Scunthorpe General Hospital, 4 Scunthorpe General Hospital, 5 Scunthorpe General Hospital (mohebib1@yaho.co.in)

Introduction: The introduction of the Intercollegiate Surgical Curriculum Project (ISCP) made it mandatory for surgical trainees to complete procedural based assessment as objective evidence to support the achieved competencies. The aim of this study was to investigate skills of surgical trainees (ST1–ST2) with regard to critical care procedures of direct relevance to care of the critically ill surgical patient.

Methods: Selection of the procedures was based on the necessary minimum criteria for ST1–ST2 as outlined by ISCP, which included insertion of central lines (CL) arterial lines (AL), intercostal chest drains (ICD), suprapubic catheterisation (SC) and mini-tracheostomy (MT). The study was based on an anonymous questionnaire survey including 15 consultants and 30 trainees in different surgical specialities. The purpose of the consultant questionnaire was to gauge the skill expectancy level for the trainees. The trainee survey aimed to assess whether they received formal training in the above procedures, and the number of procedures actually performed unsupervised.

Results: Procedure % trainees received % trainees with % trainers expecting received formal training > 5 unsupervised competency Central Line insertion 47 37 100 Arterial Line insertion 46 33 60 Intercostal chest drain 83 47 100 Suprapubic catheter 50 30 80 Mini tracheostomy 57 20 10.

Conclusion: This survey shows that trainees expect a high level of competency in these procedures but formal training in these procedures needs to improve. This may explain why relatively small numbers of trainees were performing these procedures unsupervised.

Gastrointestinal A178

Comparing Postoperative pain and patient’s satisfaction between Conventional Hemorrhoidectomy and Doppler Guided-Hemorrhoidal Artery Ligation (DG-HAL)

Towlat Kashani Seyed Mohsen1, Mohabbi Hassan Ali2, Panahi Farzad1, Mehrvarz Shaban3

1 Department of Surgery, Baqiyatallah University of Medical Science, Tehran, Iran, 2 Associate professor of thoracic surgery-Department of Surgery, Baqiyatallah University of Medical Science, Tehran, I.R. Iran, 3 Associate professor of surgery-Department of Surgery, Baqiyatallah University of Medical Science, Tehran, I.R. Iran, 4 Associate professor of surgery-Department of Surgery, Baqiyatallah University of Medical Science, Tehran, I.R. Iran (mohabbiha@yahoo.co.in)

Introduction: The aim of this study was to investigate skills of surgical trainees (ST1–ST2) based assessment as objective evidence to support the achieved competencies. Project (ISCP) made it mandatory for surgical trainees to complete procedural criteria for ST1–ST2 as outlined by ISCP, which included insertion of central lines (CL) arterial lines (AL), intercostal chest drains (ICD), suprapubic catheterisation (SC) and mini-tracheostomy (MT). The study was based on an anonymous questionnaire survey including 15 consultants and 30 trainees in different surgical specialities. The purpose of the consultant questionnaire was to gauge the skill expectancy level for the trainees. The trainee survey aimed to assess whether they received formal training in the above procedures, and the number of procedures actually performed unsupervised.

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Conclusion: This survey shows that trainees expect a high level of competency in these procedures but formal training in these procedures needs to improve. This may explain why relatively small numbers of trainees were performing these procedures unsupervised.

Unusual observations, strange ideas A179

Is donor DNA incorporated into recipient lymphoid cells genome?

Tyszka Joanna1, Rutkowska Joanna2, Olszewski Waldemar L3

1 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warszawa, Poland, 2 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warszawa, Poland, 3 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warszawa, Poland, 4 Norwegian Radium Hospital, Oslo, Norway (evel@cmdik.pan.pl)

Introduction: Processing and incorporation of fragments of DNA and oligonucleotides by mammalian and bacterial cells is a continuing physiological process. It is strongly intensified in inflammation, cancer and after tissue and organ transplantation. The outcome of DNA transfer between mammalian cells remains not well understood. It has been suggested that donor DNA may play a role in rejection or creating partial tolerance.

Aim: To study whether donor DNA may be identified in recipient immune cells and if so, whether it locates in cytoplasm or penetrates into nucleus.

Methods: In sex-mismatched combination male rat DNA was injected i.v. into 10 female rats. Recipient blood (PBM), lymph node (LN) and spleen (SPL) mononuclear cells were examined 24 hr later for the presence of SRY gene characteristic for Y-chromosome. SRY was detected using polymerase chain reaction (PCR) method and real-time PCR. The PCR products was analyzed by electrophoresis in 12.5% polyacrylamide gel (PAGE; Phast System, Amersham Pharmacia Biotech) and silver stained (Silver Staining Kit; Amersham Pharmacia Biotech).

Results: SRY gene was detected in female PBM, LN and SPL cell cytoplasm in 2 out of 10 rats. Moreover, it was detected in PBM nuclei in 4 out of 10 rats and in LN cell nuclei also in 4 out of 10 rats. Location of the incorporated fragments is studied.

Conclusion: Detection of donor male DNA in nuclei isolated from female cells suggests its spontaneous transport into recipients cells and their nuclei. The question remains open whether this finding may have any relevance to the rejection or tolerance process.
A rabbit model for portal vein embolization and/or hepatic artery embolization
van den Esschert Jacomina¹, Graaf Wilmar², van Lienden Krijn³, van Gulik Thomas⁴
¹Department of Surgery, University of Amsterdam, Amsterdam, The Netherlands,
²Department of Surgery Academic Medical Center Amsterdam, the Netherlands,
³Department of Radiology Academic Medical Center Amsterdam, the Netherlands,
⁴Department of Surgery Academic Medical Center Amsterdam, the Netherlands
(p.c.vandenesscher@amc.uva.nl)

Introduction: Portal vein embolization (PVE) is now an established method to increase future remnant liver (FRL) in liver surgery. A potential risk of using the technique is increase of tumor growth in the time between PVE and partial liver resection. Sequential embolization of the hepatic artery and portal vein could offer a solution to tackle this problem. In order to study the phenomena involved in PVE, a reliable animal model of VPE is needed. We describe a new model of portal vein and hepatic artery embolization in rabbits.

Methods: Ten female New Zealand White rabbits of approximately 3 kg were anesthetized using ketamin 0,25mg/kg body weight + medetomidin 0,2mg/kg body weight and isoflurane. The portal vein branches to the left medial, left lateral and right liver lobes were embolized, which accounts for ≥75% of the liver. After laparotomy, the catheter and wire were introduced into the portal vein via a colonic mesenterial vein. The hepatic artery was cannulated via an ear artery. Polynylalcohol particles and metal coils were used for embolization. Liver regeneration of the non-embolized lobes was measured using CT-volumetry. To determine the regeneration speed in rabbits after PVE, a 4-phase CT-scan was performed on the day before PVE in all rabbits under anesthesia. The imaging procedure was repeated after 3 and 7 days (group 1, n=5) and after 10 and 14 days (group 2, n=5), respectively after which the rabbits were sacrificed. Liver weight and liver volume were measured.

Results: Both portal vein embolization and hepatic artery embolization were successful in this rabbit model. The volume increase of the non-embolized lobes was almost doubled after 1 week. The correlation between CT-volumetry and liver weight was strong (Pearson r = 0.943).

Conclusion: This rabbit model is useful to study the optimal technique and underlying mechanisms following portal vein embolization and/or hepatic artery embolization.

Regeneration of the remnant liver after major liver resection and prior portal vein embolization
van den Esschert Jacomina¹, de Graaf Wilmar², van Lienden Krijn³, van Gulik Thomas⁴
¹Department of Surgery, University of Amsterdam, Amsterdam, The Netherlands,
²Department of Surgery Academic Medical Center Amsterdam, the Netherlands,
³Department of Radiology Academic Medical Center Amsterdam, the Netherlands,
⁴Department of Surgery Academic Medical Center Amsterdam, the Netherlands
(p.c.vandenesscher@amc.uva.nl)

Introduction: Portal vein embolization (PVE) has been widely accepted as an effective means to increase the future remnant liver (FRL) volume in patients requiring extensive liver resection. It is believed that liver regeneration after partial liver resection or PVE depends largely on the same mechanisms. The dramatic increase in portal blood flow after partial liver resection is considered an important trigger for liver regeneration. In that case one might speculate that post-hepatectomy regeneration after prior PVE is less effective than post-hepatectomy regeneration without prior PVE. Aim of this study was to evaluate the effect of preoperative portal vein embolization (PVE) on postoperative liver regeneration after major liver resection. Method: Retrospective case-control study. Data were collected of patients who underwent PVE prior to (extended) right hemihepatectomy and of control patients who underwent the same resection without prior PVE between January 2005 and November 2007. A CT-scan was obtained 3 months after hemihepatectomy. Liver volumes were measured by CT volumetry before PVE, before liver resection and 3 months after liver resection.

Results: In 10 patients who underwent PVE prior to liver resection a CT-scan was obtained 3 months after liver surgery. A total of 13 patients were included in the control group. Groups were comparable for gender, age, preoperative FRL volume and number of patients with a compromised liver. Three months after liver resection the mean remnant liver volume in the PVE group was not significantly different from the control group (82 ± 8.2% SD and 79 ± 11.0% SD of initial total functional liver volume, respectively).

Conclusion: There is no significant difference in remnant liver growth in patients who underwent (extended) right hemihepatectomy with or without prior PVE. The assumption that postoperative liver regeneration is hampered by PVE prior to partial liver resection is therefore not valid.

Minimally invasive A182
Intraoperative parathyroid hormone monitoring, experience of a Dutch peripheral
van Ginhoven TM¹, Morks A², Smit PC³, de Graaf PW⁴
¹Erasmus Medical Center, Rotterdam, The Netherlands, ²Reinier de Graaf Gasthuis, ³Reinier de Graaf Gasthuis, The Netherlands, ⁴Reinier de Graaf Gasthuis (t.vanginhoven@erasmusmc.nl)

Primary hyperparathyroidism is most often due to one parathyroid adenoma secreting parathyroid hormone. The standard of care for primary hyperparathyroidism is surgical removal of all hyperfunctional parathyroid tissue. In experienced hands, parathyroidectomy is successful in 95–99% of the cases with a very low complication rate. The introduction of radionucleide parathyroid localization studies and, more recently, intraoperative parathyroid hormone (ioPTH) monitoring has fueled a trend towards the minimally invasive parathyroidectomy. The aim of this study was to investigate whether ioPTH monitoring has an additional value in the treatment of hyperparathyroidism mainly using the minimally invasive approach. From January 2002 until January 2008, in a Dutch peripheral hospital, 79 patients were included of whom four patients underwent a second operation several months later due to persistent hyperparathyroidism. Measuring series of ioPTH levels was achieved in 83% (n = 66) of the primary operations, five patients were evaluated twice during the same operation. A decrease greater than 50% between the preoperative PTH level and a PTH level drawn approximately 10–12 minutes after excision of the abnormal gland is interpreted as a curative (positive) result. This result was obtained in 15 (83%) patients, of which 54 were cured. One patient is currently waiting for her second operation. Eleven patients had an inadequate decrease of the ioPTH levels. Eight patients were cured in a second attempt, one patient remained ill and two patients were, in contrast with the ioPTH levels, cured. To summarize, the ioPTH monitoring could prevent a re-operation and re-admittance in 8 (12%) patients. Although there were 2 (3%) false negative results and one (1.5%) false positive, we believe that ioPTH monitoring provides useful information to optimize the minimal invasive approach.
method of stratifying surgical risk in order to appropriately apply such protocols to these sorts of patients. In this study we aimed examine the efficacy of cardio-pulmonary exercise (CPX) testing as a method of determining cardiopulmonary reserve, thus allowing us to triage patients to the appropriate level of post operative care (Ward, HDU, ITU). The ultimate goal being to minimise the morbidity and mortality in complicated surgical population.

**Method:** From 1 May 2006 till 31 Dec 2006 104 consecutive patients enrolled into our Enhanced Surgical Treatment and Recovery programme (ESTReP) were prospectively analysed. All patients had CPX testing attempted prior to surgery. In addition, all patients had Possum scores measured to calculate expected morbidity and mortality data as a benchmark. All patients were managed in a standardised fast track protocol. The primary outcome measure was mortality, with secondary measures morbidity, return of gastrointestinal function, hospital stay, and readmission.

**Results:** The average POSUM score was 24·12, indicating an expected 15·4% morbidity and 2·4% mortality. The average anaerobic threshold was 13·2 ml/kg/min measured by CPX, (11 ml/kg/min being the reference level). The observed mortality was 0·96% and the morbidity rate 12·5%. Conclusion: CPX appears to allow appropriate triage of complex colorectal patients, thus reducing their expected morbidity and mortality. Its routine use in surgical practice needs better defining but these early results are promising.

**Wound healing A184**

The effect of ascitic media formed by glycerin on the prevention of peritoneal adhesions: are there less peritoneal adhesions with abdominal ascites

Vatansev Celalettin1, Tekin Ahmer2, Pamukçu Ahmet3, Kicicikkartlar Teflik4, Sahin Mustafa5, Yilmaz Huseyin6

1 Selcuk University Meram Medical Faculty, Department of General Surgery, Konya, Turkey, 2 Selcuk University Meram Medical Faculty, Department of General Surgery, Konya, Turkey, 3 Selcuk University Meram Medical Faculty, Department of General Surgery, Konya, Turkey, 4 Selcuk University Meram Medical Faculty, Department of General Surgery, Konya, Turkey, 5 Selcuk University Meram Medical Faculty, Department of General Surgery, Konya, Turkey, 6 Private Konya Hospitals Department of Surgery, Konya Turkey (ahmer@msm.com)

**Aim:** We aimed to investigate whether or not artificial ascites media formed using glycerin are effective in the prevention of intraperitoneal adhesions.

**Material and Method:** 36 Wistar allino male rats were used in the study. The rats were divided into three groups as: Group I: control group, Group II (isotonic group) – 3 ml of 0·9% NaCl was injected into the peritoneal cavity; and Group III (glycerin group) – 0·5 ml of liquid glycerin and 3 ml of 0·9% NaCl was injected into the peritoneal cavity. The same substances were re-injected with less pain and quicker recovery time.

**Procedure:** Our technique involves performing a diagnostic Laparoscopy under General Anaesthesia for all patients who present with incarcerated femoral hernia. The first port (10mm) is placed supra or per infra umbilical as open technique (modified Hassan’ technique). Following CO2 inflation a second port (5mm) is inserted on the side of the hernia approximately four finger breadth lateral to the umbilicus, avoiding the epigastric artery. Once the femoral hernia is exposed, if the sac contains incarcerated bowel loop it would be revealed. If the sac does not contain bowel loop, once confirmed the ports can be removed and hernia repaired locally from the groin with a small incision. If the sac contains a knobble of bowel, this loop of bowel can be reduced easily with gentle traction with help of soft laparoscopic graspers (Yohan’s or bowel graspers). If necessary counter pressure could be applied externally from the groin. In authors practice it is felt unnecessary to cut the femoral hernia ring to reduce the bowel. Once the bowel is reduced, if the viability is doubtful, the soft grasper is gently applied to the adjacent fat in the mesentery to mark the segment of bowel, and with ports in place the pneumoperitoneum is decompressed, the patient position neutralised and the femoral hernia is repaired through a 4 to 6 cm groin incision. In our technique we prefer simple repair with 1–0 PDS on a J needle taking care to avoid injury or narrowing of femoral vein. The groin wound is closed and pneumoperitoneum is re-created to inspect the segment of bowel. By now if the blood supply is adequate the bowel would have pinked up and peristalsis could be seen. If the bowel is still ischaemic, umbilical port is extended to about 5cm and ischaemic bowel exteriorised, and excised. Once anastomosed the bowel is returned into the peritoneal cavity and the defect in the abdomen closed with 1–0 PDS. This technique has been successfully practised and has been found to be technically easy, and has been found to be associated with minimal discomfort to the patient. The main advantage we feel with this technique is that it is easy to perform with basic laparoscopic skills. We feel this technique is probably the easiest technique to repair incarcerated femoral hernia which is also safe and can be easily taught.

**Orthopedic 2 A186**

Blood Loss During Orthopaedic Surgery in Patients with Paget’s Disease of Bone: A Pilot Study

Willder Jennifer M1, Langston Anne L2, Gaston Paul3, Ralston Stuart H4

1 University of Edinburgh, UK, 2 University of Edinburgh, 3 New Royal Infirmary of Edinburgh, 4 University of Edinburgh (j.willder@sms.ed.ac.uk)

**Abstract Background:** PRISM (ISRCTN 12989577) is a randomised controlled trial comparing the effects of symptomatic therapy and intensive bisphosphonate treatment in Paget’s Disease of Bone (PDB). Of the PRISM trial cohort 103 participants underwent orthopaedic surgery during the trial period, 53% in the symptomatic arm and 47% in the intensive arm. We reported increased operative blood loss in PDB is thought to be related to disease

**Results:** The observed mortality was 0·96% and the morbidity rate 12·5%. Conclusion: CPX appears to allow appropriate triage of complex colorectal patients, thus reducing their expected morbidity and mortality. Its routine use in surgical practice needs better defining but these early results are promising.

**Findings:** There were serious adhesions in the control group. Adhesion rates were lower in the isotonic group compared with the control group, but the difference was not statistically significant (p > 0.05). When adhesion rates of the glycerin group were compared with control and isotonic groups, significant differences were determined, especially between the glycerin and control groups (p < 0.05).

**Results:** According to the results of our study, use of isotonic solution and liquid glycerin decreases postoperative adhesions. We suggest that glycerin was more effective as it has the chemical ability to draw water to its media. As such, formation of adhesions may be decreased by increasing the amount of physiological liquid inside the abdomen.
activity, measured by serum total alkaline phosphatase (sALP), was preoperative suppression of disease activity with bisphosphonates is considered to minimise intraoperative bleeding. The PRISM cohort provides a unique opportunity to investigate this controversial indication for bisphosphonate intervention. A pilot study in a non-pagetic population was undertaken in order to direct the conduction of the Blood Loss PRISM Sub-study. Aims: Assess and identify predictors of operative blood loss in a non-pagetic population. Provide a control population with which to compare operative blood loss variables in PDB.

Methods: Operative: Blood loss data was collected on 101 elective non-pagetic hip and knee arthroplasty patients. Variables studied were age, gender, BMI, diabetes, preoperative haemoglobin, serum creatinine (sCr) and sALP, postoperative haemoglobin, type of operation, length of operation and grade of operating surgeon. Study outcomes were length of hospital stay, total estimated intraoperative blood loss and postoperative blood transfusion. Categorical variables were analysed using Chi-Squared and Fisher’s Exact tests. Continuous variables were analysed using the Independent Samples T-test, Kruskall Wallis and Mann Whitney U tests.

Results: Female gender (p = 0.037), low BMI (p = 0.01), low preoperative haemoglobin (p = 0.003), low preoperative sCr (p = 0.014) and low postoperative haemoglobin (p = 0.000) were associated with postoperative blood transfusion (14%). The type of operation performed (p = 0.000), lower grade of operating surgeon (p = 0.008), longer length of operation (p = 0.000) and low postoperative haemoglobin (p = 0.006) were associated with higher estimated intraoperative blood loss (mean 239±9 ml). Mean length of hospital stay was 6.2 days and was not related to any of the study variables.


Oncology 2 A187

Gastrointestinal stromal tumors – clinical and imaging spectrum of disease

Wronska Marek1, Słodkowski Maciej2, Cebulska Włodzimierz1, Krasnodelski Ireneusz1

1 Department of General and Gastroenterological Surgery and Nutrition, Medical University, Warsaw, Poland; 2 Department of General and Gastroenterological Surgery and Nutrition, Medical University of Warsaw, ul. Banacha 1a, 02-097 Warsaw; 3 Department of General and Gastroenterological Surgery and Nutrition, Medical University of Warsaw, ul. Banacha 1a, 02-097 Warsaw; 4 Department of Gastroenterological Surgery and Nutrition, Medical University of Warsaw, ul. Banacha 1a, 02-097 Warsaw

Purpose: To analyze clinical manifestations of primary gastrointestinal stromal tumors and their appearance in the imaging investigations.

Materials and Methods: The study included 34 patients with a primary GIST treated between 1989 and 2006. Mean age of the patients was 64 years. The primary gastrointestinal stromal tumors were located in the stomach (33%), small intestine (41%), large intestine (3%) and mesentery (3%). Analysis of clinical picture and diagnostic investigations was performed. Medical records reports and photographic documentation were reviewed.

Results: 35% of the primary GISTs were asymptomatic and found incidentally at operation. The patients with a symptomatic GIST presented with abdominal pain (64%), chronic anemia (32%), gastrointestinal bleeding (32%), palpable abdominal mass (23%), weight loss (14%), gastrointestinal perforation (9%) and ileus (4%). 20% of all the GISTs occurred synchronously with other gastrointestinal neoplasm. Average delay in diagnosis was 3.8 months (range: 0 days – 8 years). GISTs appeared ultrasonographically as an oval well-defined hypoechogenic mass located extramurally. Large tumors (> 100 mm) had an intratumoral central area of lower echogenicity corresponding to necrosis and hemorrhage. In CT, gastrointestinal stromal tumors were visualized as well-defined submucosal mass of with heterogeneous contrast enhancement. Similarly to ultrasonography, large tumors had a hypodense intratumoral area which did not enhance with contrast. In endoscopy, GISTs visualized as a submucosal sessile polyp or smooth tumor or the wall was modelled from outside. The endoscopy was normal in some tumors that were mainly situated outside the gastrointestinal wall. Two gastrointestinal stromal tumors had an intratumoral fluid cavity opening into the gastrointestinal lumen through a internal fistula. The submucosal location of the tumor was recognized in 3 cases upon computed tomography and in 1 case upon endoscopy.

Conclusions: Gastrointestinal stromal tumors often cause mild and inspecific symptoms resulting in delayed diagnosis. The appearance of GISTs in the imaging studies reflects their typical macroscopic features such as submucosal and extramural location, narrow attachment to the gastrointestinal wall and well-defined tumor margins.

Transplantation, Organ preservation 1 A188

Continuous Pulsatile Hypothermic Perfusion (CPHP) of kidneys prior to transplantation limits ischemia/reperfusion injury

Wsolak Michał1, Kosieradzki Maciej2, Kwiatkowski Artur3, Bieniasz Monika4, Kaminska Agnieszka5, Chmura Andrzej6

1 Department of General and Transplantation Surgery, Medical University of Warsaw; 2 Department of General and Transplantation Surgery, Medical University of Warsaw; 3 Department of General and Transplantation Surgery, Medical University of Warsaw; 4 Department of General and Transplantation Surgery, Medical University of Warsaw; 5 Transplantation Institute, Medical University of Warsaw; 6 Department of General and Transplantation Surgery, Medical University of Warsaw

Histopathological analysis undertaken in our center revealed significantly lower incidence of chronic rejection, interstitial fibrous/tubular atrophy in kidneys preserved by CPHP. Ischemia/reperfusion injury (I/R-I) is thought to play a role in explaining these findings. The aim of the present study was to assess activation of genes associated with I/R-I depending on the method of preservation of grafts prior to transplantation.

Patients and method: Between 2005 and 2006, sixty-nine kidney biopsies from 69 allotransplants were obtained. Kidneys prior to transplantation were preserved by CPHP (n = 26) or cold storage (CS; n = 16). 7 kidneys were donated by living related donors (LRD group). Deceased donors in the CPHP and CS groups did not differ regarding age, gender, hemodynamic status. Cold ischemia time (CIT) was similar: 23 6 h in CS vs 28 7 h in CPHP (p = NS). Mean m-RNA expression for hypoxia inducible factor 1 is 95(S6) between 2005 and 2006. 26) or cold storage (CS; n = 16). 7 kidneys were donated by living related donors (LRD group). Deceased donors in the CPHP and CS groups did not differ significantly between the groups. There were no significant differences between the recipients as to age, gender, duration of ESRD treatment, PRA titre, HLA incompatibility and immunosuppressive treatment. Biopsies were obtained 30 min after reperfusion and snap frozen at 750C. Expression of genes for IL-1b, VEGF, hemoxygenase 1 (HO-1) and hypoxia inducible factor 1 (HIF-1) was analyzed by real-time PCR.

Results: Mean Ct for m-RNA expression for HIF-1 in kidney biopsies 30 min after reperfusion were: 95(S6) for MP vs LRD). Mean m-RNA expression for IL-1b, VEGF and HO-1 did not differ significantly between the groups.

Conclusions: Mean m-RNA expression for hypoxia inducible factor 1 is significantly higher in group of kidneys preserved by CS in comparison to MP and LRD. There is no difference between CPHP and LRD group regarding expression of HIF-1. Ischemia/reperfusion injury, which can affect early and long-term graft survival is reduced by machine perfusion preservation of cadaveric kidneys.
Orthopedic_1 A189

Protein Interaction with a Nanostructured Bone Grafting Substitute – Early Stage In Vivo Rat Study
Xu Weiguo1, Holzhüter Gerdi2, Vollmar Brigitte3, Gerber Thomas4
1 Institute for Experimental Surgery, University of Rostock, Germany, 2 Institute of Physics, University of Rostock, Germany, 3 Institute for Experimental Surgery, University of Rostock, Germany, 4 Institute of Physics, University of Rostock, Germany (dwlweiguo@yahoo.com)

Background: The bone substitute NanoBone® consists of nanocrystalline hydroxyapatite embedded in a highly porous matrix of silica gel. It promotes the healing of bone defects and is degraded by osteoclasts during bone remodelling. The biomaterial has a high inner surface of 80m²/g caused by nanopores with a mean diameter of 20nm. The present study investigates the interactions of proteins with this structure representing the key step in osteoblast-osteoclast interaction.

Methods: 25 pentobarbital-anesthetised male Wistar rats (300–400g) were used. A 2cm neck skin incision was made to expose the fat tissue for implantation of the biomaterial (80mg) mixed with 0.2ml venous blood. The animals were sacrificed after 3, 6, 9, 12, and 42 days. Calcified 5µm thin tissue sections were stained with periodic acid schiff and haematoxylin-eosin. The composition of the implanted granules was analysed by means of scanning electron microscopy and energy dispersive spectroscopy (EDX).

Results: After 3 days the biomaterial blood mixture is surrounded by granulation tissue penetrating the defect like a closed front line with a rate of 300µm/d. The defect with a mean diameter of 7mm is completely pervaded with vascularised granulation tissue after 12 days. Histology revealed osteoclast-like giant cells covering the granules. EDX demonstrated that the silica gel was degraded with a rate of 0.5±0.5µm/day in the granulation tissue and a rate of 0.2±0.1µm/day in the inner hematoma and replaced by an organic matrix.

Conclusion: In vivo, the silica gel of NanoBone® is replaced by bone matrix glycoproteins with known functions in attraction, adhesion, and differentiation of bone cells as osteoblasts and osteoclasts. The deposition of these molecules supports the NanoBone® degradation by osteoclasts. This project is supported by the BMBF 01EZ0729.

Hepatobiliary_1 A190

The effects of L-arginine on heme oxygenase-1 expression in rats with acute pancreatitis resulting from normothermic ischemia reperfusion injury
Yüksel Osman1, Gülbahar Özlem2, Kurukahvecioğlu Osman3, Akyürek Nalan3, Bostanci Hasan4, Tezel Ekmekçi5
1 Gazı University Medical School Department of Biochemistry Ankara, Turkey, 2 Gazı University Medical School Department of Pathology Ankara, Turkey, 3 Gazı University Medical School Department of Surgery Ankara, Turkey, 4 Gazı University Medical School Department of Surgery Ankara, Turkey, 5 Gazı University Medical School Department of Surgery Ankara, Turkey (osmanyusuf1971@yahoo.com)

Aim: Ischemia-reperfusion (I/R) is a causative factor in the pathogenesis of acute pancreatitis. L-arginine plays a key role in the relationship between microcirculatory disorders and ischaemia reperfusion injuries. Heme oxygenase-1 (HO-1) has been identified as a stress protein induced in many cell types by various stimulants such as oxidative stress. Oxidative stress has been implicated in the pathophysiology of pancreatitis. In the present study it is aimed to investigate the effects of L-arginine on HO-1 in pancreatitis that resulted from ischemia and reperfusion.

Materials and Methods: Pancreatic arterial vessels (gastro-duodenal, splenic, pancreaticoduodenal and left gastric arteries) were prepared and clamped for 1 hour and then 3 hours released. Animals were divided into 5 groups (n=8/group); (1) sham, (2) L-arginine + ischemia without reperfusion, (3) saline + ischemia without reperfusion, (4) L-arginine + ischemia with reperfusion, and (5) saline + ischemia with reperfusion. Blood was collected for amyrase, myeloperoxidase, superoxide dismutase (SOD), malondialdehyde (MDA), total protein and HO-1. Tissue samples were collected for histopathologic analysis.

Results: The levels of amyrase, MPO, SOD, MDA and total protein in the L-arginine + ischemia without reperfusion and the L-arginine + ischemia with reperfusion group were lower than the saline + ischemia without reperfusion and the saline + ischemia with reperfusion group (p<0.05). In the L-arginine + ischemia with reperfusion group, these parameters were lower than the L-arginine + ischemia without reperfusion group (p<0.05). In the L-arginine + ischemia with reperfusion group, these parameters were lower than the L-arginine + ischemia without reperfusion group (p<0.05). HO-1 expression was significantly higher in the L-arginine treated groups; especially highest in the L-arginine + ischemia with reperfusion group (p<0.05). Histopathological findings also support the protective role of L-arginine (p<0.05).

Conclusion: Our data suggest that L-arginine, which induced HO-1 expression, could be useful in oxidative damage associated with I/R induced pancreatitis.

Extremities A191

Selected rheological properties of the red blood cells in chronic venous insufficiency
Zagalski Krzysztof6, Wystrachowski Wojciech7, Heitzman Marek3, Cabań Artur4, Oczkowski Grzegorz3, Cierpka Lech6
1 Dept. of General, Vascular and Transplant Surgery, Medical University of Silesia, Katowice, Poland, 2 Dept. of General, Vascular and Transplant Surgery, Medical University of Silesia, Katowice, Poland, 3 Dept. of General, Vascular and Transplant Surgery, Medical University of Silesia, Katowice, Poland, 4 Dept. of General, Vascular and Transplant Surgery, Medical University of Silesia, Katowice, Poland, 5 Dept. of General, Vascular and Transplant Surgery, Medical University of Silesia, Katowice, Poland, 6 Dept. of General, Vascular and Transplant Surgery, Medical University of Silesia, Katowice, Poland, 7 Dept. of General, Vascular and Transplant Surgery, Medical University of Silesia, Katowice, Poland (kwysztof6@gmail.com)

Aim: Pathophysiology of CVI includes among others endothelial dysfunction and generation of various mediators potentially influencing red blood cells (RBC) rheology. Deformability beside aggregability is one of the most important factors of RBC flow in high shear rate areas. The aim of this study was to compare erythrocytes’ deformability of patients with CVI to healthy controls.

Methods: Patients with CVI (n = 29, age:21–81, female: n = 22, C3: n = 21, C6: n = 8 CEAP classification) and healthy controls (n = 21, age:28–72, female: n = 16) were examined. Blood was withdrawn from an antecubital vein (both groups) and varicose vein above medial malleolus (patients with CVI). Deformability was measured by RhodynnSSD at shear stress 0–60Pa and expressed as Elongation Index (EI). Basic hematological parameters as well as CRP level, fibrinogen concentration and lipid profile were analyzed.

Results: There were no changes in basic hematological parameters. Also there was no significant difference in lipid profile among groups and homocysteine level, known as prothrombotic factor. Erythrocytes obtained from varicose veins revealed an increase in EI at 1.2, 3.0 and 6.0Pa comparing to blood collected from antecubital vein and from healthy controls (U Mann-Whitney test). Patients with C6 had significantly higher fibrinogen concentration in comparison to C3 group (blood from antecubital vein). There was no difference in CRP level among these groups.

Conclusion: Our data suggest presence of mechanisms promoting deformation of erythrocytes within varicose veins.
Sepsis, Infection, Immunity_1 A192

Human skin tissue fluid cytokines and growth factors—their role in skin homeostasis

Zaleska Marzanna1, Cąkała Marta2, Olszewski Waldemar L3

1 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland. 2 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland. 3 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland (czw@cmdik.pan.pl)

Tissue fluid creates humoral environment for parenchymatous cells in tissues and organs. It is composed of plasma proteins filtered to the interstitial space and own cellular products. Tissue fluid flows into lymphatics and along them to the regional lymph nodes. Foreign (e.g. bacteria) and own (cellular debris) antigens are transported with lymph stream to the nodes where recognition, processing and elimination take place. Depending upon type of penetrating foreign or own free antigens, an immune reaction develops in the tissue with recruitment of immune cells. Taken together, tissue fluid contains a composition of cytokines, chemokines and growth factors originating from blood, parenchymatous and infiltrating cells. These proteins do not only regulate the local immune processes but also influence the cellular events in the lymph nodes draining the inflammatory tissues.

Aim: To measure the concentration of pro-and anti-inflammatory cytokines and chemokines in human lower limb skin tissue fluid/lymph in normal subjects and patients with rheumatoid arthritis, obstructive lymphedema without and with dermatitis. Methods. Tissue fluid was collected either from the cannulated or incised skin superficial lymphatics in the lower leg. The level of cytokines in tissue fluid/lymph and serum was measured with ELISA.

Results: Cytokines, chemokines and growth factors were cumulated in 3 groups: 1) pro-and anti-inflammatory (IL1β, TNFα, IL1Ra, MP1α, MCP1, IL6, IL12, TGF β, 2) regulating epidermal and dermal cellular (KGF, MMP9, TIMP 1 and 2, PDGF BB) and 3) lymphatic structure (VEGF, VEGFC, CCL21 and 27). Patients were divided into 4 groups: A) without any dermal conditions (N), B) rheumatoid arthritis (RA), C) lymphedema without dermatitis (LD), D) lymphedema complicated by dermatitis (LD). 1) The level of proinflammatory cytokines was highest in RA. In all patients groups it was higher than in N. IL10 and 12 levels were low. 2) KGF, MMP9 and TIMPS concentration was significantly higher than in N in all groups, 3) VEGFs and CCL21 and 27 were much elevated in lymphedema but not so much in RA.

Conclusions: The concentration of different humoral factors in tissue fluid/lymph varies depending on the type of pathological processes in skin. Most of cyto-and chemokines are produced locally and their level exceeds that of serum. Measuring the level of humoral factors in tissue fluid/lymph gives an insight into the tissue events that is not possible with measuring serum concentrations.

Sepsis, Infection, Immunity_1 A193

Simvastatin inhibits pulmonary infiltration of neutrophils by reducing Mac-1 expression and CXC chemokines formation in abdominal sepsis

Zhang Su1, Asaduzzaman Muhammad2, Rahman Milladur1, Lavasani Shahram4, Thorlacius Henrik5

1 Department of Surgery, Malmö University Hospital, Lund University, Malmö, Sweden. 2 Department of Surgery, Malmö University Hospital, Lund University, Malmö, Sweden. 3 Department of Surgery, Malmö University Hospital, Lund University, Malmö, Sweden. 4 Department of Surgery, Malmö University Hospital, Lund University, Malmö, Sweden. 5 Department of Surgery, Malmö University Hospital, Lund University, Malmö, Sweden (Andrada.Mihaescu@med.lu.se)

Background: Simvastatin has been reported to exert anti-inflammatory actions. Herein, we hypothesized that simvastatin may protect against lung damage in abdominal sepsis.

Methods: Male C57Bl/6 mice underwent cecal ligation and puncture (CLP). Animals were pretreated with simvastatin (0–0.2 mg/kg). Bronchoalveolar fluid and lung tissue were harvested for analysis of leukocyte recruitment, edema formation and CXC chemokine formation. Blood was collected for flow cytometric analysis of Mac-1 expression and neutrophil-platelet aggregates.

Results: Simvastatin decreased CLP-induced neutrophil infiltration (82%), CXC chemokine formation (75%) and edema formation (80%) in the lung. Moreover, Mac-1 expression was increased on circulating neutrophils, which was significantly attenuated by simvastatin administration. Lastly, simvastatin decreased the number of circulating neutrophil-platelet aggregates by more than 50% in septic mice.

Conclusions: Our data suggest that simvastatin inhibits pulmonary accumulation of neutrophils by reducing the production of CXC chemokines in the lung and Mac-1 expression on circulating neutrophils in abdominal sepsis. In addition, simvastatin not only reduced neutrophil infiltration but also protected against sepsis-induced lung edema and tissue destruction. Interestingly, simvastatin effectively decreased formation of neutrophil-platelet aggregates which may contribute to lung injury in sepsis. Thus, statins, such as simvastatin, may represent a novel therapeutic approach to prevent lung damage in abdominal sepsis.
Cardiovascular, Thoracic, P001

Intraluminal thrombus has a selective influence on matrix metalloproteinases (MMPs) and their inhibitors (TIMPs) in the wall of the abdominal aortic aneurysms (AAA)

Abdul Rahman MNA1, Greenman J2, McCollum PT3 and Cleeceer IC4
1 Academic Vascular Surgical Unit, Hull Royal Infirmary, 2 Biological Sciences Department, University of Hull, 3 Academic Vascular Surgical Unit, Hull Royal Infirmary, 4 Academic Vascular Surgical Unit, Hull Royal Infirmary

Background: The influence of intraluminal thrombus on the proteolytic environment within the wall of an abdominal aortic aneurysm is unknown. We aimed to assess the influence of intraluminal thrombus on the expression and activity of MMPs and TIMPs within the adjacent AAA wall.

Methods: Thirty five patients, twenty six men, median age 73 (range 66–82) years undergoing elective repair of AAAs were studied. A full thickness AAA wall specimen was taken from each patient and the exact position was noted. All samples were snap frozen and analysed for MMP 2,8 and 9 and TIMP 1 and 2 using ELISA. Statistical analysis was performed using SPSS v14. Thrombus thickness at specimen’s site, was measured on the pre operative CT scan.

Results: Active concentration of MMP 9 and TIMP 1 were significantly positively correlated with thrombus thickness with Pearson correlation coefficient, r of 0.45 and 0.42 respectively. MMP 2 (active and total) and TIMP 2, showed a positive correlation although not statistically significant. MMP 8 (active and total) showed a non significant negative correlation with thrombus thickness.

Conclusion: Intraluminal thrombus thickness has a significant positive correlation with active MMP 9 (elastase) and TIMP 1 and a negative correlation with MMP 8 (collagenase). This may have some implication for AAA expansion and rupture.

Hepatobiliary, P002

Comparison of The Effect of Ischaemic Preconditioning vs Chemical Preconditioning on Ischaemia-Reperfusion Injury and Apoptosis

Akcun Alper1, Tuna Ömer2, Sozuer Erdogan3, Akyildiz Hizir4, Akgun Hulya5, Muhtaroglu Sabahattin6
1 Erciyes University Medical Faculty, Department of General Surgery, 2 Erciyes University Medical Faculty, Department of General Surgery, 3 Erciyes University Medical Faculty, Department of General Surgery, 4 Erciyes University Medical Faculty, Department of General Surgery, 5 Erciyes University Medical Faculty, Department of Pathology, 6 Erciyes University Medical Faculty, Department of Biochemistry

Aim: Comparison of the effect of ischaemic preconditioning (IPC) versus chemical preconditioning (CPC) on ischaemia-reperfusion (I-R) injury and apoptosis in liver ischaemia-reperfusion model in rats.

Material and Method: We used 40 Wistar–Albino female rats. All of these rats were between 200–275 gram weight. We composed 5 groups each containing 8 rats. Ketamine and xylasine were used for anaesthesia. We placed jugular venous catheter to all of the rats except sham group and infused serum physiologique for one hour before surgery. We performed midline incision for laparotomy. Rats in sham group were sacrificed after portal dissection. Ninety minutes reperfusion was performed following 90 minutes ischaemia in control group. Ischaemic preconditioning was performed in one group. We performed CPC by bolus administration of 1000 µg/kg adenosin intravenously. In last group IPC + CPC was performed together in same way with other groups. We sacrificed all of rats by taking blood samples from vena cava inferior for evaluation of AST, SLT, LDH after resection of 2/3 of the liver.

Results: Serum AST, ALT and LDH levels were significantly higher in control and study groups compared to sham group (p < 0.001). In study groups these levels were significantly lower than control groups (p < 0.001), but there was no statistically significant difference among study groups (p > 0.5). We also had same results in hepatic MDA and p53 levels. We detected severe cellular damage in control group. In contrast, we found that the damage was lower in study groups than the control group. But there was no statistically significant difference among study groups (p > 0.5).

Conclusion: Both IPC and adenosine induced CPC reduces I-R injury and apoptosis in liver. But usage of these two methods together have no effect on reducing I-R injury and apoptosis.

Wound healing. P003

The comparison of phospholipid and sodium hyalurinate and carboxy-methylcellulose based antiadhesive membrane intraperitoneal adhesions

Akyildiz Hizir1, Acan Alper2, Sozuer Erdogan3, Kucuk Can4, Yilmaz Namik5, Deniz Kemal6
1 Erciyes University Medical Faculty Department of General Surgery, 2 Erciyes University Medical Faculty Department of General Surgery, 3 Erciyes University Medical Faculty Department of General Surgery, 4 Erciyes University Medical Faculty Department of Pathology, 5 Erciyes University Medical Faculty Department of Pathology

Aim: The aim of this experimental study is to compare the preventive effect of the sodium hyaluronate and carboxy-methylcellulose-based antiadhesive membrane (seprafilm) and phospholipid on adhesion formation after abdominal operation.

Materials and methods: Forty two 4 month old female Wistar–Albino rats were subjected to standardized lesions by cauterization of the cecum and uterine horn. They were divided randomly into 3 groups containing 14 rats each: group 1 (control) = operative procedure without further treatment, group 2 (sepra-film) = operative procedure with an antiadhesive membrane, 2x1 cm of seprafilm was interposed beneath the peritoneal incision, and group 3 (phospholipid) = operative procedure with intraabdominal phospholipid administration. The extent and severity of adhesions at the operative site were evaluated. Light microscopic examination was performed to determine the degrees of inflammation and fibrosis. These two histologic parameters were scored semiquantitatively by a pathologist who was blinded to the treatment regimen.

Results: Rats in the control group formed extensive adhesions. In comparison with the control group, the adhesion scores were significantly less in the 2 other groups. The semiquantitative scores of the degree of inflammation and fibrosis correlated closely with the total adhesion scores and were less in groups 2 and 3 (p < 0.005).

Conclusions: Intraperitoneal administration of phospholipid and seprafilm appears to significantly decrease rates, extents, and severity of postoperative intraperitoneal adhesions.
The Effects of Melatonin and N–Acetylcysteine on Obstructive Jaundiced Rats

Aritas Yucel1, Acan Alper2, Ekici Fatih3, Aykildiz Hizir4, Saraymen Recep5, Deniz Kemal5
1 Erciyes University Medical Faculty, Department of General Surgery, Kayseri, Turkey, 2 Erciyes University Medical Faculty, Department of General Surgery, 3 Erciyes University Medical Faculty, Department of General Surgery, 4 Erciyes University Medical Faculty, Department of Biochemistry, 5 Erciyes University Medical Faculty, Department of Pathology (acakcan2002@yahoo.com)

Aim: The aim of this experimental study is to investigate the effects of N-acetylcysteine and melatonin on the cholestasis and their protective effects on liver and renal injury.

Materials and Methods: Forty eight rats were used in the study. Rats were divided into three main groups as sham, main control, and study groups. Control and study groups have also been divided into subgroups. Main control group divided early sacrifice group, control group, study group is divided into melatonin, N-acetylcysteine and melatonin & N-acetylcysteine groups. In study and control groups, a laparotomy was performed and the common bile duct was ligated and divided. Five days after the first operation, from early sacrifice group, blood samples, and liver and renal tissues were collected. For study groups from the fifth day to day 10 melatonin, N-acetylcysteine, melatonin & N-acetylcysteine solutions were applied subcutaneously, saline to the sham and control group. At the day ten from the all groups blood samples, and liver tissues and renal tissues were collected.

Results: Bilirubin, AST, ALT, BUN, creatinine, total bilirubin levels were significantly higher in the control group. AST, ALT, total bilirubin, BUN, creatinine levels were significantly higher in the control group at the end of day 10. Among the melatonin group, N-acetylcysteine group and melatonin & N-acetylcysteine group all biochemical parameters were not different. Also the values of MDA and NO for control group were higher than being elevated, it is a safe procedure with regard to the facial nerve, which potentially interferes with mid-facial growth. However, there have been no studies to date documenting actual long-term growth problems. Moreover, the aetiology, if any, of this effect is not clear.

Aim: To study the influence of the vomer flap in primary repair of complete cleft lip and palate.

Methods: A retrospective study, using an objective reproducible method of comparison, by way of dental impressions. All children included in the study had complete cleft lip and palate which was subsequently surgically repaired. Each child had two dental impressions, one pre- and one post-operatively. Each child was randomly assigned to one of two groups, those treated with the vomer flap procedure and those treated by alternative methods of surgical correction. Suitable comparable measurements of the dimensions of the dental impression–intermaxillary distance, antero-posterior distance, depth, and cleft gap–were taken.

Results: The only measurement that showed a significant difference between the two groups was the anteroposterior distance. Those children who had undergone the VF procedure had significantly shorter mid-facial lengths when compared to those children who had had alternative corrective surgery.

Conclusion: The vomer flap procedure could have an adverse effect on maxillary growth. Furthermore, this affect seems to be related to the orientation of the resultant scar.

Plastic P005

A new minimal access facelift technique: the platysma-SMAS plication (PSP)-LIFT

Berry MG1, Davies Dai2
1 Institute for Cosmetic & Reconstructive Surgery, London, UK, 2 Institute for Cosmetic & Reconstructive Surgery, London (miles.berry@curie.net)

Introduction: Myriad different facelift techniques have been described and the current vogue is one of minimal access whilst aiming to preserve the effects of more invasive procedures. Tomard’s MACS (minimal access cranial suspension) is well-established, but has certain limitations, particularly with respect to its vectors and effect on the neck. A novel evolution, the ‘platysma-SMAS plication’ lift, is a combination ‘half-way house’ that seeks to balance procedural invasiveness with recovery time and aesthetic outcome.

Material and Methods: The initial 117 consecutive patients to undergo platysma-SMAS plication have been followed prospectively with assessment of complications and aesthetic results. The outcomes have also been analysed with respect to patient and surgeon satisfaction using a linear analogue scale from 1 to 5 (poor to excellent).

Results: Overall the haematoma rate was 3.4% (n = 4) as was transient facial nerve dysfunction (n = 4). 5 patients experienced a delay in wound healing, which had entirely resolved by 8 weeks. Satisfaction scores of 4.43 and 4.45, were obtained from patients and surgeons respectively. Conclusions: platysma-SMAS plication has been found to give good, and reproducible, results, particularly for jowling and cheek regeneration. As the SMAS is plicated rather than being elevated, it is a safe procedure with regard to the facial nerve, which has furthermore been shown to be easily taught to less experienced aesthetic surgeons.

Integrins as prognostic indicators in human breast cancer

Berry MG1, Nitch-Smith HF2, Gui GPH2, Carpenter R4
1 St Bartholomew’s, London, UK, 2 St Bartholomew’s, London, 3 Royal Marsden, London, 4 St Bartholomew’s, London (miles.berry@curie.net)

Introduction: Integrins are the cell surface heterodimers fundamental to cell proliferation, migration and survival. Altered levels of certain integrin subunits have been found to influence tumour cell invasion and metastasis. The aim of this study was the correlation of long-term survival in a group of patients with their original breast cancer integrin profile that have been under surveillance for 10 years.

Patients and methods: Integrin expression on samples from 95 consecutive patients was assessed using monoclonal antibodies to the subunits, α1,α2,α3,α5 and β1,β3,β4 and 5. Survival analysis was performed with Kaplan-Meier statistical evaluation.

Results: Analysis of our data showed statistically significant relationships between increased o6 (p = 0.016) subunit expression and decreased survival. Additionally, decreased β3 (p = 0.020) and iv (p = 0.024) expression correlated with reduced survival.

Conclusion: The importance of various integrin subunits to tumour cell invasion and metastasis in-vitro has been documented in numerous publications: this study translates that research into a clinically-relevant setting. It is apparent from our study that the original integrin subunits expressed by a patient’s tumour can provide important long term prognostic data and allow refined
stratification of management strategies. In breast cancer, the α6, β1 and αv subunits appear to have most influence on prognosis.

Oncology P008

Primary Small Bowel Tumours – a series study

Bhattacharjee Mr Santanu1, Bhattacharjee Mr Atanu2, Bhattacharya Mr Sayantan1, Chowdhury Mr A3
Blackpool Victoria Hospital, Blackpool, UK (bhattacharjee_santanu@hotmail.com)
Objective: To carry out a systematic review of all the cases of primary tumours of small bowel that has been treated over the last ten years in our hospital. We wanted to find out how these tumours were diagnosed, as majority of them present late and have vague symptoms.

Method: A retrospective study of patients who were treated between 1996 and 2006 was carried out. The presenting complaint and the investigations carried out were reviewed. The delay between first presentation of symptoms and definitive diagnosis noted, and this effect of the delay on final outcome documented. Tumours arising from Peritumoral area, pancreas and common bile duct were excluded.

Results: 34 patients had primary tumours of which 19 had adenocarcinoma, 9 had villous adenoma, 2 had GIST and 1 had leiomyoma. Mean age at diagnosis was 73 years and there was a female preponderance of 1:2:1:0. Presentation was with iron deficiency anaemia in 52% of the patients and 26% presented with acute abdomen from obstruction or perforation. 21 patients had malignant tumours and of them 13 had liver metastasis. Half of all the tumours were in the second part of the duodenum and majority of tumours with distant spread were in duodenum.

Conclusion: Since majority of these tumours are in duodenum, the most common and effective way of diagnosis was by endoscopy. Prompt investigation of vague abdominal symptoms can often give an early diagnosis of these tumours and significantly improve outcome. Fast track access by General practitioners will improve chances of diagnosis.

Gastrointestinal P009

Colorectal cancers – a new approach to care pathways

Bhattacharjee Dr Atanu1, Bhattacharjee Mr Santanu2, Bhattacharya Mr Sayantan1, Ravi Mr S3
1Blackpool Victoria Hospital, Blackpool UK, 2same as above, 3same as above (bhattacharjee_santanu@hotmail.com)
Objective: To evaluate the impact of nurse-led rehabilitation units on hospital stay for patients operated for primary colorectal cancers in a district general hospital.

Method: We undertook a retrospective audit of 165 patients (91 cases from 2006 and 74 cases from 2005) operated for primary colon cancer. The average durations of hospital stay for different operative procedures (excluding renal transplantation, organ preservation and definitive diagnosis noted, and this effect of the delay on final outcome documented. Tumours arising from Peritumoral area, pancreas and common bile duct were excluded.

Results: The mean length of hospital stay was 10.16 days in 2006 and 15.46 days in 2005. Maximum duration of hospital stay was observed in cases of high anterior resection-a mean of 16.25 days in 2005, reduced to 11.25 days in 2006. Maximum reduction of duration of stay was observed among patients undergoing left hemi-colectomy-from a mean of 16 days in 2005 to 6.33 days in 2006. Longest duration of stay was observed among patients aged above ninety-years-a mean of 21 days in 2005 and 17days in 2006.

Conclusion: There is a significant reduction of the length of hospital stay for all operative procedures and age groups. This is achieved by implementing transitional care pathways between secondary care and community. In future, it will increase turnover of cancer surgery leading to a more efficient health care system.

Orthopedic P011

Myofibroblastic Sarcoma of the Thumb Presenting as Unhealed Paronychia

Biju KV1, Paringe Vishal2, Shafqat Syed3
1Scunthorpe General Hospital, Scunthorpe, UK, 2Scunthorpe General Hospital, 3Scunthorpe General Hospital (vishalparinge@doctors.org.uk)
Myofibroblastic tumours are soft tissue neoplasms arising from myofibroblasts, which are ubiquitous cells sharing ultrastructural features of muscular and fibroblastic cells. High grade myofibroblastic sarcoma has been reported in both children and adults. In children these tumours are located usually in head and neck region. In adults, they present as a slowly growing painless mass in hands or feet. Both sexes are equally affected. We report a 47 year old male patient who presented to the orthopaedic department in November 2001 with an unhealing paronychia of the thumb. He had a wedge resection of the thumb nail 3 months before for the same problem. On surgical debridement, a friable mass was curedtted out from the cavity of distal phalanx. Histopathological examination of the curettings showed features of myofibroblastic sarcoma. Patient further underwent a partial amputation of the involved thumb in February 2002 with surgically clear margins confirmed on histological examination. He was not given any chemotherapy and radiotherapy. He had been regularly followed-up with chest X ray to look for pulmonary metastasis and clinically for local recurrence. At the last follow-up in October 2007 there was no evidence of local recurrence or pulmonary metastasis. This case is unusual with its presentation as an unhealed paronychia in a healthy individual and no similar instances of myofibroblastic sarcoma has been reported in the literature with similar presentation.
Transplantation, Organ preservation_1 P012

Exotic autogenous arteriovenous fistula on forearm – is it really efficacious?

Bojakowski K1, Mazurkiewicz A2, Dratzick M3, Andziak P4
1 Department of General and Vascular Surgery, CSK MSWiA, 2 Department of General and Vascular Surgery, CSK MSWiA, 3 Department of General and Vascular Surgery, CSK MSWiA, 4 Department of General and Vascular Surgery, CSK MSWiA (kaz@emdke.pwn.pl)

Background: Efficient vascular access is necessary for successful dialysis of patients with end-stage renal disease. Distal forearm AVF between radial artery and cephalic vein is of first choice site for AVF creation. Accessible results of AVF for dialysis between other native vessels on forearm are very limited.

Material and Methods: We compared outcome of regular radio-cephalic AVF (n = 70) with nonstandard forearm AVF (n = 7). Nonstandard forearm native vessel fistulas included AVF between ulnar artery and basilic vein (2), transposed basilic vein anastomosed to distal part of radial artery (n = 2), or proximal part of radial artery (n = 2), or short fragment of cephalic vein anastomosed to distal radial artery (n = 1). All vessels used for AVF creation fulfilled ultrasonography criteria – diameter exceeding 2 mm, no stenosis or occlusion.

Results: Early, intraoperative success was achieved in all nonstandard AVF (100%), and 97.1% of standard AVF. Complications in exotic AVF were observed in 6 out of 7 patients (85.7%). Primary patency of nonstandard AVF was 42.8%, 14.3% after 12 and 24 months respectively, secondary patency was 57.2% and 14.3% after 12 and 24 months respectively. 2 patients underwent PTFE reconstruction of stenosis in basilic vein. Extensive and numerous stenoses in vein were main cause of disqualification from AVF reconstruction. Primary (71.4%, 58.6%) and secondary (78.5%, 61.4%) patency were significantly better in standard AVF group after 1 and 2 years (p < 0.05).

Conclusions: Nonstandard AVF is an option for vascular creation which bears some benefits for patients but it should not be recommended for routine application. Some patients do benefit from arm fistula or implantation of a prosthetic graft for AVF more than numerous re-do operation of malfunctioned AVF on forearm. Patients with AVF dysfunction risk factors, such as diabetes mellitus, history of previous malfunctioning AVF, should be qualified to arm AVF rather than nonstandard forearm AVF.

Hepatobiliary_1 P013

Management and mid-to-long-term results of early referred bile duct injuries during laparoscopic cholecystectomy

Can Mehmet Fatih1, Yagci Gokhan2, Ozturk Erkan3, Sahin Mutlu4, Cetiner Sadettin1, Tufan Turgut6
1 Gulhane School of Medicine, Department of Surgery, Ankara, Turkey, 2 Gulhane School of Medicine, Department of Surgery, 3 Gulhane School of Medicine, Department of Surgery, 4 Gulhane School of Medicine, Department of Surgery, 5 Gulhane School of Medicine, Department of Surgery, 6 Gulhane School of Medicine, Department of Surgery (mfcan@superonline.com)

Background/Aim: Bile duct injuries (BDI) usually need operative repair and remain as a challenge even for surgeons who specialize in hepatobiliary surgery. The objective of this study was to define the presentation, in-hospital management, and mid-to-long-term outcome of BDIs during laparoscopic cholecystectomy (LC) referred to a tertiary center in their early period.

Methods: From January 1996 to January 2006, 31 patients with BDI sustained during or after LC were treated at our institution. Patients were referred to our center from 18 community hospitals in their first 15 postoperative days. Patients’ charts were retrospectively reviewed; presentation, management, and follow-up details recorded at the primary hospitals and at our institution were documented.

Results: There were 5 patients with type-A and one with type-C injury, according to Strasberg classification. The remainders had a major BDI. The mean time to referral was 1.45 (median 2) days. Treatment methods chosen after referral were as follows: drainage-observation in 2 patients (6.5%), nasobiliary drainage in 4 (12.9%), endoscopic sphincterotomy plus biliary stenting in 1 (3.2%), and surgical intervention (duct-to-duct anastomosis or biliary-enteric reconstruction) in 24 patients (77.4%). Although a success rate of 83.3% was achieved in the early period, 10 patients (32.3%) had late postoperative complications (stricture and cholangitis), and of these, 3 required endoscopic stent placement, and 7 patients underwent a biliary diversion with Roux-en-Y Hepaticojejunostomy. One out of 24 patients with long-term follow-up developed biliary cirrhosis, and one patient with malignancy expired.

Conclusions: Minor BDIs can be satisfactorily treated with endoscopic intervention. Extended lateral injuries, complete CBD transections, and long segment stenosis usually require surgical therapy. Duct-to-duct anastomosis may be an option as the first-line therapy in selected patients after early referral, though many patients eventually require a Roux-en-Y hepaticojejunostomy.

Transplantation, Organ preservation_2 P014

In-111-OXINE vs Tc-99m-MIBI as a marker for transplanted myoblasts

Castedo Evaristo1, de Haro Javier2, Santos Martin3, Chaparro Dolores4, Maganto Paloma5, Escudero Cristina6
1 Hospital Universitario Puerta de Hierro. Madrid, Spain, 2 Hospital Universitario Puerta de Hierro. Madrid, Spain, 3 Hospital Universitario Puerta de Hierro. Madrid, Spain, 4 Hospital Universitario Puerta de Hierro. Madrid, Spain, 5 Hospital Universitario Puerta de Hierro. Madrid, SPAIN. 6 Hospital Universitario Puerta de Hierro. Madrid, Spain (cescudero.hptp@salud.madrid.org)

Introduction: Regenerative medicine is growing as it allows the replacement of impaired cell populations to recover organ function. We study autologous myoblast transplantation into heart.

Aim: Comparison of Tc-99m-MIBI and In-111-oxine as markers to locate transplanted myoblasts.

Methods: In a first part of the study, cultured myoblasts from NZW rabbit femoral biceps were labelled with either Tc-99m-MIBI (half life: 6 hours) or In-111-oxine (half life: 72 h). The procedure did not affect cell viability, and the labelling efficiency was similar in both cases. Therefore, In-111-oxine was chosen to continue the study, due to its longer half life. The myoblast suspensions were incubated with 23.5 MBq of In-111-oxine for 30 minutes at 37°C. (labelling efficiency 30–40%). NZW rabbits received autologous transplants of myoblasts into lateral side of left ventricle (20–25 million, viability: 97–99%), through left thoracotomy. Twenty-four hours post-transplant “in vivo” gammagraphy was performed. Next, the animals were sacrificed and the activity was assessed in blood, heart, lung, liver and kidney.

Results: Gammagraphic images showed that activity accumulates in the injection areas. Post-mortem study of the different organs confirmed this.

Conclusions: In-111-oxine can be used to follow transplanted myoblasts. It presents the same advantages and a longer half-life than Tc-99m-MIBI.

Sepsis, Infection, Immunity P015

Imaging of different cell types transplanted into thymus by nuclear medicine tools. Implications in induction of tolerance

Castedo Evaristo1, Mula Nieves2, de Haro Javier1, Santos Martin4, Escudero Cristina5, Maganto Paloma6
1 Hospital Universitario Puerta de Hierro. Madrid, Spain, 2 Hospital Universitario Puerta de Hierro. Madrid, Spain, 3 Hospital Universitario Puerta de Hierro. Madrid, Spain, 4 Hospital Universitario Puerta de Hierro. Madrid, Spain, 5 Hospital Universitario Puerta de Hierro. Madrid, Spain, 6 Hospital Universitario Puerta de Hierro. Madrid, Spain (cescudero.hptp@salud.madrid.org)

Introduction: Biodistribution of transplanted cells is not exactly known in mammals. Intrathymic cell injection could play a role in induction of tolerance to organ/cell transplants.

Aim: Use of a routine technique that allows locating the graft immediately after the implant.

Methods: NZW rabbits were divided into two groups and transplanted into thymus with either myoblasts (10 million) or hepatocytes (10–20 million) labelled with In-111-oxine. Two days post-implant the animals were studied.
“in vivo” in a gammacamera and afterwards the following organs were removed and the activity counted in them: blood, thymus, kidney, liver, heart, spleen, lung. Labelling: Isolated cells were incubated for 30 min. at 37°C, with In-111-oxine (17–25 MBq). The labelling efficiency was 10–12% for hepatocytes and 30–40% for myoblasts.

Results: The gammagraphic study showed an intense activity located in thymus in all animals. No other organ but kidney (excretion via) showed accumulation of activity. The counting of the different organs was compatible and confirmed the gammagraphic images.

Conclusions: Despite the low labelling efficiency, In-111-oxine is an adequate label for both hepatocytes and myoblasts, in order to confirm the location of these and other cell types that may induce tolerance upon interaction with thymic populations.

Sepsis, Infection, Immunity 2 P016

Interruption of afferent lymphatics draining S.epidermis infected skin is accompanied by acute dermatitis but low response of regional lymph nodes

Cąkała Marta1, Zaleska Marzanna2, Oliszewski Waldemar L3
1, 2Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 3Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw; Poland.

Skin microbes normally penetrating epidermis during hand work or walking are retained in the skin and subcutis because of lack of lymph drainage and evoke host reaction.

Aim: To study lymph node cellular reaction to bacterial antigens before and after ligation of afferent lymphatics.

Materials & Methods: Group I. S. epidermidis was injected daily for 7 days into WIS rat paw web tissue in saline containing 7.5x10^7 cells. Group II. S. epidermis was injected as in group 1 after ligation of lymphatics below the popliteal lymph node. Isolated nodes were attached on 8. They were weighed, the cell number was counted and cells were stained with mAbs for FACS and immunohistochemical analysis.

Results: Group I. Skin contained some His48 granulocytes and MHCII cells. The popliteal lymph nodes became enlarged on the bacteria injected side. There was an increase in lymph node weight and cell concentration per g of tissue, compared to controls by factors 2.21 and 3.91 respectively (p < 0.05). Moreover, there was an increase in FACS analysis in percentage of OX6, OX7, CD54(ICAM-I) and ED1 (macrophages) subsets. Immunohistochemical pictures showed increase in percentage of OX6 (migrating dendritic cell), MHC II and His48 (granulocytes) cells in the subcapsular, follicle, paracortex and medullary areas. Group II. After ligation of afferent lymphatics the weight of nodes was not significantly increased. Skin showed presence of multiple granulocytes, MHC II, ED1 (macrophages) and OX62 cells. Popliteal lymph nodes contained evidently less of OX62, His48 and MHCII cells than in group I (p < 0.05).

Summary & conclusions: Afferent lymphatics transport microbial cells and/or microbes phagocytized by dendritic cells and macrophages to the regional node. Local skin reaction is limited, whereas lymph nodes reveal acute reaction with mobilization of granulocytes from blood perfusing nodes. Interruption of lymphatics saves nodes but skin reaction is strong and long-lasting. These observations seem to explain why damage to lymphatics during mastectomy or groin dissection is followed by recurrent attacks of skin inflammation.

Transplantation, Organ preservation 2 P017

Tracing of distribution of intrasplenic transplanted hepatocytes by nuclear medicine techniques

Chaparro Dolores1, Mula Nieves1, de Haro Javier1, Arahuetez Rosa Marta2, Escudero Cristina3, Maganto Paloma4
1Hospital Universitario Puerta de Hierro, Madrid, Spain, 2Hospital Universitario Puerta de Hierro, Madrid, Spain, 3Hospital Universitario Puerta de Hierro, Madrid, Spain, 4University Compleutense, Madrid, Spain, 5Hospital Universitario Puerta de Hierro, Madrid, Spain, 6Hospital Universitario Puerta de Hierro, Madrid, Spain (cescudero.bptb@salud.madrid.org)

Introduction: One problem in hepatocyte transplantation is their possible migration that may result in embolism, infarction or inefficacy of the graft.

Aim: Use of an innoxious technique allowing to locate the graft after the implant and confirming that it does not give rise to any complications.

Methods: NZW rabbits were donors and recipients. They were transplanted into spleen with 111-In labelled hepatocytes (200 million, viability: 79–95%). Two days later the animals were studied “in vivo” in a gammacamera and afterwards the following organs were removed and the activity counted in them: blood, kidney, liver, heart, spleen, lung. Procurement and labelling: Hepatocytes were isolated by collagenase perfusion and incubated for 30 min. at 37°C, with In-111-oxine (17–25 MBq; labelling efficiency: 10–12%).

Results: The gammagraphic study showed an intense activity located into the splenic-hepatic area, and some activity in kidneys (excretion via). No other organ showed accumulation of activity. The actual counting showed that the activity was accumulated in both liver and spleen.

Conclusions: In-111-oxine is an adequate label for hepatocytes and likely for other cells types, in order to confirm the location of cells recently transplanted. Intrasplenic transplanted hepatocytes migrate to liver within 48 hours and exhibit a homogeneous distribution. There is no embolism into lungs.

Orthopedic P018

Audit on failure rates of bone grafts and factors affecting it

Chauhan Rohit1, Broome Guy2
1S.H.O–Cumberland infirmary, Carlisle, UK, 2Consultant Orthopaedics & trauma Cumberland infirmary, Newcastle road Carlisle–CA2 7PH UK (rohitichauhan11@hotmail.co.uk)

Background: There are approximately 170,000 fractures in the United States that fail to heal each year that require some form of bone substitute to repair the fracture. Disability caused by graft failure is preventable in most cases.

Objectives: To assess the outcomes of various types of bone grafts, study the factors affecting the failure of the graft and to identify reasons for failure. We also assessed the donor site morbidity. Method Retrospective study. The types of grafts studied were Autografts, Allografts and Xenografts (Tuto bones). All the patients who had bone grafts done in the 6 month time period ranging from 01/07/04 to 31/12/04 were included. Data was collected from case notes, theatre records and X-Rays. Success rate was based on clinical and radiological findings Total of 32 patients, out of which 20 were considered for study; 8 auto grafts, 8 allografts and 4 tuto bones.

Result: There were 4 cases of graft failure, all of which were allograft. Half of all allograft failed, 75% of which were used in lower limbs. There was a 37.5% failure rate in > 50 yr age group, 75% of the cases of graft failure were in the age group of > 50. Significant failure rates were encountered in trauma patients (33.3%) compared to elective admissions (14.2%). There was no donor site morbidity.

Discussion: Higher failure rates were seen with allograft, patients in older age group, trauma patients and in lower limb bone grafts. Change in practice A copy of the audit was taken by the consultants with plans to assess practice and re-auditing. Reference Bone grafts, Derivatives & Substitutes – Urist MR, O’Connor BT, Burwell RG Clinical Orthopaedics and Related Research, No. 371 – Stevenson S, Gross AE Clinical Orthopaedics and Related Research, No. 197 – Malinin TI, Gross AE Campbell’s Operative Orthopaedics.
Transplantation, Organ preservation_2 P020

Kidney transplantation with an ileal conduit formation

Chmura A1, Borkowski A2, Rowinski W3, Radziszewski P4, Kwiatkowski A5, Trzebicki P6

1 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 2 Department of Urology, The Medical University of Warsaw, Poland, 3 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 4 Department of Urology, The Medical University of Warsaw, Poland, 5 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 6 Department of Anesthesiology and Intensive Care, The Medical University of Warsaw, Poland (wojciech.lisik@am.edu.pl)

Dialyzed patients with serious pathology of the lower urinary tract (LUT) had not been qualified for kidney transplantation in Poland till 1999, when the program of transplantation in such patients was begun in our institution.

Aim: Prospective study in the only Polish centre, performing this procedure, to compare the results to standard kidney transplantation.

Patients and methods: Since 1999 we have performed 17 kidney transplants with an ileal conduit formation as urinary diversion, in 6 women and 11 men aged between 17 and 65 years. Out of 13 cadaveric and 4 living-related transplantations 2 ileal conduits had been performed prior to transplantation, 14 others at the time of procedure. 2 kidneys were placed on the left, 14 on the right, positioned up-side down, with ureter anastomosed to ileal loop, fashioned by dissecting 17 cm of ileum near from caecum; bowel was immediately anastomosed, restoring the digestive tract. The deep end of the conduit was closed while the other was brought out as a cutaneous stoma. The ureter was then anastomosed to the blind end of the conduit on a "pig tail" catheter brought out through the stoma for 10–14 days post transplantation. Immunosuppression protocol with CyA Prednisolone and MMF was used.

Results: During follow-up ranging from 1 to 9 years, all but one kidney survived with excellent function. One kidney was lost due to massive fibrosis of the ureter in a patient with severe CMV infection. Several complications like ileus, ureter or loop necrosis, wound infection, hematuria and UTI were treated successfully. Mean creatinine level was 1.2 mg/dL for living-related kidney grafts and 1.4 mg/dL for cadaveric kidneys.

Conclusions: Kidney transplantation in patients with urinary diversion through an ileal conduit is a safe and effective procedure in patients with serious LUT pathology. Higher incidence of UTI does not influence graft function.

Wound healing_1 P021

Perianal fistulae–own experiences in the treatment

Chrzan Barbara-Renata
Department of General and Orthopedic Surgery, Hammerfest Hospital, Norway (waczeke@rambler.ru)

Perianal fistulae as a disease of recurrence course and difficult for treatment makes a serious problem in proctology. Despite of systematically improve method of operation procedure it is not possible to get complete successful results of healing. Now it is known, that efficient procedure in the treatment of perianal fistulae includes only operation procedure, what is not devoid of complications. To the frequent complication we include injury of sphincter function and risk of illness recurrence. Injury of sphincter function is really a serious problem and it induced to search new solutions in the treatment of perianal fistulae. New and very promising method seems to bee fibrin glue treatment. The aim of the study is to evaluate the adequacy of various methods in the treatment of perianal fistulae.

Material and methods: The study was conducted on a group of 10 patients with perianal fistulae treated in the 2-end Department and Proctological Outpatient Department of Public Clinical Hospital Nr.1, Medical Academy in Wroclaw/Poland from 2003 to 2005.

Results: In the study the success rate is 48%. Rest of patients had a recurrence. We did not note injury of sphincter muscle function.

Conclusions: The most effective method of treatment is simple excision with leaving to develop of granulation tissue.
Hepatobiliary. I P023

Histological grading of biliaofibrosis inmicrosurgicalextraphapticcholestasis in the rat

Cruz A1, Losada M2, Sánchez-Patán F3, Corcuer M.T4, Aller M.A5, Arias J6
1 General Surgery Department. Virgen de la Luz Hospital, Cuenca, Spain, 2 General Surgery Department. Virgen de la Luz Hospital, Cuenca, Spain, 3 Surgery I Department. School of Medicine. Complutense University of Madrid, Spain, 4Pathology Service. Carlos III Hospital. Madrid, Spain, 5 Surgery I Department. School of Medicine. Complutense University of Madrid, Spain (manuellosadaruiz@hotmail.com)

A new model of extraphaptic cholestasis, using a microsurgical technique, is performed as an alternative to the traditional model of the bile duct ligated-rat, in order to study the stage of fibrosis in the long-term. Male Wistar rats were divided into two groups: I (Sham-operated, n=9) and II (Microsurgical Cholestasis, n=10). After 4 weeks, portal pressure, types of portosystemic collateral circulation, mesenteric venous vasculopathy, hepatic function test and liver histopathology were studied by using the Knodell index and fibrosis was determined by reticulin and Sirius red stains. The animals with microsurgical cholestasis presented portal hypertension with extraphaptic portosystemic collateral circulation, associated with mesenteric venous vasculopathy and increased plasma levels of bilirubin (6.30±1.90 vs. 0.22±0.37 mg/dl, p=0.0001), alkaline phosphatase (293.00±82.40 vs. 126.30±33.42 U/L, p=0.001), AST (380.00±78.50 vs. 68.33±11.74 IU/L, p=0.0001), ALT (87.60±23.32 vs. 42.22±7.89 IU/L, p=0.0001) and LDH (697.76±75.13 vs. 384.80±100.03 IU/L, p=0.0001). On the contrary, plasma levels of Albumin decreased (2.72±0.12 mg/dl versus 2.99±0.10, p=0.001). The microsurgical resection of the extraphaptic biliary tract in the rat produces an experimental model of hepatic inflammation, characterized by a high Knodell hepatic activity index (4), bile proliferation and fibrosis.

Orthopedic P024

Polymorphisms of i6 gene promoter is responsible for disturbances in fracture repair

Czapnik Zaneta1, Szczyśn Grzegorz12, Olszewski Waldemar L3, Interewicz Bozena3, Stachyra Emilia4, Rutkowski Joanna5
1 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Science, Warsaw, Poland, 2Department of Orthopedics and Traumatology, Medical University, Warsaw, Poland, 3Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 4Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland (czol@vmd.kt.waw.pl)

Despite improvement in operative technique, reduction of bacterial infections and improved pharmacotherapy, non-healing of fractures affects about 10–15% of patients. Genetic factors are reported to predispose to the delayed healing. The aim of study was to search for genetic factors predisposing to disturbances in bone union.

Patients & methods: Venous blood specimens were harvested from patients (n=27) treated due to disturbances in bone fracture repair (malunions, non-unions), diagnosed clinically and by standard X-ray and CT scans. DNA was isolated from blood cells for determination of polymorphism of IL-6 (G-174C), CRP(G1059C) and CDH1(C-159T) genes IL-6 5'-TGGACTTCAGCTTTACTTTGTTT-3', 5'-CTGATTTGAACTTATTAAG-3', CRP F 5' GATCTGTTGATGCTGA GAAAACTCTC3', R 5' GAGGTCACGAGACGACGGTG3'; CDH1 5' GTGCACCAAGATGAGTTCA C3', 5' CCGCAGCCGAAATCTTCATC3'. The obtained results were compared with those from 110 healthy blood donors without disturbances in wound healing or predisposition to infection in the past history.

Results: The obtained data showed significant differences in the frequency of mutations in IL6 in the patients group (CC15%, and GC 37%, whereas GG48%) when compared with controls (CC4%, GC 0%, whereas GG96%). There were no significant differences in CRP and CD14 allele representation.

Discussion: Our observations points to the possibility of genetic predisposition to fracture non-healing in IL-6 gene. IL-6 is a proinflammatory cytokine participating in the activation of the immune response against infection. Since the mutations in IL-6 gene promoter were reported to correlate with lower serum IL-6 concentration. Our results suggest that this mutation may impair healing by predisposing to infection. This finding may be of interest, since our previously reported data showed the presence of bacteria using standard microbiological isolation technique in 24% and bacterial DNA in the callus specimens obtained from patients with delayed unions.

Conclusions: High frequency of mutations in the IL6 gene correlates with non-healing of bone fracture.

Transplantation, Organ preservation I P025

Should we use anti-HCV (+) cadaveric donors in Poland in respect of risk factors not related to HCV infection

Czerwiński Jarosław1, Pszenny Anna2, Kasprzyk Tomasz3, Chmura Andrzej4, Makowska Piotr5, Walaszewski Janusz6
1Polish Transplant Coordinating Center Poltransplant, Department of Surgical and Transplant Nursing Warsaw Medical University, Warsaw, Poland, 2Department of Surgical and Transplant Nursing Warsaw Medical University, 3Department of General and Transplant Surgery Warsaw Medical University, 4Department of General and Transplant Surgery Warsaw Medical University, 5Polish Transplant Coordinating Center Poltransplant (j.czerwinski@poltransplant.pl)

In Poland 2.5% referred cadaveric donors (CD) are anti-HCV(+). Kidneys from such CD are transplanted, hearts and livers are not due to safety principles. The analysis established, if anti-HCV (+) CD could be a source of livers in the matter of criteria other than anti-HCV (+). In period 2001–2006, 3750 potential CD were referred. Organs were harvested in 1079(82%). In the remaining 671(18%) there was no retrieval due to families’ refusal (365,10%) or medical contraindications (306,8%). In the number of CDs medically discarded, 283 were refused for factors not related to anti-HCV (+), 23 due HCV risk. In the number of actual kidney donors, 63 were anti-HCV (+). In the same period 952 liver transplantations(LTx) were performed. 86 anti-HCV (+) potential liver donors(LD) (23 discarded from donation, 63 kidney donors) were included to Group A, 952 anti-HCV(−) real liver donors to Group B. 12 risk factors(RF) were compared (age > 60, alcohol ingestion, ICU stay > 4 days, hypotension, dopamine > 10 μg/kg/min, sodium > 160 mmol/l, bilirubin > 2mg/dl, AST/ALT > 150UI/l, INR > 1.5, anti-HBc (+) and anti-HCV(+). Each RF was scored for 1 point, points were summarized, an average score was calculated. In Group B an average score was 1.0, in Group A – 2.6. For further analysis 71 of 86(83%) anti-HCV (+) CDs were excluded having ≥ 2 risk score (they had to be refused from LD even if they had be not anti-HCV (+). 15 anti-HCV (+) CDs with score ≤ 2 were analyzed. In 3 cases liver pathology were found, for 4 there were no recipients. Only 8 anti-HCV (+) donors did not present other RF than HCV and probably would have been utilized. Anti-HCV (+) CD cumulative RFs for LD (2,6 per CD in comparison with utilized LD = 1.0). This would lead to refusal of such donors independently to the anti-HCV (+). Only 8(9%) anti-HCV (+) CDs could have potentially been utilized for LTx, what could increase the number of Tx of only 0,8%.
The influence of local tumour perforation on survival following colonic cancer

David Jayne1, Amit Bishnoi2
1 Royal College Of Surgeons, UK, 2 Royal College of Surgeons, Edinburgh (amit.bishnoi@gmail.com)

Introduction: Colonic cancers often present with perforation at the primary site. The influence of perforation on survival and therefore its relevance for adjuvant therapy are unknown. This study aimed to compare perforated with T-stage matched non-perforated colon cancers in terms of clinical presentation, operative findings, histological data, and survival.

Methods: Perforated colon cancers and a T-stage matched cohort of non-perforated cancers were identified from a pathological database covering the period 1996 to 2003. Patient demographics, operative findings, histological data, and overall survival were entered into a statistical database (SPSS v12.01).

Results: Complete data was retrieved on 52 perforated and 82 T4 non-perforated colon cancers. At operation, 25/52 (48%) of the perforated cancers were associated with generalised peritonitis, 30/52 (58%) with local invasion, and 13/52 (25%) with distant metastasis. 12/52 of the cancers showed only microscopic evidence of perforation. No difference was detected between cancers with microscopic and macroscopic perforation in any of the clinical or histological parameters examined. Comparative analysis between the perforated and the T-stage matched non-perforated cancers showed that patients with perforated cancers were more likely to have a positive family history (p=0.04), more likely to undergo emergency surgery (p=0.001), less likely to have nodal disease (p=0.02), but more likely to have distant metastases (p=0.01). The 30-day mortality was 17% for perforated and 8.5% for non-perforated cancers. 22/52 patients with perforated and 26/72 with non-perforated cancers received adjuvant chemotherapy (p=0.28). Kaplan-Meier analysis revealed a trend towards worse overall survival in the perforated cancers (p=0.06) with a median survival of 21 months (95% CI 0–43 months) as compared to 39 months (95% CI 23–55) for non-perforated cancers. This difference was most marked in the first months following surgery and disappeared if patients dying within 30 days of surgery were excluded. A Cox multivariate analysis revealed the only predictor of survival for perforated cancers to be the mode of surgery, with emergency surgery associated with a 16 times increased risk of death (95% CI 1.7–200, p=0.01) compared to elective surgery.

Discussion: Perforated colon cancers tend to have a worse prognosis compared to non-perforated T4 cancers. This may be explained by the increased need for emergency surgery and the higher 30-day mortality rate. If patients with perforated cancers survive surgery their prognosis is poor but similar to non-perforated T4 cancers. Tumour perforation per se is not an indication for adjuvant therapy.

Gastrointestinal P028
Determination of vitamin D receptor gene BsmI (C>T) polymorphisms in patients with type 2 diabetes mellitus using PCR-RFLP in a Turkish population

Dilmec Fuat1, Uzer Elmaz2, Uzunkoy Ali3
1 Harran University School of Medicine Departments of Medical Biology, Turkey, 2 Harran University School of Medicine Departments of Internal Medicine, 3 Harran University School of Medicine Departments of General Surgery (dzizunkoy@yahoo.com)

Background: The etiology of type 2 diabetes mellitus (T2DM) is likely to involve defects of both insulin secretion and insulin signaling. One of the most important contemporary medical problems is an epidemic of T2DM.

Aim: We aimed to determine the relation to BsmI (C>T) polymorphisms of VDR gene with T2DM in a Turkish population. VDR gene was investigated as a candidate gene for type 2 diabetes mellitus (T2DM).

Material and Methods: Fifty-four patients with T2DM and 149 healthy individuals were recruited for this study. The VDR gene polymorphism was analyzed by using polymerase chain reaction (PCR) and endonuclease digestion with BsmI (RFLP).

Results: Our study findings pointed out that the frequency of VDR BsmI TT genotype in T2DM patients was significantly increased compared to healthy controls (31.8% versus 16.1%, respectively, p=0.030). In contrast, the frequencies of the other genotypes and alleles in this polymorphic site were not significantly different between both study groups.

Conclusion: The determined TT genotype in VDR gene represents a major risk factor for T2DM in our population.
Background: Noninsulin-dependent diabetes mellitus (NIDDM), or type 2 diabetes (T2DM), is a disorder of late onset with appreciable genetic basis. A several polymorphisms in the various genes, including CTLA-4 and CD28 genes regulate T cell function, and have an association with diabetes mellitus. Aim: We aimed to determine whether specific polymorphisms in cytokotive T-lymphocyte antigen 4 (CTLA-4) and CD28 gene were associated with T2DM susceptibility.

Material and Methods: EDTA-Bloods were taken from 216 subjects (54 patients with T2DM and 162 healthy controls), and DNA was isolated. We used a PCR-RFLP method to detect the rates of +49(A→G) and +318(G→T) of CTLA-4, and IVS3+1T>C of CD28 gene polymorphisms in T2DM patients.

Results: Our results suggested that the frequency of CTLA-4 +49 G allele in T2DM patients was significantly increased compared to healthy subjects (29.6% versus 20.1%, respectively, p=0.046). In contrast, the frequencies of the other polymorphic sites of CTLA-4 and CD28 genes were not significantly different between both study groups.

Conclusion: The studied polymorphisms in CTLA-4 and CD28 do not represent a major risk factor for T2DM.

Hepatobilary_2 P030

Examination of Glycogen synthase 2 (liver) gene and its product using Bioinformatics tools

Dilmec Fuat1, Atas Ali2, Uzunkoy Ali3
1 Harran University School of Medicine Department of Medical Biology, Turkey, 2 Harran University School of Medicine Department of Pediatrics, 3 Harran University School of Medicine Department of General Surgery (aluuzunkoy@yahoo.com)

Background: The GYS2 gene, which encodes for the glycogen synthase 2 (liver) (GS), is an enzyme responsible for the synthesis of 1,4-linked glucose chains in glycogen. Aim: We aimed to investigate the structure of the GYS2 gene and its products using bioinformatics tools.

Material and Methods: We investigated the homology, conserved domain, promoter and expression profiles of human GYS2 gene among various vertebrate species using bioinformatics tools, such as NCBI blast, EBI ClustalW, DigiNorthern, Mega4, and Genomatix software.

Results: Our results revealed that GS proteins are conserved among all organisms investigated. They have fully one conserved domain (Glycogen_synth) and a several truncated salt-domains. We noted that the human Glycogen_synth domains have been more conserved among the investigated species. The comparative screening of the promoters demonstrated that GYS2 genes do not seem to have any common conserved transcription factor binding sites.

Conclusion: This study demonstrated that the GS molecules in various species, except Ornithorhynchus anatinus (O. anatinus) and Danio rerio (D. rerio), are well conserved throughout evolution. Comparative screening of the promoter sequences of the human GSY2 gene and its homologues found in the NCBI database revealed that there was no the common transcription factor-binding sites.

Transplantation, Organ preservation_1 P032

A comprehensive program of care for live kidney donors – experience and plans in one centre

Domagala Piotr1, Bieniasz Monika2, Kwiatkowski Artur3, Godzowska Jolanta4, Ostrowski Krzysztof5, Chmura Andrzej6
1 Department of General and Transplantation Surgery, Medical University of Warsaw, 2 Department of General and Transplantation Surgery, Medical University of Warsaw, 3 Department of General and Transplantation Surgery, Medical University of Warsaw, 4 Department of Transplantology and Nephrology, Medical University of Warsaw, 5 Department of General and Transplantation Surgery, Medical University of Warsaw, 6 Department of General and Transplantation Surgery, Medical University of Warsaw (pdomagal@mp.pl)

Donorship carries a risk associated with surgery and further life with one kidney, thus renal transplantation from live donors may only be performed if the donor risk is low. The aim of the paper is to present our own experience in introducing a pioneering complex program of live donor care in Poland.

Patients and method: Between 1996 and 2007 our transplantation team performed ninety-one live donor nephrectomies. Beginning in 2005 we introduced a system of control assessments of the donors (group A). Medical examinations are carried out at 1, 5, 6 and 12 months following surgery and every 12 months thereafter. Beginning at the end of 2007, medical assessments of donors nephrectomized prior to 2005 were commenced (group B).

Results: Majority of group A donors responded to invitations for control assessments. A one-day hospitalization included medical history, physical examination, abdominal US, chest X-ray, renal isotope scan, ophthalmological and nephrology consultation. Donors in both groups had significantly raised serum creatinine and creatinine clearance decreased by 25–15 ml/kg/1.73 m². About 30% of group B donors had previously undiagnosed hypertension. 15% of donors presented abnormal body weight or obesity, as well as disturbances in lipid profiles. Both groups of donors were subjected to quality of life and pro-health behavioral assessment of by standard questionnaires.

Conclusions: A comprehensive system of care for live kidney donors with regular multidisciplinary health check-ups and, if necessary, appropriate treatment provides the donors with a feeling of safety and is aimed at decreasing the number of long-term complications of donorship.
Transplantation, Organ preservation_1 P033

Complications of living donor nephrectomy of living – one center experience

Domagała Piotr1, Bieniasz Monika2, Kwiatkowski Artur3, Trzebicki Janusz4, Durlik Magdalena5, Chmura Andrzej6

1 Department of General and Transplantation Surgery, Medical University of Warsaw, 2 Department of General and Transplantation Surgery, Medical University of Warsaw, 3 Department of General and Transplantation Surgery, Medical University of Warsaw, 4 Department of Anaesthesiology and Intensive Care, Medical University of Warsaw, 5 Department of Transplantation and Nephrology, Medical University of Warsaw, 6 Department of General and Transplantation Surgery, Medical University of Warsaw (pdomaga@mp.pl)

Background: Kidney transplantation from living donors is associated with excellent graft and patient survival. The attention of transplantation teams is focused on the graft and its recipient, as well as on the safety and well-being of healthy donors and is directed at minimizing the number of donor complications. The aim of this study was to analyze the perioperative complications of living donor nephrectomies in our center.

Patients and method: The records of 46 live kidney donors operated on between 2004 and 2007 were reviewed. Mean donor age was 39 years (range 25–57). The donors were predominantly female (61%). Mean hospitalization time was 8 days (range 4–22 days). Open nephrectomy was performed in all cases, usually left-sided (78%). Donors were followed up during hospital stay to assess perioperative complications. Ultrasonography was performed prior to discharge.

Results: Twenty complications were diagnosed in 18 (39%) donors. There were no deaths or thromboembolism. We noted no hemorrhage in the postoperative period. There was one intraoperative hemorrhage. Wound infection and urinary tract infection occurred in 6 (11%) and 3 (6%) cases, respectively.

Conclusion: Nephrectomy in living kidney donors is a safe procedure burdened however by a range of predictable surgical complications.

Minimally invasive P034

Selective uterine artery embolization as a method of treatment of symptomatic uterine fibroids

Durczynski Andrzej1, Rodzoch Radoslaw2, Grzybowski Wojciech3, Jakimiuk Artur4

1 Department of Obstetrics, Women’s Diseases and Oncologic Gynecology Central Clinical Hospital, Warsaw, Poland, 2 Department of Obstetrics, Women’s Diseases and Oncologic Gynecology Central Clinical Hospital, Ministry of Interior and administration, Warsaw, 3 Department of Obstetrics, Women’s Diseases and Oncologic Gynecology Central Clinical Hospital, Ministry of Interior and administration, Warsaw, 4 Department of Obstetrics, Women’s Diseases and Oncologic Gynecology Central Clinical Hospital, Ministry of Interior and administration, Warsaw, Medical Research Center, Polish Academy of Science (rodzoch@газета.pl)

Introduction: Uterine fibroids (uterine myomas) are the most common benign tumor of the female genital tract. They occur in above 30% women age between 40 and 60. About 20% are symptomatic, including: menorrhagia, metrorrhagia, pelvic pain, compression of urine tract and intestines and pregnancy complications.

Aim: The aim of study was evaluation selective uterine artery embolization as a method of treatment of symptomatic uterine fibroids. Volume of the myomas and time of menstrual bleeding before and three months after embolization were compared. Hospitalization time was also evaluated.

Method: From January 2005 to January 2006 there were performed 8 selective embolization of the uterine artery due to uterine myomas. MRI, USG, endometrial biopsy, hormonal tests (FSH, LH, estradiol, progesterone) and biochemical analysis were carried out in all patients before procedure. Three months later was performed control MRI, USG and hormonal tests.

Results: The average age of the patients was 42.8 yr (38–47). Total myomas volume according to USG was estimated to 736,37 cm³ before procedure and to 220,38 cm³ three months after embolization. Total myomas volume was reduced to 515,99 cm³(70%). Total myomas volume by MRI was estimated to 506,75 cm³ before procedure and to 376,58 cm³ three months after procedure. Total myomas volume measured during MRI was reduced to 130,17 cm³ (32.68%). Maximal myomas volume reduction was 75% (32.68%) and 91%. Time of menstrual bleeding was shorter after embolization. Menstrual bleeding lasting 8 days before procedure and was reduced to 5.2 days. Mean time of hospitalization was 1.5 days.

Conclusions: Selective uterine artery embolization is alternative method of treatment symptomatic uterine myomas. This procedure do not disturb menstrual cycle and do shorten time of menstrual bleeding. Time of hospitalization during procedure is relative short.

Sepsis, Infection, Immunity_2 P035

Gene polymorphism of TLR receptors and cytokines and postoperative septic complications in cancer patients

Durlik Marek1, Rutkowska Joanna2, Interewicz Bozena1, Czapolik Zaneta3, Waldemar L5

1 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 2 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 3 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 4 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 5 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland (wbl@mdk.pan.pl)

Objectives: Most published studies on infections and genetic polymorphisms are dealing with sepsis. Only few analyze the correlation between less fulminant inflammatory processes as circumscribed organ or tissue infections or infections causing delayed wound healing. There seems to be only a quantitative difference between these three conditions whereas the basic mechanism remains the same.

Aim: This prompted us to study the polymorphisms of selected allele of cytokines and TLRs in patients displaying sepsis or local response to infection without septic symptoms.

Methods: Two hundred fifty patients were included into the study comprising cases of sepsis, acute wound infection, chronic and delayed wound infections after gastric, pancreatic and colon cancer surgery. Genetic polymorphisms of 1) TNFa G-308A and TNFβ G525A, 2) CCR2 G190A, 3) CD14 C-159T, 4) TLR2 G2229A and C2027T, 4) TLR4 A1196G and C1564T, and 5) TGFβ T941C sites was studied. Levels of TNFa and TGFβ were measured and correlated with their gene polymorphism.

Results: 1) The entire studied group of infected and non-infected patients revealed higher frequency of TNFaG308A GG and lower of GA, and lower of TNFβ G525A GA and higher of AA than controls. There was less of CCR2 GG genotype patients than healthy subjects. In the TGFβ T941C investigated group patients expressed only the CC genotype. Interestingly, additional genotype was detected using TGFβ T941C primer with preponderance in patients, 2) in subgroups of patients with sepsis, acute local infections and delayed wound healing the TNFaG308A GG genotype was represented at higher prevalence than in controls. Patients’ TNFβ G525A GA genotype was less and AA was more prevalent than in controls. However, there were less CCR2 GG patients than healthy subjects. In TGFβ G525A studied patients only CC genotype was expressed. Interestingly, additional genotype was detected with preponderance in patients. 3) The TNFaG308A GG, TNFβ G525A GA, CD14 C159T CC and CT, CCR2 GC genotype dominated in patients after gastric surgery with delayed wound healing. Those with TNFaG308A GG, TLR 4 +1 A1106G AA, TLR 4 +2 C1564T CC had delayed wound healing after pancreatic resection, 4) Patients with genotype TNFaG308A both homozygotes and heterozygotes, displaying delayed healing after gastric and pancreatic surgery produced more TNFa than those with fast healing. The TGFβ level was significantly higher in patients with fast healing of wound after gastric surgery than in controls. These patients presented other than the TGFβ T941CC genotype.

Conclusions: Evident differences in genetic polymorphism of TLR, TNFa and β were observed between patients with inflammation compared with healthy subjects.
Gastrointestinal_3 P036

Pneumatosis cystoides coli—case report

Drzki Adam1, Wierzchowska-Ławska Agnieszka2, Spychalski Michał1, Tchorzewski Marcin3

1Department of General and Colorectal Surgery, Medical University of Łódz, Poland, 2Department of Histopathology, Medical University of Łódz, Poland, 3Department of General and Colorectal Surgery/Medical University of Łódz, Poland.

Pneumatosis cystoides coli is a very rare condition characterized by multiple submucosal or subserosal gas cysts the size of 0.5–3 cm. The disease can be found in any part of the gastrointestinal tract. In large bowel it localizes predominantly in the left colon. Both fulminant and benign conditions exist. Fulminant pneumatosis is associated with an acute bacterial process, sepsis and necrosis of the bowel; in this case surgery is indicated. Benign pneumatoses can be totally asymptomatic and observed as an incidental finding at laparotomy, endoscopic or radiologic examinations (CT, MR). The symptoms can be uncharacteristic and include hypogastric pain, abdominal distention, diarrhea and constipation. Many different causes of pneumatoses have been proposed including mechanical and bacterial. We have presented a case of pneumatosis cystoides coli in a 76-year-old patient with a history of ischaemic heart disease and myocardial infarction. Patient recently has complained of constipation and moderate loss of weight. Endoscopic examination was undertaken because of intensification of symptoms. The examination revealed multiple polyps of the sigmoid and descending colon. On histopathological examination they were confirmed as a tubular adenomas with the low grade dysplasia. As a result the patient was qualified for elective surgery. He underwent the resection of the sigmoid colon and upper rectum. The multiple gas-filled cysts located in the submucosa were found in the surgical specimen. The postoperative course was uncomplicated and patient was discharged on day 7. Microscopic evaluation revealed multiple pseudocysts' formations with wall built of histiocyt and giant cells. The changes were located in submucosa and subserosa along the whole resected bowel. Pathologic analysis revealed pneumatosis cystoides coli. Follow up examination six months after surgery revealed subsidence of symptoms.

Plastic P037

Does aprottinin affect capsule formation around tissue expander?

El Gawad Ahmed1, Defty Charlotte2, Salama Yehia3, Duncan Christian4

1Cairo University, Egypt, 2Plastic Surgery Trainee, UK, 3General Surgery, Tartee UK, 4Plastic Surgery Consultant, UK (aelgazad@gmail.com)

This double blind randomised control study was designed to assess the effectiveness of Aprotinin for the enhancement of tissue expansion. Twenty four post-burn patients were evenly assigned to two groups. One group served as control, the other was experimental. In one group, Aprotinin was used for enhancement of tissue expansion. It was assumed that by topical application of Aprotinin, the effectiveness of Aprotinin for the enhancement of tissue expansion. The immunohistochemical panel assessment was positive for anti-CD117 and anti-CD34 antibodies and resection margins were clear in all cases. Follow-up control was normal after 6 months. DiscussionGastric GIST represents a good candidate for this procedure. It is worthwhile to remember that most of face and neck post-burn scars are candidates for this procedure.
Gastrointestinal_2 P040
Secondary vascular prosthesis migration in small bowel
Fama Fausto1, Linard Cecile2, Villari Santa Alessandra3, Gioffe'1-Florio Maria Antonietta4, Saint-Marc Olivier5, Piqued Arnaud6
1 Service de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans, France, 2 Service d’Endocrinologie, Centre Hospitalier Régional d’Orléans (France), 3 Division of General Surgery, Department of Human Pathology, University of Messina (Italy), 4 Service de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans (France), 5 Service de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans (France) (famafausto@yahoo.it)

Introduction: Extraluminal prosthesis migration is a rare complication of vascular surgery. We describe a case occurred after 2 months to a vascular procedure.

Case Report: A 63-year-old man was admitted for appearance of sepsis after laparotomic arterial surgery for obliterating arteriopathy of the external iliac right artery (occluded until to popliteal artery). His past medical history comprised hypertension, hyperlipidemia and heavy tobacco smoke. Two months prior to admission, patient underwent a right aorto-femoral by-pass (goretex prothetic material) with femoral tripol endarterectomy. On 10th postoperative day he had fever and high white blood cell count (20 000 cells/mm3). Ultrasound scan was negative while blood cultures positive, and an antibiotic treatment was adapted to the specific bacterial sensitivity. An enhanced computed tomography (CT) showed a tight contact between prosthesis and small bowel (ileum) with suspicion for a secondary fistula. An explorative laparotomy revealed no peritonitis or haemorrhage. An ileal resection with manual anastomosis, associated to an ileo-femoral crossover bypass (from left to right), was performed. Macroscopically, specimen examination showed an intraluminal migration of the prosthesis in the ileum for 4 cm. Patient was admitted in intensive care unit (I.C.U.), then shifted to the surgical ward and discharged on 20th postoperative day. By 5 months follow-up the patient was asymptomatic.

Discussion: The migration is the most important, and frequently described, complication after surgical procedure with prosthetic implant. Intraluminal diapage of digestive (iliary tree, colon and oesophagus) and respiratory stents is common. In the vessels system, vascular prosthesis migration is possible but slippage of digestive (biliary tree, colon and oesophagus) and respiratory stents is common. In the vessels system, vascular prosthesis migration is possible but slippage of digestive (biliary tree, colon and oesophagus) and respiratory stents is common. In the vessels system, vascular prosthesis migration is possible but slippage of digestive (biliary tree, colon and oesophagus) and respiratory stents is common.

Hepatobiliary_2 P041
Solitary fibrous tumour of the liver presenting with hypoglycaemic coma
Fama Fausto1, Barrande Gaelle2, Villeneuve Alain3, Linard Cecile4, Gioffe1-Florio Maria Antonietta4, Saint-Marc Olivier5
1 Service de Chirurgie Digestive, Endocrinienne et Thoracique, Centre Hospitalier Régional d’Orléans, France, 2 Service d’Endocrinologie, Centre Hospitalier Régional d’Orléans (France), 3 Division of General Surgery, Department of General and Transplantation Surgery, 4 Department of General and Transplantation Surgery, 5 Department of General and Transplantation Surgery, 6 Department of General and Transplantation Surgery (famafausto@yahoo.it)

Introduction: Solitary Fibrous Tumours (SFT) are mesenchymal neoplasms. These tumours sometimes presented with hypoglycaemic syndromes due to an overproduction of a high molecular weight form of Insulin-like Growth Factor type II (big-IGF-II). Only 3 cases of SFT’s of the liver associated with hypoglycaemic syndrome have been described, but in none of them was a clear relationship with big-IGF-II overproduction documented.

Case Report: We report a case of a 68-year-old male, admitted for hypoglycaemic coma, who was found to be affected by a large (24 × 20 × 12 · 5cm) tumour of the liver. Laboratory tests reported on a marked hypoglycaemia with decreased levels of insulin, C-peptide and testosterone and increased levels of Testosterone Binding Globulin (TBG), Follicle-stimulating Hormone (FSH), Luteining Hormone (LH) and Prolactin. Synacthen test, Cortisol and Adreno Cortico Tropic Hormone (ACTH) levels were normal. A transperitoneal liver biopsy showed a spindle cell tumour. Preoperative Western Blot (WB) analysis highlighted a band at a molecular weight of 75 kDa, corresponding to the mature form of IGF2, and some bands at a higher molecular weight of 10–20 kDa, corresponding to big-IGF2. The patient underwent a liver trisegmentectomy including VI, VII and VIII segment. On immunostaining, CD-34 and vimentin positivity confirmed the diagnosis of SFT. Postoperative serum WB analysis showed that big-IGF2 bands, to be significantly reduced after 24 hours, and absent at 3, 7, 10 and 14 days after the operation. After the 2nd postoperative day, glucose serum levels returned spontaneously to a physiological daily profile. No distant metastases had been found (follow-up 25 months).

Discussion: This case documents unequivocally that liver SFTs are able to overproduce big-IGF-II responsible for severe hypoglycaemia. In addition, our report suggests that big-IGF-II should be assessed with WB analysis at least 3 days after the operation, if its complete disappearance should be verified.

Gastrointestinal_3 P042
Effect of Neostigmine in post abdominal surgery ileus: a randomized Clinical Trial
Fanaie S. Ahmad1, Ziaee S. Ali2, Moradi Mehran3
1 Dept. of Surgery, Baqiyatallah University of Medical Science, Tehran, Iran, 2 Efsan Hospital, Emergency Department, Tehran, Iran, 3 Baqiyatallah University of Medical Science, Tehran, Iran (ahmadfanaie@erfanhospital.ir)

Background: After abdominal surgery, a normal physiological ileus occurs. This type of ileus spontaneously resolves within 2–3 days after sigmoid motility returns to normal. However, the terms postoperative adynamic ileus or paralytic ileus are defined as ileus of the gut persisting for more than 3 days following surgery.

Design: This study is a prospective clinical Randomized trial of neostigmine in 42 patients with ileus after abdominal surgery to demonstrate its efficacy.

Intervention: Intravenous administration of neostigmine 2·5 mg in 500 N/S over 30 min, or placebo. Patients who had no response to the initial injection were eligible to receive open-label neostigmine three hours later.

Setting: Abdominal circumference, Time to first flatus and defecation, HR and BP after 3 hours of administration, and radiographic colonic measurements were recorded. Patients were followed for recurrence of ileus for their remaining time in the hospital. All organic causes of Ileus were excluded from the study. Result: 20 out of 21 neostigmine patients (95.21%) passed flatus and stools with first administration of Neostigmine administration, whereas none of the placebo-treated patients passed stools (p < 0.001). In pre study abdominal circumference there was no significant difference, whereas after 3 hours of intervention it was decreased significantly (100±7 vs. 14±6 cm, p<0.0001).

Conclusion: In patients with acute colonic pseudo-obstruction who have not had a response to conservative therapy, treatment with neostigmine rapidly decompresses the colon.

Transplantation, Organ preservation_1 P043
Chlamydia pneumoniae infection treatment with spiramycin in kidney transplant
Fesolowicz Slawomir1, Artur Kwiatkowski2, Michal Wsola3, Edyta Podsiadly4, Krysztof Ostrowski2, Andrzej Cmura6
1 Department of General and Transplantation Surgery, 2 Department of General and Transplantation Surgery, 3 Department of General and Transplantation Surgery, 4 National Institute of Hygiene, 5 Department of General and Transplantation Surgery, 6 Department of General and Transplantation Surgery (fes@hdp.pl)

Previous research pointed to a significant role of C. pneumoniae infection in the development of chronic renal allograft dysfunction, liver chronic rejection and vasculopathy of the transplanted heart. The aim of the study was to evaluate the C. pneumoniae presence prior to and after kidney transplantation and to determine the role of spiramycin therapy in patients after kidney transplantation.
Material and methods: The study group consisted of 50 patients (25 pairs) who received kidney transplants from cadaveric donors. One of the two kidneys from one donor was transplanted to a patient randomised to spiramycin (dosage of 2 × 5 million U/day orally for 3 months) (group S) and the other was transplanted to a patient assigned as control (group C). Markers of infection were assessed on day 1 post transplantation and 3 months later (average = 94 days). All (n = 50) patients were examined for bacterial DNA presence in peripheral blood leukocytes using real-time PCR and titers of serum anti C. pneumoniae IgG and IgA antibodies using micromunofluorescence (MIF). C. pneumoniae infection was diagnosed as C. pneumoniae DNA presence in peripheral blood leukocytes or positive antibodies in both classes.

Results: C. pneumoniae infection was initially diagnosed in 14 patients from group S and in eight patients from group C (p = ns) after 3 months in 12 and 9 patients respectively (p = ns). Conversion from positive to negative C. pneumoniae status occurred in 7 patients from group S and one patient from group C (p = 0.04). Conversion from negative to positive C. pneumoniae status occurred in 5 patients from group S and 2 patients from group C (p = ns).

Conclusions: The results suggest a possible role for spiramycin treatment of C. pneumoniae infection in kidney allograft recipients. C. pneumoniae infection diagnosis and treatment should be considered as a routine at every patient awaiting transplantation.

Education P044

Experiences of the basic laparoscopic techniques’ graduate education between 1995-

Furka Istvan1, Brath Endre2, Peter Sapy E. Mohamed Gamal3, Robert Kotan Andrea Furka4, Flasko Tibor5, Mikó Iren6

1 Department of Operative Techniques and Surgical Research, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 2 Department of Operative Techniques and Surgical Research, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 3 Augusta Surgical Center, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 4 Augusta Surgical Center, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 5 Department of Urology, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 6 Department of Operative Techniques and Surgical Research, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary (furka@med.unideb.hu)

Introduction: At our department the education of laparoscopic techniques for surgeons has begun in February, 1992. Since the 1995–1996 university year also in the gradual education we have started the education of Basic Laparoscopic Surgical Training. Introduction to laparoscopic surgery6 accredited elective courses for the Hungarian and English Program students. Our aim was the familiarization and acquire of minimal invasive techniques.

Methods: The educational topics for graduate training are: Lesson I: short history of laparoscopic surgery with introduction of the laparoscopic manual armamentarium and equipments. Lesson II: dry training, the use of pelvi-box, operating in a three-dimensional field viewing two-dimensional structure through video-imaging instrumentation. Intracorporeal knotting techniques in open and closed pelvi-box. Lesson III: preparation of chicken thigh in open and closed pelvi-box and in MATT (Minimal Access Therapy Technique) trainer. Lesson IV: cholecystectomy on isolated liver-gallbladder biopreparation in open and closed pelvi-box and in MATT trainer. Lesson V: “diagnostic laparoscopy” on a live tissue. Create pneumoperitoneum, insert the laparoscopic instruments. Learn the use of the manual equipment of laparoscopic surgery (dissection, stop the bleeding, clips’ applying). At the practice’s end students may perform laparoscopic cholecystectomy with teachers’ help. Lectures and practices are completed also with several own video films together with a bilateral video-conference system between the operating theater and the lecture hall.

Results: 255 medical students (134 in Hungarian and 121 in English Program) took part in the graduate laparoscopic courses in our training center between 1995–2007. In accordance with our quality assurance system the students’ opinions showed, they were maximally satisfied with our small-group courses. Till date we gave 31 Hungarian and 29 English certifications for applying jobs, resident status and Ph.D. program. Supports: DE OEC 1991, 2003, 2005, 2006. Grant: HEFOP-3-3-1-P.-2004-09-0040/1.0.

Sepsis, Infection, Immunity P045

Synbiotic 2000FORTEC decreases the risk of sepsis by bloodstream infections in multiple trauma patients

Giannarellos–Bourboulis Evangelos1, Kotzampani Katerina2, Kanellakopoulou Kyriaki3, Benmargh Sitg4

1 4th Department Of Internal Medicine, Faculty Of Medicine, University Of Athens, Greece, 2 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Greece, 3 4th Department of Internal Medicine, Faculty of Medicine, University of Athens, Greece, 4 Department of Hepatology, University College, London, UK (kakotbe@yaboo.com)

Background: A recent randomized clinical trial of our group disclosed considerable reduction of the infective sequelae after administration of a probiotic formula, namely Synbiotic 2000FORTE, in patients with multiple injuries, the latter being a preparation of four probiotics. The effect of treatment on the microbiology of the study population is presented herein.

Methods: A total of 72 patients with severe multiple trauma allocated to a 15-day administration of either placebo (or the synbiotic formula were studied in respect to infection and sepsis.

Results: Thirteen of the placebo group developed bloodstream infections (36.1%) compared to seven of the Synbiotic 2000FORTE group (19.4%, p: 0.009). Odds ratio for the advent of sepsis due to bloodstream infections was 2.182 among the placebo group compared to 1.268 among the Synbiotic 2000FORTE group. The time to progression to primary bacteremia was longer among patients treated with Synbiotic 2000FORTE compared to placebo (p: 0.0237 between groups). Twelve (33.3%) and five (13.9%) placebo-treated and probiotic-treated patients respectively developed ventilator-associated pneumonia with Acinetobacter baumannii as a bacterial cause (p: 0.047 between groups).

Conclusions: Probiotics contained in the studied formula decrease significantly the risk for sepsis by bloodstream infections and the occurrence of VAP by A. baumannii. An effect on bacterial translocation may be proposed as a probable mechanism of action.
review should be undertaken. Data is available for 52 patients attending 141 clinic appointments in 7 centres.

**Results:** Always Reviewed < 100 days Sometimes Never Reviewed < 100 days88 (31%) 18 (33%) 17 (33%) Table 1. Frequency of patient review

**Discussion:** The Scottish HPN MCN patients are not being reviewed as often as is recommended by the network protocols, with only 18 out of 52 patients meeting the criteria on every visit throughout 2006. However patients reviewed less frequently did not appear to have more admissions and complications. During patient reviews, weight measurement and routine blood tests are successfully taken but anthropometry and micronutrient levels are less well recorded. Full blood count, urea and electrolytes and liver function tests were sent at 91% of reviews. Other tests were less often requested – magnesium 65%; C reactive protein 58%; glucose 46% of visits. Micronutrients and haematinsics were often omitted. Bone biochemistry is not well documented (Calcium 72%; vitamin D 28%). There may be some informal review taking place which is not being recorded and no account is taken of whether patients are longstanding or new to the therapy. Nevertheless there is clear room for improvement in our HPN review. Anthropometry could be improved by better organisation and staff training. Many factors impinge on our ability to achieve complete blood results – organisational difficulties with requests, a central trace element laboratory and poor venous access. The frequency and content of review were set by the MCN on the basis of expert opinion rather than any higher level of evidence. Although it is clear that we should improve some aspects of our review, future studies might examine the outcome in HPN patients reviewed less frequently.

Minimally invasive P047

**Aortic Endovascular Grafts – How Much Should We Oversize?**

Harvey Nicholas1, Kotze Carl2, Francis Ian3, Thompson Phil4, Johnston M3, Yusuf Syed5

1Brighton and Sussex University Trust, 2Brighton and Sussex University Trust, 3Brighton and Sussex University Trust, 4Brighton and Sussex University Trust, 5Brighton and Sussex University Trust

**Introduction:** A 15–20% deviation over-sizing of the endovascular graft relative to the vessel diameter is generally practised. This is used to compensate for any underestimate that may lead to an endoleak. However, there are no data on the diameter measurement for endovascular grafts on CT scan so, therefore, the extent of oversizing is largely arbitrary.

**Aim:** This study assessed the correlation between actual graft diameter and that measured on CT scan. Methods Five Endovascular grafts (Zenith, Cook®) were embedded in gelatine and scanned by CT (GE Lightspeed Ultra, 8slice). The diameters were then measured at the top of the graft in the proximal seal zone. Measurements were obtained by two independent radiologists who were not aware of the actual graft diameter.

**Results:** There was a strong correlation of the CT measurements between observers. Graft diameters were underestimated by both observers ranging between 1–4mm for observer A and 1–1mm for observer B. The percentage difference of the graft body diameters ranged between 1–23% and 6–19% for observers A and observer B respectively. The percentage difference of the graft limb diameters ranged between 3–33% and 6–33% respectively.

**Conclusion:** Although there is global under-sizing, it is minimal and there is strong agreement between measurement of diameter on CT scan and actual graft measurement. A 15–20% over-sizing of the endovascular graft body is, therefore, genuine and appropriate.

Minimally invasive P049

**Improvement of microsurgical knotting time and technique during graduate and postgraduate courses**

Hever Timea1, Miko Iren2, Brath Endre3, Nemeth Norbert4, Tothmartinez Adrienn5, Furka Istvan6

1Microsurgical Educational Training Center, Department of Operative Techniques and Surgical Research, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 2Microsurgical Educational Training Center, Department of Operative Techniques and Surgical Research, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 3Microsurgical Educational Training Center, Department of Operative Techniques and Surgical Research, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 4Microsurgical Educational Training Center, Department of Operative Techniques and Surgical Research, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 5Microsurgical Educational Training Center, Department of Operative Techniques and Surgical Research, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 6Microsurgical Educational Training Center, Department of Operative Techniques and Surgical Research, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary

**Introduction:** Microsurgery has a great importance regarding the effective clinical and research work. At the Microsurgical Education and Training Center of our department the here developed Furka-method is used, which characteristics are: synchronous, active, video-assisted, individual, self-controlled and analyzing. Between 1 January, 2005 and 31 December, 2006 we analysed the knotting parameters of medical students, Ph.D. students and residents in microsurgical courses. The degree of the microsurgical skill's development can be different depending on the individual background.

**Methods:** The participants put their knots in rubber gloves according to the topic. On data sheets, photos and by video records the time durations of performing the first ten knots (after the technique's attainment), the knotting-direction and knot quality were documented.

Gastrointestinal, I P048

**Macroscopic Evaluation of The Vermiform Appendix**

Harvey Nicholas1, Fettiplace Rachel2, Clark Jeremy3

1Brighton and Sussex University Trust (nb@doctors.net.uk)

**Introduction:** The laparoscopic assessment and treatment of right iliac fossa pain are rapidly becoming more common. It is known that appendicectomy carries more risk of complications than laparoscopy alone but whether removal of a macroscopically normal appendix should be performed has not been agreed. There is conflicting evidence in the literature regarding the accuracy of in vivo assessment of the appendix.

**Methods:** All appendicectomies performed between June and October 2007 were entered into our study. The operating surgeon was asked to make an assessment of the appendix which was then sent for histological evaluation.

**Results:** Appendicectomies were performed on 35 female patients and 36 male patients although appendicectomy was present in 25 and 33 respectively. The operating surgeon was either a senior house officer (n=29), registrar (n=36) or consultant (n=6). The macroscopic assessment by the surgeon had a 100% correlation with the histological diagnosis of inflammation of the appendix and there were also no false positives. Interestingly the macroscopic assessment of the appendix in vitro was less accurate with the pathologist diagnosing macroscopic appendicitis in 44 of 58 showing microscopic inflammatory changes.

**Conclusion:** The operating surgeon is remarkably proficient at recognising appendiceal inflammation. Our findings suggest that it would be safe not to perform an appendicectomy if the appendix appears normal. However, in the light of studies with alternate findings further investigation needs to be undertaken to evaluate the risk-benefit ratio of this increasingly common situation.
Cardiovascular, Thoracic_1 P050

Does patency of Cimino-Brescia shunt depend on concomitant diseases respectively surgical expertise?

Hever Timea1, Kosztyu Laszlo2, Balla Jozsef3

1 Department of Operative Techniques and Surgical Research, Department of Vascular Surgery, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 2 Department of Vascular Surgery, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 3Department of Internal Medicine, Department of Nephrology, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary (timisbecer@yahoo.com)

Introduction: Cimino-Brescia arterio-venous fistula is used for haemodialysis of patients with end-stage renal failure. We examined the concomitant diseases, especially hypertension, diabetes mellitus, peripheral vasculopathy and medication after acute myocardial infarction (AMI), whether they alter fistula’s patency.

Patients and methods: Between 1 January, 2001 and 31 December, 2004 in our department 409 shunts had been operated on 294 patients (154 men and 140 women). Anamnestic data and laboratory results were obtained from surgical and internistic documents and by asking the alive and locally treated 68 patients. Also we analysed the effect of surgical expertise.

Results: According to international literature the average shunt’s patency is nearly 1 year, while it was an average of 763 days in our observed patients. In patients with hypertension fistulas had been obliterated earlier (p=0.581), and with diabetes various results were observed depending on the onset of disease. The fistula’s patency was longer in diabetes for 5–10 years (p=0.05), and it was shorter in case of 10–15 years (p=0.06). Shunts obliterated earlier in patients with peripheral vasculopathy (p=0.028). In post-AMI cases fistulas functioned longer (p=0.031). 64% of all Cimino-Brescia shunts were made on the forearm, 36.2% of the primer fistulas were on the left side forearm. 86.8% of the fistulas have been operated by experienced surgeons. There wasn’t significant variance of fistula’s patency comparing the trainees and the experienced surgeons (749 days versus 741 days) caused probably by the easier cases and the good supervision for the trainees.

Summary: The patency of Cimino-Brescia fistula is influenced by haemodialysis- affecting on atherosclerosis-, by diabetes and peripheral vasculopathy as well as previous AMI. Supposedly in post-AMI patients the prescribed medicaments had a protective effect on the vascular wall. However, hypertension didn’t affect the fistula patency significantly. Surgical expertise can be predictive for fistula patency and patients’ quality of life, but the well-supervised trainees can produce equivalent results, too.

Gastrointestinal_3 P051

American Society of Anesthesiologists Score as a Prognostic Factor for Colorectal Cancer: Analysis from 401 Laparoscopic Colorectal Surgical Patients

Hida Koya, Yamaguchi Takashi, Teramukai Satoshi, Fukushima Masanori, Koizumi Kinya, Sakai Yoshiharu

Kyoto University Hospital, Japan (hidadoka@kush.kyoto-u.ac.jp)

American Society of Anesthesiologists Physical Status (ASA-PS) score has been commonly used to preoperatively classify surgical patients and to predict perioperative morbidity and mortality rates based on the patient’s comorbidities. But it has been rarely used as a prognostic factor in contrast to that Eastern Cooperative Oncology Group Performance Status (ECOG-PS) score has been. We investigated here whether ASA-PS score would be a potential prognostic factor, analyzing the data of 401 consecutive colorectal cancer patients who underwent laparoscopic surgery. The ASA-PS scores were collected from the anesthesia records, and the ECOG-PS scores were estimated from the patients’ clinical records. In univariate analysis, though both ASA-PS score and ECOG-PS score were associated with overall survival (p<0.001), both scores are highly correlated (Spearman’s correlation: 0.853). In Cox regression analysis including ASA-PS, ASA-PS was found to be a factor which significantly and independently associated overall survival (≥ 3 versus ≤ 2, HR: 2.99, 95% CI: 1.46–6.14, p = 0.003) as well as distant metastasis, high CA19-9 level, low albumin level, and presence of mental illness. When we included ECOG-PS instead of ASA-PS in the multivariate analysis, the similar results (≥ 2 versus ≤ 1, HR: 3.22, 95% CI: 1.35–7.69, p = 0.008) were obtained. Since ECOG-PS score is rarely recorded in the medical records, ECOG-PS might be less reliable, particularly in retrospective studies. Thus we should collect ASA-PS score as a potential prognostic factor and use for patient selection or for stratification in clinical studies for colorectal surgical patients.

Cardiovascular, Thoracic_1 P052

Selective phosphodiesterase-5 inhibition reduces neointima formation in rat carotid arteries after endothelial denudation

Hirschberg Kristof1, Radovits Tamás2, Loganathan Sivakkanan3, Karck Matthias4, Szabó Gábor5

1Department of Cardio-Surgery, University of Heidelberg, Heidelberg, Germany, 2Department of Cardio-Surgery, University of Heidelberg, Heidelberg, Germany, 3Department of Cardio-Surgery, University of Heidelberg, Heidelberg, Germany, 4Department of Cardio-Surgery, University of Heidelberg, Heidelberg, Germany, 5Department of Cardio-Surgery, University of Heidelberg, Heidelberg, Germany (fumafasuts@yahoos.at)

Introduction: The longterm results of successful interventional and surgical vessel reconstruction are compromised by restenosis due to neointima formation. Recent studies suggest that nitric oxide (NO) may play a role in the reduction of neointima formation. The aim of our study was to evaluate the effectiveness of the NO-cGMP pathway by administering a selective phosphodiesterase-5 enzyme inhibitor Vardenafil (V) in a rat model of carotid stenosis.

Methods: Right carotid endarterectomy was made on anesthetized male Sprague-Dawley rats. After cross clamping the intima was demucified by a mechanical-chemical (cotton-tipped applicator immersed in saponin) method, than the arteriography was closed with a running suture. Three groups were studied: sham-operated rats (n=6), control endarterectomized rats (E, n=6) and endarterectomized rats treated orally with phosphodiesterase-5 enzyme inhibitor Vardenafil (V) in a dose of 10 mg/kg/day (E + V, n=6). After 3 weeks, the vasculature were perfusion-fixed (formaldehyde solution 4%, 30 ml/min i.a.). The vessel compartment areas were measured by conventional microscopy using haematoxylin-eosin staining. Nesintima areas, stenosis grade and neointima/media area ratio were compared between groups.

Results: There were statistically significant differences with regard to the area of neointima. The area of neointima in group E + V was significantly smaller than in group E (p=0.001). The area of neointima in group E + V was significantly larger than in group E (p=0.001).

Conclusions: The results of our study suggest that selective phosphodiesterase-5 inhibition may be a therapeutic option for the prevention of neointima formation in the human carotid artery after endarterectomy.
20.42 ± 7.42% versus 53.69 ± 12.07%; p < 0.05) and neointima/media area ratio (E + V versus E, 0.51 ± 0.18 versus 1.08 ± 0.21; p < 0.05).

Conclusion: Treatment with phosphodiesterase-5 enzyme inhibitor significantly suppressed neointimal hyperplasia in a rat model of carotid stenosis.

Hepatobiary. P053
All-trans-retinoic acid ameliorates carbon tetrachloride-induced liver fibrosis in mice through modulating cytokine production
Hisamori Shigei1, Okoshi Kae2, Nagayama Satoshi3, Kubo Hajime4, Watanabe Go5, Yoshiharu Sakai6
1 Division of Gastrointestinl Surgery, Department of Surgery, Kyoto University Hospital, Japan, 2 Division of Gastrointestinl Surgery, Department of Surgery, Kyoto University Hospital, 3 Division of Gastrointestinl Surgery, Department of Surgery, Kyoto University Hospital, 4 Division of Gastrointestinl Surgery, Department of Surgery, Kyoto University Hospital, 5 Division of Gastrointestinl Surgery, Department of Surgery, Kyoto University Hospital, 6 Division of Gastrointestinl Surgery, Department of Surgery, Kyoto University Hospital (hisamori@kuhp.kyoto-u.ac.jp)

Background/aims: We have recently reported that all-trans-retinoic acid (ATRA) suppresses the transdifferentiation and proliferation of lung fibroblasts and prevents radiation- or bleomycin-induced lung fibrosis. The next question to be resolved is whether ATRA could also prevent the liver fibrosis or not.

Methods: Eight-week-old BALB/c mice were injected intraperitoneal with CCl4 to make liver cirrhosis. ATRA is also injected intraperitoneally in the treatment group. Liver histology, the values of transforming growth factor (TGF)-β 1 and the values of interleukin (IL)-6 in liver tissues were compared between the ATRA treatment and non-treatment groups. The effect of ATRA on the production of cytokines in quiescent and activated HSCs was also examined in vitro.

Results: CCl4-induced liver fibrosis was attenuated by administration of ATRA. The overall survival rate at 12 weeks was 75% (n=24) in the treatment group whereas it was 26.5% in the non-treatment group (n=25). The mRNA levels of TGFβ1 and IL-6 in livers of the treatment group were markedly suppressed (p<0.001), compared with those of the non-treatment group.

In vitro studies disclosed that the administration of ATRA reduced (1) the production of TGF-β 1, IL-6, and collagen in HSCs, (2) TGF-β-dependent transdifferentiation and IL-6-dependent proliferation of the HSCs, and (3) the activities of nuclear factor (NF)-κB p65 and p18 monogen-activated protein kinase (MAPK), which stimulate the production of TGF-β 1 and IL-6.

Conclusions: Our findings indicate that ATRA ameliorates liver fibrosis by suppressing the activation of HSCs. As the oral administration of the drug results in good compliance, ATRA could be a novel approach in the treatment of liver fibrosis.

Plastic P054
Comparison of a new long-term absorbable suture material (MonoMax) with polydioxanone in closure of abdominal wall (animal model)
Horvath Szabolcs1, Baracs Jozsef2, Ferencz Sandor3, Ferencz Andrea4, Funk Lutz5, Weber George6
1 Department of Surgical Research and Techniques, Medical Faculty, University of Pécs, Hungary, 2 Department of Surgery, Medical Faculty, University of Pécs, 3 Department of Surgical Research and Techniques, Medical Faculty, University of Pécs, 4 Department of Surgical Research and Techniques, Medical Faculty, University of Pécs, 5 Aesculap AG & Co.KG, Germany, 6 Department of Surgical Research and Techniques, Medical Faculty, University of Pécs (szabolcs@horvathby@gmail.com)

Background: The long-term absorbable suture materials are generally used for the closure of the abdominal wall. The aim of this study was to evaluate the safety and feasibility of usage of a new suture material (MonoMax, B.Braun, Aesculap) in animal models.

Methods: Two versions of MonoMax (poly(4-hydroxybutyrate)) with different elasticity (70% and 90% elongations) were evaluated in 36 domestic pigs. Polydioxanone was used as a control suture. Animals were randomized into three groups: Group I (n=12): MonoMax 70%, Group II (n=12): MonoMax 90%, Group III (n=12): polydioxanone. In each group a 15 cm long midline abdominal incision was performed, and the abdominal wall was closed with running sutures (1 USP). 10, 30, and 90 days postoperatively the animals were sacrificed (four pigs at each occasion). In our study the handling characteristics of the suture materials, the wound healing (both macroscopically and microscopically), and the tensile strength of the tissue were analyzed.

Results: All pigs survived. There were no differences in the handling characteristics of suture materials and macroscopic wound healing. Subcutaneous abscesses in four cases (in Group I and II at 10th postop. day, in Group I at 30th postop. day, and in Group II at 90th postop. day), and incisional hernias in three cases (one in Group II and two in Group III and all of them at 30th postop. day) have been observed. The mean tensile strength of tissue in Group I were significantly higher than control group at 30th postoperative day (144,52 N versus 113,94 N, p<0.05). At 90th postoperative day in Group II the tensile strength of the sutured linea alba was stronger than the native fascia (166,5 N versus 148, N, p<0.001).

Conclusions: Based on our study the MonoMax is as safe and reliable as polydioxanone but it seems to be stronger than polydioxanone.

Transplantation, Organ preservation. P055
Development of a perfusion preservation model in porcine kidneys
Jager L. Cara1, Heger Michal2, Gulik van Thomas3
1 AMC, The Netherlands Department of Surgery, Surgical Laboratory, AZ Amsterdam, The Netherlands, 2 AMC, The Netherlands Department of Surgery, Surgical Laboratory IWO-1 Meibergdreef 9 1105 AZ Amsterdam, The Netherlands, 3 AMC, The Netherlands Department of Surgery, Surgical Laboratory IWO-1 Meibergdreef 9 1105 AZ Amsterdam, The Netherlands (L.Cager@amc.uva.nl)

Introduction: Several studies have shown that kidney graft preservation by hypothermic machine perfusion (MP) improves organ quality compared to cold storage (CS). Hypothermic (4°C) MP in combination with the use of a new preservation solution (Polyol) that was developed at our department has already shown promising results in a porcine autotransplantation survival model. MP at (sub)normothermic temperatures (15°C–32°C), whereby physiological parameters are optimally mimicked, might constitute an even more effective means to reduce ischemic damage and subsequent reperfusion injury. Therefore, we developed an experimental setup for isolated perfusion of porcine kidneys at different temperatures to be assessed in an autotransplantation model. This pilot study reports on the reproducibility and feasibility of our perfusion system.

Materials and Methods: The perfusion setup consists of a roller pump, flow-, pressure-, and temperature probes, a heat exchanger, a glass oxygenator, a temperature-regulated organ chamber, and a solution reservoir. Kidneys, retrieved from landrace pigs (n=4), were continuously perfused during 6 hrs at 4°C. Flow and pressure were continuously monitored to calculate vascular resistance. Oxygen consumption, electrolytes, pH, and lactate dehydrogenase (LDH) levels in the perfusate were assayed so as to derive information on organ metabolic state.

Results: The perfusate temperature and pO2 (~500 mmHg) remained stable at different perfusion temperatures. Kidneys preserved at 4°C ex vivo demonstrated stable pH levels (pH ~7.1). An increase in LDH (~1060kU) and lactate (~160kU) was observed during 6hrs of perfusion. Metabolism gradually decreased as measured by oxygen consumption during perfusion. With pressure-controlled perfusion at 35 cm H2O, a perfusion flow of 0.3–0.6 ml/min/g kidney was reached and the vascular resistance slightly decreased during perfusion in all kidneys. The isolated perfusion kidney model was validated for 6-hr perfusion at 4°C.

Conclusion: This perfusion set-up allows us to examine functional parameters during MP preservation in an ex vivo setting.
Transplantation, Organ preservation_2 P056

Difficult vascular access for hemodialysis in patients with central veins obstruction

Jakimowicz Tomasz1, Gałczka Zbigniew2, Nazarewicz Slawomir2, Grochowiecki Tadeusz4, Frunze Slawomir5, Szmidt Jacek6

1 Department of General, Vascular and Transplant Surgery, Medical University of Warsaw, Poland, 2 Department of General, Vascular and Transplant Surgery, Medical University of Warsaw, Poland, 3 Department of General, Vascular and Transplant Surgery, Medical University of Warsaw, Poland, 4 Department of General, Vascular and Transplant Surgery, Medical University of Warsaw, Poland, 5 Department of General, Vascular and Transplant Surgery, Medical University of Warsaw, Poland, 6 Department of General, Vascular and Transplant Surgery, Medical University of Warsaw, Poland.

Techniques, 4 University of Pecs Medical School, Department of General and Vascular Techniques (jancsogabor@hotmail.com)

Diffusely dependent patients have often central venous drainage problems, usually due to percutaneous vein catheterization. In case of functioning arm arterio-venous fistula outflow thrombosis can be the reason of venous hypertension, arm edema and vascular access failure. Percutaneous angioptaly and stenting of narrowed vessels is sometimes not sufficient. In such circumstances there is the possibility to create new fistula with venous anastomosis to subclavian or iliac vein, superior or inferior vena cava. In case of existing fistula failure, it is possible to create veno-venous graft by to-pass the thrombosed vein. The aim of the study was to assess the possibility of creation and function of arterio-venous fistula with the outflow to central veins. Between 1990 and 2007 in our Department 49 patients with central veins occlusion were treated. Mean age was 43 years (range 19–64 years), mean duration of hemodialysis was 4.2 years (range 16 months – 6 years), mean number of previous vascular access surgery was 7.6 (3–17). We performed 19 axillo-iliac, 14 axillo-axillary by-passes and 16 conduits from arm fistula to jugular (9) or subclavian (7) vein for hemodialysis purposes. We used 5 or 6 mm diameter external supported PTFE grafts. All except one fistulas were used for hemodialysis. One patient died with good function of fistula before it's initial usage. Follow-up period ranged from 1 to 84 months. In four cases of stenosis of venous anastomosis occurred (8, 12, 14 and 16 months postoperatively), two of which were successfully treated by angioptaly and one required a new anastomosis to the inferior vena cava. In 12 cases (24%) graft thrombectomy was necessary 1 to 38 months after the operation. One axillo-iliac and one axillo-axillary by-pass was removed 14 and 22 months after the operation due to infection. In conclusion we found extraanatomic conduits an efficient option as a permanent vascular access for hemodialysis purposes in patients with central veins occlusion.

Cardiovascular, Thoracic,1 P057

Ischaemic postconditioning reduces TNF-alpha expression and leukocyte activation after infranarial aortic ischaemia-reperfusion in rat model

Jancso Gabor1, Sinay Laszlo2, Horvath Szabolcs3, Arato Endre4, Weber Gyorgy5, Roth Erzsébet6

1 University of Pecs Medical School, Department of General and Vascular Surgery, Pecs, Hungary, 2 University of Pecs Medical School, Department of General and Vascular Surgery, 3 University of Pecs Medical School, Department of Surgical Research and Techniques, 4 University of Pecs Medical School, Department of General and Vascular Surgery, 5 University of Pecs Medical School, Department of Surgical Research and Techniques, 6 University of Pecs Medical School, Department of Surgical Research and Techniques (jancsgabor@hotmail.com)

Objective: We studied the protective effects of ischaemic postconditioning (PS) on ischemia-reperfusion injury of the lower extremities in a rat model of abdominal aortic intervention. We aimed to examine the evoked oxidative stress, cytokine expression and leukocyte activation after revascularisation surgery.

Methods: Anesthetized animals (48 Whitstar rats) underwent a 60 min infranarial aorta cross-clamping. After the ischaemic period, an intermittent 4 times 15 sec reperfusion–15 sec ischaemic episodes were applied (ischaemic postconditioning: group PS). Then we started a 120 min reperfusion in the aorta. In untreated group animals underwent a long ischaemia (60 min) and the following reperfusion (group IR). Peripheral blood samples were collected before operation, and in early (5, 10, 15, 30, 60 and 120 min) reperfusion periods. Serum peroxide level, TNF-alpha concentration, myeloperoxidase (MPO) activity and PMA-induced leukocyte ROS production were measured.

Results: In PS group, plasma peroxide level elevation was significantly lower in very early reperfusion (5–30 min) comparing to non-conditioned IR group (10.0±4.1,9 M/ml vs 16.9±1.67 M/ml p<0.05). PS also reduced serum TNF-alpha concentration (167,4±11,26 pg/ml versus 116,5±12,04 pg/ml p<0.05), MPO activity (1,759 ± 0,239 M/ml vs 1,22 ± 0,126 M/ml p<0.05) and leukocyte activation detected by PMA-induced leukocyte ROS production (5,7 ± 0,96 AU/103cells versus 4,63 ± 0,69 AU/103cells).

Conclusions: Ischaemic postconditioning could reduce ROI production after IR in early reperfusion period, thus limiting ROI mediated tissue lesion, cytokine-leukocyte activation, and inflammatory responses. PS seems to be an effective tool in vascular surgery to reduce reperfusion injuries after revascularization interventions. Supported by OTKA K67731, K68851, K60227.

Gastrointestinal,3 P058

A Case report–2 Cases of Primary Aorto-enteric fistulas

Jani Priyanka1, Akhtar Irfan2

1 King’s Mill Hospital, Nottinghamshire, UK 2 King’s Mill Hospital (lpjganji@yahoo.com)

Primary aortoenteric fistula (PAEF) is a communication between the aorta and the enteric tract without any previous vascular intervention, e.g., aortic grafting. The direct communication is the cause of erosion of a diseased aorta into the gastrointestinal tract. Generally the involved aorta is aneurismal in nature. Although rare, this condition may cause rapid patient deterioration and death and hence requires a prompt diagnosis and early surgical intervention. Primary Aorto-enteric fistulas present with episodes of gastrointestinal bleeding and/or fever and pulsatile abdominal mass. This case series involving two patients with primary aorto-enteric fistulas over the last year with two very different presentations, treated successfully by by surgical interventions. First patient is an 80 yrs old female, presented with a episode of haematemesis – 300 ml fresh blood. Whilst in A&E incidental finding of pulsatile abdominal mass was made and proven to be Abdominal Aortic Aneurysm. CT abdo showed abdominal aorta aneurysm involving renal and common iliac arteries bilaterally. But no signs of leak or enteric fistulas noted. Patient was deemed stable AAA and was awaiting OGD until she had a second episode of haemetemesis following which she underwent a laparotomy and intra-operative finding of aorto-enteric fistula was made. She was treated successfully and has made full and uneventful recovery. Second patient is a previously fit and well 65yrs old male patient who presented with fever, sweats, suprapubic abdominal pain and vague back pain. USG abdomen and IVU were normal and patient was discharged home on antibiotics for UTL. On the second presentation with similar complaints the patient had an abdominal CT Scan which showed an infra-renal abdominal aortic aneurysm 5.7 cm and a aorto-enteric fistula. Patient was started on intravenous antibiotics and underwent emergency EVAR operation. Intra-operative and microbiology results were suggestive of mycotic lesions in the involved aorta and hence a diagnosis of primary aorto-enteric fistula due to mycotic aneurysm was reached. Patient needed a prolonged period of intravenous antibiotics and rehabilitation but did manage a complete recovery. Since his surgery he continues to remain pain free and has had no further episodes of unexplained febrile illness. In summary, high level of suspision is the key to diagnosis of primary aorto-duodenal fistulas. And they should be thought of in patients with pyrexia of unknown origin or in repeated episodes of upper GI bleed with failed attempts at endoscopy and a CT Scan of the abdomen is generally a helpful diagnostic tool.

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Minimally invasive P059

Laparoscopic restorative proctocolectomy with ileal pouch-anal anastomosis for ulcerative colitis: surgical outcomes of 27 cases

Kawamura Junichiro1, Nagayama Satoshi2, Nomura Akihito3, Watanabe Go4, Sakai Yoshiharu2
1 Department of Surgery, Kyo University Hospital, Kyoto, Japan, 2 Department of Surgery, Kyo University Hospital, 3 Department of Surgery, Kyo University Hospital, 4 Department of Surgery, Kyo University Hospital, 5 Department of Surgery, Kyo University Hospital (kawamura@kurbanico.jp)

Purpose: Since ulcerative colitis (UC) occurs primarily in younger patients, body image and cosmesis are major problems. Laparoscopic restorative proctocolectomy (LRP) requires a prolonged operation time long and high cost, but its short-term results are not inferior to those of conventional open restorative proctocolectomy (ORP). Moreover, long-term results for quality of life and morbidity are similar for these procedures, with LRP being superior to ORP with respect to body image and cosmesis. In our hospital, laparoscopic total proctocolectomy with ileal pouch-anal anastomosis (LRP-IPAA) is routinely used for the elective treatment of UC. We present our approach for laparoscopic dissection and transection of the rectum combined with transanal rectal mucosectomy and report short-term outcomes.

Methods: A total of 27 patients with UC underwent LAP-IPAA. One-, two-, and three-stage IPAA were performed in 2, 22, and 3 patients, respectively.

Results: The median operation time was 419 minutes, and the median operative blood loss was 180 g. No patient was switched to open surgery. One patient required reoperation for intestinal perforation caused by intestinal strangulation due to the small intestine twisting around the stoma site. Postoperative intestinal obstruction occurred in 7 patients, but all cases were treated conservatively. There was no operative mortality, and no sexual or urinary complications were reported during short-term follow-up.

Conclusions: LRP-IPAA is a feasible approach for the treatment of ulcerative colitis that provides excellent views of the pelvis. This procedure may offer important advantages over conventional surgery.

Gastrointestinal_1 P060

The short time effects of calcium dobesilate, diosmin-hesperidin and sitz bath on acute complaints in the treatment of patients with bleeding hemorrhoidal attacks

Köksal Hakan Mustafa1, Yıldırım Sadık2, Töydemir Toygár3, Celayir Fevzi4, Öner Muharrem5, Baykan Adil6
1 Department of Gastroenterology, Süleyman Demirel University Training and Research Hospital, Istanbul, Turkey, 2 General Surgeon (As. Prof.), 3 General Surgeon, 4 General Surgeon, 5 General Surgeon, 6 General Surgeon (Prof.) (fcleyi@gmail.com)

Rectal bleeding and perianal pain/discomfort are common indications for acute hospital admissions to the general surgery department. The patients consult to the doctor early because of the scary effect of bleeding and decrease quality of life by pain. In our study we compare the effectiveness of calcium dobesilate (CD), diosmin-hesperidin (MPFF) and sitz bath (SB) that were used alone and all together at the acute times of therapy. 173 consecutive patients were enrolled to our study with rectal bleeding. As a prospective randomized study, there were 5 groups participating each of them at least 34 patients. These are MPFF, MPFF + SB, CD, CD + SB and SB only. For discomfort and physical signs, the patients were seen at the hospital again at the 3th and 10thdays. The median age of the patients was 28(16–56) years. Seventy percentage of the patients had GradeII and 30 of them GradeIII hemorrhoids. Significant discomfort/pain relief was seen almost all in 5 groups (the best one was MPFF + SB group). The minimum effectiveness was seen on CD alone group and SB group. Sitz bath were used by 3 of the groups and rectal bleeding was detected only at 2(1.9,9) patients in these groups. At the patients with painfull Grade II and grade III hemorrhoidal diseases, oral therapy and sitz bath alone are not enough to give adequate acute response. The best clinical response is got out from the usage of oral therapy and sitz bath all together Key words: Rectal bleeding, Calcium Dobselate, flavonoids,

Gastrointestinal_2 P061

Calcium scoring in the aorto-iliacal trajectory: a new risk factor for leakage of a colorectal anastomosis

Komen Niels1, Klijtske Pieter2, Dijk Jan Willems3, Hermans John4, Jeekel Hans1, Lange Johan6
1 Department of Surgery University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands, 2 Department of Surgery University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands, 3 Department of Surgery University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands, 4 Department of Surgery University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands, 5 Department of Surgery University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands, 6 Department of Surgery University Medical Center Rotterdam Erasmus MC, Rotterdam, The Netherlands (n.komen@erasmusmc.nl)

Introduction: Decreased perfusion, local oxygenation and microcirculation are considered to be causative factors for colorectal anastomotic leakage. Atherosclerosis can reduce microcirculation and therefore local oxygenation. It is possible to quantify atherosclerosis, visualized on CT-scan, by means of the “calcium score software”. This pilot study aims to evaluate the possible correlation between the presence of these calcifications in the aorto-iliacal trajectory and colorectal anastomotic leakage.

Methods: The calcium scores of colorectal patients were determined on a preoperative CT-scan. The aorto-iliacal trajectory was split up in different segments being aorta, left and right common iliac artery, left and right internal iliac artery and the left and right external iliac artery. Additionally, risk factors for atherosclerosis and anastomotic leakage were scored, i.e. age, gender, BMI, smoking, alcohol use, use of steroids, antihypertensive drugs and statines, cardiac co-morbidity, type of anastomosis, urgent operation, operation, prophylactic drainage, protective ileostomy and bloodtransfusion.

Results: A total of 97 patients was included. Nine (9.3%) developed anastomotic leakage, of whom one died (11.1%). Statistical analysis showed a significant correlation between the calcium score in the right common iliac artery and the presence of anastomotic leakage (p = 0.043). A trend was found for the calcium score in the left common iliac artery and the presence of anastomotic leakage (p = 0.067). Analysis of the risk factors showed no significant differences between the group with and the group without anastomotic leakage.

Conclusion: This pilot study shows a significant correlation between the presence of atherosclerosis in the right common iliac artery and the presence of anastomotic leakage. For the left common iliac artery a trend was found. These results suggest that the calcium score, i.e. atherosclerosis, is a new risk factor for anastomotic leakage.

Hepatobiliary_2 P062

Two patients with VIPoma, we succeeded in curative surgical resection

Komoto Izumi1, Ota Shuichi2, Harada Tomiaki1, Adachi Yukito4, Hirai Kiyoshi1, Imamura Masayuki6
1 Saiseikai Noe Hospital, Japan, 2 Saiseikai Noe Hospital, 3 Saiseikai Noe Hospital, 4 Saiseikai Noe Hospital, 5 Saiseikai Noe Hospital, 6 Saiseikai Noe Hospital (i-komoto@ms.is.bj.co.jp)

Introduction: VIPomas are very rare pancreatic neuroendocrine tumors. VIP causes a distinct syndrome, very-large-volume diarrhea, severe hypokalemia, hypochlorhydria. Between September 2006 and May 2007, we experienced two patients with VIPoma. Patients Case 1 is 74 years-old female, She suffered from watery diarrhea form August 2006. She came to our hospital and hypokalemia and high serum VIP level (1980 pg/ml) were pointed out. We diagnosed her WDHA syndrome and treated her with Ocreotide Acetate before surgery. Vascular-rich tumor, its diameter was 25mm, was detected in the tail of the pancreas. Distal
pancreatectomy was performed. Case 2 is an 82-years-old female. She suffered from large-volume watery diarrhea and renal failure. Before treated with long-acting Octreotide Acetate, her serum VIP level was 1420 pg/ml. A small vascular rich tumor was detected in the pancreas head by CT scan. SAG or SASI test were not useful in this case. Under the diagnosis of pancreas head VIPoma, we performed enucleation of pancreas-head tumor. In both cases, after surgery, the serum VIP level returned to the normal and diarrhea stopped instead of giving up treatment with Octreotide Acetate.

**Conclusion:** We experienced two patients with VIPoma, to whom we performed curative surgical resection successfully. One of these cases, SASI test was useful to diagnose the location of VIPoma. SASI test with calcium enucleation of pancreas-head tumor. In both cases, after surgery, the serum VIP level returned to the normal and diarrhea stopped instead of giving up treatment with Octreotide Acetate.

**Introduction:** Type 1 iodothyronine deiodinase (D1) is responsible for the conversion of thyroxin (T4) into tri-iodothyronine (T3). The enzyme is mainly present in thyroid, liver and kidneys. There has been strong evidence that the metabolism of thyroid hormones is disturbed in some of neoplastic tissues such as thyroid cancer, renal cancer and breast cancer. However there are only few available data about D1 enzymatic activity in benign tumors such as haemangioma which is the most common primary liver tumor. Aim of the study The aim of this study was to estimate the enzymatic activity of D1 in liver haemangioma in comparison with healthy liver tissue. The activity was assessed by measurement of radioactive iodine released in reaction of deiodination catalyzed by D1. Material Seven tumors and seven healthy control tissues were obtained from the patients (average age 50) who had liver resection performed for benign tumors.

**Results:** It was found that D1 activity was significantly lower in haemangioma tissues compared with healthy counterparts (p = 0.0017).

**Conclusion:** Healthy liver tissue expresses high level of D1. In some liver lesions, for example colorectal liver metastasis, we discovered low D1 enzymatic activity. Interestingly in liver haemangioma elevated level of deiodinase type 3 (D3), which inactivates thyroid hormones was reported. Our finding demonstrates low enzymatic activity of D1 in liver haemangioma and suggest so far unknown role of thyroid hormones in this type of benign liver tumors.

**Hepatobiliary_1 P065**

**Polycystic liver disease (PLD): an indication for liver transplantation**

Kornasiewicz Oskar1, Nyczkowska Paweł1, Krawczyk Marek1

1 Department of General, Transplant and Liver Surgery Medical University of Warsaw, 2Department of General, Transplant and Liver Surgery Medical University of Warsaw, 3Department of General, Transplant and Liver Surgery Medical University of Warsaw, 4Department of General, Transplant and Liver Surgery Medical University of Warsaw

**Introduction:** Polycystic liver disease (PLD) is a rare, benign, inherited disorder where hepatic function is well preserved despite multiple cystic lesions throughout the liver. Liver failure rarely occurs. Most of patients with PLD have concomitant polycystic renal disease. PLD has been rare and controversial indications for liver transplantation because patients commonly have preserved liver function at the time of transplantation. Aim of the study The objective of the study was to evaluate indications and immediate results in patients with PLD treated for either liver or combined liver-kidney transplantation.

**Material and methods:** We reviewed charts of ten cases of adult patients with highly symptomatic polycystic disease who underwent OLTx or K-LTx for PLD between 2001 and 2007. Mean age was 45 years (range, 34 to 56 years). The group consisted of six patients (0-7%) who underwent OLTx and four (0-7%) patients who received simultaneous liver and kidney transplantation. The outcome was assessed were relief of symptoms, early postoperative complications and mortality.

**Results:** The main indication for liver transplantation in all ten cases were specific symptoms such as massive hepatomegaly causing severe physical handicaps, clinically advanced malnutrition, and poor quality of life which led to disability. Four patients with indications for combined liver-kidney transplantations were dialysis dependent. None on the patients had symptoms of end stage liver disease or clinical signs of hepatic failure. In cases of simultaneous transplantations, the kidney was implanted separately after the liver transplantation. All of the patients are still alive following the transplantation. No major surgical complications have occurred.

**Conclusion:** In our clinical practice, liver transplantation is a treatment of choice in those patients with severe symptoms or life threatening conditions. Patients with polycystic liver disease can undergo liver transplantation safely with good results and they benefit from the relief of abdominal distension and anorexia.
Sepsis, Infection, Immunity P066

Intestinal flora in critically ill trauma patients: the role of synthetic colloids
Kotzampassi Katerina1, Bezirtzoglou EFF2, Vaidarou CHRYSAY3, Alexopoulos Athanasios4, Voudouris Antonios5, Kazamias Pantelis6
1 Department Of Surgery, Faculty Of Medicine, University Of Thessaloniki, Thessaloniki, Greece, 2 Dept of Food Science & Technology, Lab. of Microbiology, Biotechnology & Higiene, Democritus University of Thrace, Orestiada, Greece, 3 Dept of Food Science & Technology, Lab. of Microbiology, Biotechnology & Higiene, Democritus University of Thrace, Orestiada, Greece, 4 Dept of Food Science & Technology, Lab. of Microbiology, Biotechnology & Higiene, Democritus University of Thrace, Orestiada, Greece, 5 Dept of Food Science & Technology, Lab. of Microbiology, Biotechnology & Higiene, Democritus University of Thrace, Orestiada, Greece, 6 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece, 2 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece, 3 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece, 4 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece

Intestinal mucosal barrier disruption seen in critical illness is mainly attributed to changes in gut flora composition, thus recently an effort was made to preserve or re-establish the normal flora with probiotics. Our purpose was to assess fecal flora in 75 critically-ill mechanically ventilated, multi-trauma patients receiving a combination of pre-and probiotics versus placebo and to correlate the findings with clinical outcome. Patients were randomized to—once daily for 15—Synthetic 2000Forte [Medipharm, Sweden] or maltodextrin [placebo]. Fecal samples were collected on days 0, 4, 7, and 15, for total microbial flora identification. Infections, septic complications, mortality, days under ventilatory support, and stay in ICU were recorded. Maltodextrin-treated group exhibited intestinal microbial decolonization; E.coli was absent, while major pathogens such as Klebsiella, C. difficile, S. aureus were prominent. The probiotic group was found to have significantly more balanced flora; from day-7 a significant increase of Lactobacillus, Prevotella, Bacteroides, and on day-15 of E.coli, Lactobacillus, Lactococcus, Peptococcus, Enterococcus, Bacteroides, was noted. A measurable increase between day-7 and day-15 was also prominent for E. coli and Lactobacillus sp. At clinical level, Synbiotic-treated patients exhibited a significantly reduced rate of infections ($p = 0.01$, SIRS, severe sepsis $p = 0.02$, days of ICU stay $p = 0.01$), and days under mechanical ventilation ($p = 0.001$) versus controls. Mortality rates were $14.3\%$ versus $30\%$, respectively. This specific probiotic formula administered in ICU multi-trauma patients upon admission seems to successfully compensate for loss of normal gut flora; the beneficial effect observed might well match the improved patient response with respect to infection and sepsis rates.

Gastrointestinal P067

Aluminum versus colloids in colon surgery patients—preliminary results
Kotzampassi Katerina1, Gromodis Vasilios2, Andreopoulos Konstantin3, OS4, Efthierdis Efthymios5
1 Department Of Surgery, Faculty Of Medicine, University Of Thessaloniki, Thessaloniki, Greece, 2 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece, 3 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece, 4 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece, 5 Department of Surgery, Faculty of Medicine, University of Thessaloniki, Thessaloniki, Greece

Introduction: In colon surgery for malignancy, tissue oedema, as a result of increased capillary permeability – due both to operational stress response and the perioperative fluid therapy—may contribute not only to the systemic consequences, but also to anastomotic dehiscence with questionable end results for the patient. The use of aluminum is considered to be the gold standard for prevention of this complication, being at least theoretically combined with hypoalbuminaemia; however, in recent years its use has become controversial. On the other hand, after the acknowledgement of the pharmacokinetic advantages of synthetic colloids, there has been an ongoing shift towards their use as perioperative fluid therapy in major elective surgery, too. We aimed to investigate the effect of colloids, as a postoperative regimen against routinely given human albumin in patients subjected to colectomy for cancer. Thirty-day mortality, including anastomotic leakage, abdominal wound infection and dehiscence, as well as organ specific and systemic infections, sepsis and septic shock, were assessed.

Methods: Fifty colon cancer patients with actual indication for early postoperative albumin treatment were randomized to receive either human albumin [100ml/day] or 6% HES130/0.4 [Voluven, Fresenius AG] [500ml/day], for 6 consecutive days. Patients were then followed up for the next 30days.

Results: In the albumin and Voluven groups anastomotic leakage was prominent in 3 and 1 patients, respectively; wound infection in 3 and 1, respectively, systemic infection in 5 and 4, and sepsis in 2 and 0 patients respectively. One patient finally died from sepsis from the albumin group.

Conclusion: We conclude that in our material, patients receiving Voluven against albumin as perioperative 6-day treatment, exhibited lower morbidity rates. However, further research is required.

Hepatobiliary_P068

Calculated primary hydatid cyst of gallbladder—a rare clinical entity
Krasnigi Avdyl1, Limani Dalip2, Spahija Gazmend3, Gashi-Luci Lunturije2
1 University Clinical Centre of Kosova, Department of Abdominal Surgery, Medical School University of Prishtina, Kosov, 2 University Clinical Centre of Kosova, Department of Abdominal Surgery, Medical School University of Prishtina, Kosov, 3 University Clinical Centre of Kosova, Department of Anesthesiology and Reanimation, Medical School University of Prishtina, Kosov, 4 University Clinical Centre of Kosova, Institute of Pathology, Medical School University of Prishtina, Kosov

Background: Hydatid disease is a common clinical pathology in many parts of the world. The main species pathogenic for humans in Mediterranean and Southern European countries is Echinococcus granulosus. Cystic hydatidosis continuous to be a common pathology of surgical wards in Kosovor. 70–80% of hydatid cysts are developed in the liver. Primary hydatid cyst of the gallbladder is an unusual and very rare localization. Until now, only five cases that fulfill the criteria of primary gallbladder hydatidosis are published in English language literature. The aim of this presentation is to shed light on some characteristics of diagnosis, spread routes and treatment of this very rare clinical entity. Case presentation: We report the clinical case of a 39 years old lady, referred to abdominal surgery department as a calcified hydatid cyst of the liver with gallbladder involvement. History of disease shows long-term chronic right upper quadrant abdominal pain with intermittent colic’s and nausea. Chest x-ray, plain radiograph of the abdomen, abdominal US and CT have been taken. Blood and other routine tests were taken as well. The patient underwent sub costal right laparotomy. The accurate diagnosis—a calcified primary hydatid cyst of gallbladder was made during the surgery. No other cyst was found at exploration of the peritoneal cavity. Complete pericystectomy along with cholecystectomy was performed. The histopathology confirmed the presence of calcified hydatid cyst of gallbladder.

Conclusion: Primary hydatid cyst of gallbladder is a very rare clinical entity. Specific preoperative diagnostic localization is not always easy, especially in the hospitals with limited resources. Complete pericystectomy along with cholecystectomy were performed. Cyst was developed entirely extra-mucosally. A possible spread route of oncospheres from gut mucosa to the gallbladder wall is through lymphatic circulation. Five year follow-up shows no complication and recurrence.
Gastrointestinal_3 P069

Pseudoaneurysms of visceral arteries in patients with chronic pancreatitis: diagnostics and treatment

Kriger AG1, Koklov LS2, Karmazanovsky GG3, Kozlov IA4, Barbin PB5, Tarheva NV6
1 Vishnevsky-Institute of Surgery, Moscow, Russia, 2 Vishnevsky-Institute of Surgery, Moscow, Russia, 3 Vishnevsky-Institute of Surgery, Moscow, Russia, 4 Vishnevsky-Institute of Surgery, Moscow, Russia, 5 Vishnevsky-Institute of Surgery, Moscow, Russia, 6 Vishnevsky-Institute of Surgery, Moscow, Russia, 7 Vishnevsky-Institute of Surgery, Moscow, Russia

Aim: To develop a algorithm of treatment of patients with pseudoaneurysms of visceral arteries complicating chronic pancreatitis

Materials and methods: 22 patients with pseudoaneurysms of visceral arteries in the setting of chronic pancreatitis were treated in Vishnevsky-Institute of Surgery since 1995. Mean age was 48 years (29–67 years). Diagnosis was based on ultrasound (US) examination (B-mode, duplex and 3D-reconstruction), contrast enhanced spiral computed tomography (SCT), conventional angiography. There were no clinically suspected pseudoaneurysms. 4 patients (18%) presented with gastrointestinal (GI) bleedings.

Results: There were 14 cases of splenic artery pseudoaneurysm, 4 cases of pancreaticoduodenal artery aneurysm, gastro-duodenal artery was involved in 3 cases and right hepatic artery once. Localization and size of pseudoaneurysm, as well as condition of pancreas influenced our tactic. Spontaneous thrombosis occurred in 3 cases of small (2–3 cm in diameter) pseudoaneurysms. Endovascular intervention was used in 10 cases with the size of lesion being not more than 55 mm and minimal pancreas changes. There were 8 vascular occlusions and 2 stent-graft implementations. The efficiency of treatment was evaluated with US exam. There was no flow in the aneurysm sac in 6 cases. In 2 cases endovascular occlusion was not effective resulting in surgical procedure: distal pancreas resection and splenectomy in one case and distal pancreas resection with splenectomy and pancreatico-jejunostomy in another. There was one death due to polyorgan failure. 9 patients with large pseudoaneurysms (60–138 mm), significant sclerotic changes of pancreas and pancreatic hypertension demanded open surgery. Twice surgical procedure was required to control massive GI bleeding. The following procedures were performed: distal pancreas resection + splenectomy − 3, splenic artery ligation with pseudoaneurysm “isolation” − 2, splenic artery ligation + pseudoaneurysm resection + splenectomy − 1, distal pancreas resection + Frey procedure + pseudoaneurysm resection − 1, Frey procedure + cholecystectomy, choledochotomy, common ileal duct drainage − 1. In the case of gastro-duodenal artery lesion cysto-pancreatico-jejunostomy and gastro-duodenal artery ligation was performed. One patient died.

Conclusion: Endovascular treatment is indicated in case of small pseudoaneurysms of visceral arteries without connection with pancreatic ducts. In case of pseudoaneurysms developing in the cavity of necrotic pancreatic cysts or in the setting of pancreatic hypertension a surgical procedure is performed. Endovascular procedures may be used pre-operatively to control bleeding during surgery.

Gastrointestinal_2 P070

A simple quality of life questionnaire for patients with faecal incontinence

Krysa J1, Lyons M2, Williams AR3
1 Guy’s and St Thomas’ NHS Trust, London, UK, 2 Guy’s and St Thomas’ NHS Trust, 3 Guy’s and St Thomas’ NHS Trust

Introduction: Faecal incontinence affects 2% of the adult general population. Current assessment tools only record the frequency and type of incontinence, with no measure of the affect on the patient quality of life. A simple quality of life questionnaire was designed to triage patients with faecal incontinence to the most appropriate level of support, investigation and treatment.

Method: A questionnaire was developed to include a ‘symptom’ score, similar in content to St Mark’s questionnaire and a ‘bothersome’ score. A pilot study (34 patients) assessed the clarity of questions. Once content validity was established it was sent to 360 patients who attended a pelvic floor clinic. Its external validity was assessed against the SF-36 and the Manchester Health Questionnaires. ABO analysis revealed the presence of a submucosal abscess and surrounding acute inflammatory response at the injection site. The patient made an uneventful recovery and is currently well.

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to compare the classical Darn repair (DR) with the LM to assess whether it remains an effective and justifiable operation.

Methods: All patients who underwent open inguinal hernia repair between 1992 and 2002 by the DR or LM method performed by a single surgeon. We evaluated and compared post-operative complications, hernia recurrence rates, operative time, cost and incidence of chronic pain in both groups.

Results: A total of 259 patients (51% DR, 49% LM) were analysed. The mean age was 48 years (range: 15–89). Mean follow up was 6 years (range: 2–11). Postoperative complications were minimal in both groups. Recurrence rates were 0.78% (LM) and 0.76% (DR). The incidence of infection was 2.3% for both groups. Incidence of chronic pain post surgery was 1.56% (DR) and 1.58% (LM). Although operation times were not significantly different in both groups, DR was cheaper compared with LM repair.

Conclusions: In our experience DR is still a safe and highly effective repair option that remains comparable with a LM repair. A well constructed DR still has a role in the treatment of primary inguinal hernia repair and ultimately may lead to significant cost benefit. These findings justify the use of this operation as an alternative to LM repair for open inguinal hernia repair.

Wound healing_1 P073

Enterovesical fistulas in patients hospitalized in Medical University of the Infant Jesus Hospital from 1995 to 2006

Kuzaka Bolesław1, Kawecki Darłusz2, Borkowski, Broda Tomasz, Joanna3, Wierzbicki Zbigniew4, Chmura Andrzej5, Borkowski Andrzej6

1 Dept. of Urology Medical University of Warsaw, Poland, 2 Dept. of Medical Microbiology Medical University of Warsaw, 3 Dept. of Urology Medical University of Warsaw, 4 Dept. of General Surgery and Transplantation Medical University of Warsaw, 5 Dept. of General Surgery and Transplantation Medical University of Warsaw, 6 Dept. of Urology Medical University of Warsaw (dkawecz@o2.pl)

Enterovesical fistulas are a relatively uncommon complications of colorectal and pelvic malignancies, diverticulitis, inflammatory bowel disease, radiotherapy and traumas in Poland. Authors reviewed material of 24 patients with enterovesical fistulas hospitalized in the Department of Urology and Department of Surgery of Jesus Infant Hospital Medical University of Warsaw from 1995 to the end of 2006. A total of 24 symptomatic fistulas were recorded in a 13 of women with the mean age 67 years (54% of patients) and 11 of men with the mean age 65 years (46% of patients). In all cases of persistent fistulas were treated by surgical and/or urological interventions. The origin of the fistulas were: colorectal malignancies 16 of patients (67%), pelvic malignancies 2 patients (8%), vesical malignancies 3 patients (12,5%) and other 3 patients (12,5%). The most common anatomical anastomoses were as follows: vesico-intestinal fistula in 12 patients (50%), vesico-rectal fistula in 4 patients (16,5%), vesico-enteral fistula in 2 patients (8,5%), urogenito-intestinal fistula in 3 patients (12,5%), other in 3 patients (12,5%). Surgical treatment of fistulas were: colostomy in 15 patients (50%), enteral resections and anastomoses in 6 patients (20%), transversosotomy 3 patients (10%), jejunosotomy 1 patient (3%), other in 5 patients (17%). To the end of 2006 from 24 patients underwent of treatment. 9 patients are alive (37,5%), 8 patients death (33,3%), 7 unknown (29,2%). The median period of life were 12 months (from 1 to 84 months) after.

Conclusions: 1. The most common etiological factors of enterovesical fistulas were colorectal malignancies 67% of patients. 2. Only 20% of patients were underwent completely surgical treatment because of advanced malignancies. 3. The most common method of surgical treatment was colostomy in 63% of patients.

Minimally invasive P074

The consequences of lost gallstones in the abdominal cavity after laparoscopic cholecystectomy—experimental animal study

Levay Bernadett1, Mikó Irén2, Szabó-Györgyi Schneider Ferenc3, Takács-Illdiks Bríth-Endre4, Furka István5, Gamal-Eldin Mohamed6

1 Dept. of Reconstructive Surgery, Governmental Medical Centre, Budapest, Hungary, 2 Institute of Operative Techniques & Experimental Surgery, Univ. of Debrecen, Hungary, 3 National Institute of Oncology, Budapest, Hungary, 4 Techniques & Experimental Surgery, Univ. of Debrecen, Hungary, 5 Techniques & Experimental Surgery, Univ. of Debrecen, Hungary, 6 Dept. of Day Surgery & Min. Invasive Procedures,Budáras, Hungary (gamal139@hotmail.com)

Background: The problems caused by gallbladder perforation and splitting of gallstones during laparoscopic cholecystectomy (LC) are thought to have been of no importance, though some clinical papers report about serious complications caused by the stones. In this animal experiment we studied the behaviour of contaminated and non-contaminated gallstones placed in the abdominal cavity of experimental animals to detect the macro-, and microscopic morphologic changes in the specimens gained from the surrounding of the stones. Contaminated gallstones (cg) and sterile manufactured cholesterol (mc) stones of the same size were placed in the abdominal cavity of experimental animals, far from each other, separately, in the right and left subphrenic region. In the 14th postoperative day the animals were sacrificed and morphological appearances were detected. No any traces of cholesterol stones were found! While massive inflammatory processes, abscesses and adhesion formation was detected in the surrounding of the stones. This was also proved by the histologic results of the specimens taken.

Conclusion: Gallstones could be contaminated and may cause serious complications in the abdominal cavity like inflammation, adhesion or abscess formation. Cholesterol stones have the chance to be absorbed, but also they may be associated by minor complications, like adhesion formation.

Hepatobiliary_2 P075

Liver diseases in severely obese subjects undergoing bariatric surgery

Lisik Wojciech1, Wierzbicki Zbigniew2, Szalas Jakub3, Ziemiański Paweł4, Chmura Andrzej5, Rowinski Wojciech6

1 Department of General Surgery and Transplantology, Medical University of Warsaw, Poland, 2 Department of General Surgery and Transplantology, Medical University of Warsaw, Poland, 3 Department of General Surgery and Transplantology, Medical University of Warsaw, Poland, 4 Department of General Surgery and Transplantology, Medical University of Warsaw, Poland, 5 Department of General Surgery and Transplantology, Medical University of Warsaw, Poland, 6 Department of General Surgery and Transplantology, Medical University of Warsaw, Poland (wojciech.lisz@amu.edu.pl)

Fatty liver disease can range from fatty liver alone (steatosis) to fatty liver associated with inflammation—non-alcoholic steatohepatitis (NASH). Steatohepatitis may progress to liver fibrosis and cirrhosis, and may result in liver-related morbidity and mortality. Fibrosis in the liver may be present in 30–50% of patients with NASH. Only small number of patients with NAFLD eventually suffer from end-stage liver disease and even hepatocellular carcinoma.

Methods and patients: In our study we analyzed frequency of NASH in obese patients, underwent bariatric surgery. Comparison enclosed results of 112 patients selected for bariatric surgery: either Roux-en-Y Gastric Bypass (RYGB) or Vertical Banded Gastroplasty (VBG). Mean body weight 141.4 kg, mean BMI 45.8 kg/m², mean body fat 51.7%, mean age 43.2 years old, 88 women, 20 men. We assessed biochemical (aminotransferases, albumin, level of hepatic steatosis.

Results: All patients had normal prothrombin time, normal serum albumin, alkaline phosphatase, bilirubin and morphological (ultrasonography and biopsy taken during surgery) parameters of liver.

Conclusions: The analysis of liver biopsies have shown NASH in 43.7% patients, liver steatosis in 81.2% patients, portal fibrosis (42%), portal fibrosis (15%). We noticed significant statistical correlation between BMI and level of hepatic steatosis.
**Conclusion:** Liver diseases in NASH and fibrosis are necessary to be monitoring in severe obese patients. The weight loss secondary to the bariatric surgery, may be associated with decrease in the incidence of nonalcoholic fatty liver disease.

**Hepatobiliary 2 P076**

**Working Memory Alterations in Two Experimental Models of Type C Hepatic Encephalopathy**

Losada M, Cruz A, Aller MA, Méndez M, Arias J, Arias JL. 1 General Surgery Department. Virgen de la Luz Hospital. Cuenca, Spain, 2 General Surgery Unit. Virgen de la Luz Hospital. Cuenca, Spain, 3 Surgery I Dep. Complutense University Medical School. Madrid, Spain, 4 Psychology Lab. School of Psychology. University of Complutense of Madrid, Spain, 5 Biochemistry and Molecular Biology Department. School of Medicine. Complutense University of Madrid, Spain, 6 Biochemistry and Molecular Biology Department. School of Medicine. Complutense University of Madrid, Spain, 7 Psychiatry Lab. School of Psychology. University of Complutense of Madrid, Spain (manuellosadaruiz@hotmail.com)

**Background and aims:** Hepatic encephalopathy (HE) produces attention and memory deficits in humans. There was no consensus about factors that determine these cognitive impairments, since these deficits are not related to the different etiopathogenesis of HE. Three types of HE have been proposed: A (with acute hepatic insufficiency), B (with porto systemic shunts) and C (with cirrhosis and portal hypertension or porto systemic collateral circulation). Our aim is to study working memory alterations in B and C HE experimental models.

**Methods:** 44 male Wistar rats, control rats (C; n=8), sham operated (SO; n=8), rats with triple partial portal vein ligation (TPVL; n=8), with end-to-side portocaval shunts (PCS; n=8), and with cirrhosis and portal hypertension by thioacetamide (TAA; n=10) were used. Spatial working memory was evaluated using the Morris water maze in a paired sample task. Task was developed in six sessions that were carried out on six consecutive days.

**Results:** Differences between groups were demonstrated. SO and PCA rats had an unimpaired working memory. Both groups showed retention of information (p=0.015). Nonetheless, TPLV did not. There were differences between C and TAA. Retention of information was shown only by C (p=0.035).

**Conclusion:** Our findings suggest that type C HE present a severe deficit in working memory. Portal hypertension, a feature of TAA and TPVL rats, could be involved in working memory deficits, suggesting a functional impairment of brain limbic system which is implicated in this type of learning.

**Hepatobiliary 2 P077**

**Chronic Prehepatic Portal Hypertension in the Rat: Is it a type of Metabolic Inflammatory Syndrome**

Losada M, Cruz A, Aller MA, Vara E, Garcia C, Arias J. 1 General Surgery Department. Virgen de la Luz Hospital. Cuenca, Spain, 2 Surgery I Department. School of Medicine. Complutense University of Madrid, Spain, 3 Surgery I Department. School of Medicine. Complutense University of Madrid, Spain, 4 Biochemistry and Molecular Biology Department. School of Medicine. Complutense University of Madrid, Spain, 5 Biochemistry and Molecular Biology Department. School of Medicine. Complutense University of Madrid, Spain, 6 Surgery I Department. School of Medicine. Complutense University of Madrid, Spain (manuellosadaruiz@hotmail.com)

**Background:** A progressive development of hepatic steatosis with an increase in the lipid hepatocyte content and the formation of megamitochondria have been demonstrated in rats with prehepatic portal hypertension. The aim of this study was to verify the existence of liver and serum lipid metabolism impairments in rats with long-term (2 years) portal hypertension.

**Methods:** Male Wistar rats: Control (n=10) and with prehepatic portal hypertension by triple partial portal vein ligation (n=9) were used. Liver content of Triglycerides (TG), phospholipids (PL) and cholesterol and serum cholesterol, lipoproteins (HDL and LDL), TG, glucose and Lipid Binding Protein (LBP) were assessed with specific colorimetric commercial kits. Serum levels of insulin and somatostatin were assessed by RIA.

**Results:** The liver content of TG (6·30±1·95 versus 4·17±0·59 µg/ml; p<0·01) and cholesterol (1·48±0·15 versus 1·10±0·13 µg/ml; p<0·001) increased in rats with portal hypertension. The serum levels of cholesterol (97·00±26·02 versus 114·78±37·72 mg/dl), TG (153·41±80·39 versus 324·39±134·9 mg/dl; p<0·01), HDL (20·45±5·14 versus 55·15±17·47 mg/dl; p<0·001) and somatostatin (1·32±0·31 versus 1·59±0·37 mg/dl) decreased, whereas LDL (37·83±15·39 versus 16·77±6·81 mg/dl; p<0·001) and LBP (308·47±194·53 versus 60·27±42·96 mg/l; p<0·001) increased.

**Conclusion:** Portal hypertensive in the rat presents changes in the lipid and carbohydrate metabolism similar to those produced in chronic inflammatory conditions and sepsis in humans. These underlying alterations could be involved in the development of hepatic steatosis and, therefore, in those described in the metabolic syndrome in humans.

**Orthopedic P078**

**Early results of patello-femoral joint arthroplasty in a district general hospital**

Malhotra Akshay, Velpula Jagann, Singh Jagwanti, Dunn Peter, Benton Mark. 1 Macclesfield District General Hospital, Macclesfield, UK, 2 Macclesfield District General Hospital, 3 Macclesfield District General Hospital, 4 Macclesfield District General Hospital, 5 Macclesfield District General Hospital (akshay16@gmail.com)

Isolated patellofemoral arthritis is a well recognised variant of the osteoarthritic knee. We present early follow up results of patellofemoral arthroplasty in a district general hospital. A retrospective study was undertaken based on notes of 12 patients operated in the past 24 months. All twelve patients were investigated initially with an arthroscopy by a consultant who identified the patellofemoral arthritis. They were further operated by the same surgeon and the same type of implant was used in all the patients. A clinical and radiological follow-up was carried out which showed patellae tracking was normal and there wasn’t any evidence of loosening. Oxford knee score was used to judge patient satisfaction. Average age of the patients was 60 years with the range being from 42–83 years. Average length of hospital stay was 4 days with the range being 3–7 days. Average follow-up was 14months with the range being 7–24 months. The average oxford score was 18. Average range of post-operative movements attained for the knee were 0–120 degrees. The visual analogue score was 9/10.

Thus here we are highlighting the encouraging early results we have attained using isolated patellofemoral arthroplasty in a district general hospital.

**Orthopedic P079**

**Determining correlation between clinical examination, Magnetic Resonance Imaging and Arthroscopy of the Knee joint**

Malhotra Akshay, Velpula Jagann, Singh Jagwanti, Sundaram R, Kershaw Steve. 1 Macclesfield District General Hospital, Macclesfield, UK, 2 Macclesfield District General Hospital, Macclesfield, UK, 3 Macclesfield District General Hospital, Macclesfield, UK, 4 Macclesfield District General Hospital, Macclesfield, UK, 5 Macclesfield District General Hospital (akshay16@gmail.com)

**Aim:** Historically for diagnosing soft tissue injuries of the knee we have relied on clinical examination but with the advent of the MRI scan many surgeons’ choose to confirm their diagnosis with its help. Our audit aimed to ascertain the efficacy of clinical examination and the need for MRI scans only in specific cases. For this we correlated clinical findings, radiological findings and arthroscopic findings of the knee joint.

**Methodology:** We performed a retrospective study, its time period spanning from Jan 2006 to April 2007 where we identified patients who underwent arthroscopy of the knee joint. A total of 62 patients were identified all of them (n=62). Of these patients the clinical and radiological findings were compared with the arthroscopy findings. We correlated the clinical findings with the arthroscopic findings, the MRI findings with the arthroscopic findings and clinical findings with the MRI findings.

**Results:**

- 56 patients had no evidence of an intra-articular abnormality.
- 6 patients had findings that were not consistent with the MRI or clinical findings.
- In 1 patient there was evidence of a meniscal tear that was not consistent with the MRI findings.

**Conclusion:** In the group of patients studied, the efficacy of clinical examination with the introduction of the MRI scan helped in decreasing the number of arthroscopic procedures. Further studies are ongoing to evaluate the need for MRI scans in specific cases.
which were operated upon by a single surgeon. We have compared the clinical diagnosis, MRI scan and arthroscopic diagnosis. In our cohort the male to female ratio was 38:24 and the average age was 52 years (Range from 22 to 83).

**Results:** Out of 62 patients, 55 had a definitive pre-operative clinical diagnosis and 7 have no clear cut pre-operative diagnosis. Comparing the initial clinical diagnosis and arthroscopic findings In 44 patients out of 55 having a definitive pre-operative clinical diagnosis, the clinical and arthroscopic findings correlated with each other (80%) while in the remaining 11 patients clinical findings did not correlate (20%). Comparing the MRI scan reports with the arthroscopic findings we found—48% patients had a complete correlation, 23% partial correlation and 26% no correlation.

**Conclusion:** In our study we found only 50% of MRI scans were accurate. Approximately 25% of the MRI scans were inaccurate. This lead to the question whether we need to perform MRI scans if we suspect meniscal or ACL tear or degenerative disease? Our recommendations welf the clinical findings are convincing—list for an arthroscopy straight away. If the clinical diagnosis is inconclusive or there is vague history or the patient has been seen by multiple surgeons—MRI scan would be indicated.MRI scan should be reserved for more complicated and confusing cases so that we can avoid unnecessary burden on the MRI scanner and be more cost effective. Also unnecessary delay in waiting for the scan results in delay of the surgery and prolongation of the patients’ pain and morbidity.

**Orthopedic P080**

**Relationship between central axis of proximal tibia and centre of ankle joint – a radiological study**

Mandalia V, Blattacharjee A, Eldridge J, Toms A

*Triana & Orthopaedics Department Bristol Royal Infirmary, Bristol, UK (bhattacharjee_santanu@hotmail.com)

**Background:** Tibial endosteal referencing forms the basis of proximal tibial cut in revision knee replacement so that the centre of the tibia will coincide with the centre of the ankle joint. Aim: Examine the relationship between the central axis of proximal tibia and centre of the ankle joint.

**Method:** 100 digital long leg standard films were studied to evaluate the relationship between the central axis of proximal tibia and centre of the ankle joint; 5 of these films were of patients awaiting revision of total knee replacement. Five separate central points in proximal tibia is joined to form the central axis of proximal tibia which was extended distally up to the level of ankle joint.

**Results:** A deviation of 0–5mm was observed in 66 patients, 5–10mm in 25 patients and more than 10mm in 9 patients.

**Conclusion:** The central axis of tibia does not always correspond to the centre of the ankle joint. This is important in cases of revision knee replacement where proximal tibial endosteal referencing is used for the proximal tibial cut. A significant deviation of the distal extension of proximal tibial central axis from the centre of the ankle joint will lead to tibial component being misaligned instead of being perpendicular to the ankle joint. Patients undergoing revision knee replacement should have at least full-length tibial x-ray to identify this anatomical variation. Also the position of the tibial component as seen on x-rays of the knee does not always represent its relation with the ankle joint.

**Sepsis, Infection, Immunity P081**

**Use of per-anal suction drains in collapsing pelvic abscess cavities**

Mangam Sudhakar¹, Chandra Aninda², Marzouk Deya³

¹Association of Surgeons of Great Britain and Ireland, ²Royal College of Surgeons of England, ³Royal College of Surgeons of Edinburgh (dmmdsdhakar@yahoo.com)

Pelvic abscess are a recognised complication of colorectal surgery. Drainage of these is often performed percutaneously under radiological image control. We describe two cases where the patients developed pelvic abscesses after Hartmann’s procedure. Drainage was effected using a per-anal looped Redivac drain which was placed in the pelvic cavity, through rectal stump with relatively rapid resolution of symptoms. This is a simple technique that transforms a potentially complex complication of the procedure with rectal discomfort and leakage into a method to maximise resolution of the pelvic abscess. Pelvic abscess cavities are notorious for the length of time they need to collapse and heal completely. On occasions, patients may end up with non-healing chronic pelvic abscess cavity, which needing complex intervention to attempt to heal it. The technique described here is simple, provides dependent drainage, can be maintained effectively for weeks & seems to be an effective alternative to percutaneous drainage.

**Oncology P082**

**Reverting the blocking effect of growth factors on the inhibitory effect of Melphalan in rhabdomyosarcoma cancer cells**

Marin Hector¹, Sanisidro Roberto², Garcia-Alonso Ignacio³, Alonso-Varona Ana⁴, Quintana Adrian⁵, Palomares Teodoro⁶

¹Laboratory of Experimental Surgery, University of The Basque Country. Leioa. Spain, ²Laboratory of Experimental Surgery, University of The Basque Country. Leioa. Spain, ³Laboratory of Experimental Surgery, University of The Basque Country. Leioa. Spain, ⁴Laboratory of Experimental Surgery. University of The Basque Country. Leioa. Spain, ⁵Laboratory of Experimental Surgery. University of The Basque Country. Leioa. Spain, ⁶Laboratory of Experimental Surgery. University of The Basque Country. Leioa. Spain (ignacio.galonso@ehu.es)

We have previously demonstrated the stimulatory effect of several growth factors (GF) on rhabdomyosarcoma cell cultures. Herein we study their effect on Melphalan treatment in vitro, and the efficacy of all-trans retinoic acid (ATRA) to compensate for that effect.

**Methods:** S4MH rhabdomyosarcoma cells were cultured in DMEM enriched with 10% fetal calf serum. Proliferation studies have been carried out on 24-wells plates, seeded with 10,000 cells. Every 24h the number of cells/well was assessed using a Neubauer plate. First of all, the effect of Melphalan and ATRA on the culture was assessed. Then, the effect of Melphalan or ATRA + Melphalan on cultures stimulated with different GF (HGF, VEGF, FGFb, PDGF, IGF-II, EGF) was analysed. Previously, the optimal concentration of GF was assessed. Differences were analysed using a two-way ANOVA.

**Results:** In the absence of GF, ATRA (10-6M) and Melphalan (2,5·10-6M) reduce by 1-6 the proliferation of the culture. If both drugs are combined this reduction increases up to a 2.7 fold (p < 0.05). The strongest protumoral effect was achieved by PDGF (10 ng/ml), completely reverting the effect of Melphalan on the culture. However, if ATRA is added to Melphalan the proliferation of the culture drops by a 1.4 fold. Quite similar results are obtained when adding HGF (10 ng/ml) or VEGF (10 ng/ml) to the cultures. IGF-II induces only a slight stimulus to the cultures treated with Melphalan, and so the addition of ATRA reduces by 2-1 fold the proliferation if compared to the non-treated cultures. Lat of all, FGFb and EGF do not modify the antiproliferative effect of Melphalan.

**Conclusion:** Some of the GF promoted by surgery and, more specifically, by liver resection reduce or block the antiproliferative effect of Melphalan. In presence of these GF, the addition of ATRA restore the previous levels of efficiency of the citostatic treatment.

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Cardiovascular, Thoracic J P083

Does the Short Form 36 (SF 36) quality of life tool adequately reflect balance and activity status in patient with intermittent claudication (IC)?

Mazari Fayyaz Ali Khan1, Jordan Alistair2, Vaniece Natalie3, Chetter Ian4, Coughlin Patrick5
1 Academic Vascular Surgery Unit Alderson House Hull Royal Infirmary, Hull, UK, 2 Department of Sports, Health & Exercise Science University of Hull, 3 Department of Sports, Health & Exercise Science University of Hull, 4 Academic Vascular Surgery Unit Alderson House Hull Royal Infirmary, 5 Academic Vascular Surgery Unit Alderson House Hull Royal Infirmary (fayyazmafarr8@hotmail.com)

Background: The SF 36 is a well validated generic quality of life (QOL) tool in claudicants, reflecting physical, psychological and social impairments. Patients with IC are thought more likely to have poor balance, postural instability and an increased risk of falling. The Activity-specific Balance Confidence (ABC) scale is a valid measure of fear of falling in the elderly. No study has attempted to establish whether the SF 36 accurately reflects instability in claudicants as measured using the ABC. AIMS: To establish whether SF 36 adequately reflects instability in claudicants.

Methods: Fifty seven claudicants (+4 men) with mean age of 74 years (range 50–87 years) completed the SF 36 and the ABC. All patients undertook a standard treadmill test (10 degree, 2 5mm/Hr) and their maximal walking distance (MWD) measured. Spearman Rank Correlation and Mann Whitney U tests were used where applicable.

Results: The median ABC score was 81.1%, although 26 (45%) had scores < 80% (indicating some functional impairment). Neither age nor sex correlated with the ABC score. Treadmill MWD showed weak correlation with the ABC score (rs = 0.43) The ABC score correlated with all health domains of the SF 36 but showed strongest correlation with the domains of Physical function (rs = 0.69; p < 0.0001), social function (rs = 0.71; p < 0.0001) and overall Physical Summary (rs = 0.64; p < 0.0001)

Conclusion: A significant proportion of claudicants admit to a fear of falling and poor balance and this is associated with poor social function. The SF 36 reflects balance confidence and fear of falling as determined by the ABC. We aim to assess whether effective treatment for claudication influences these outcome measures.

Orthopedic P084

The possibilities of external fixation application in the treatment of unstable pelvic fractures

Michalski Pawel1, Deszczynski Jaroslaw2, Stolareczyk Pawel3
1 Dept. Orthop. & Rehab., Medical University, Wroclaw, Poland, 2 Dept. Orthop. & Rehab., Medical University, Wroclaw, Poland, 3 Department of Clinical Rehabilitation, Wroclaw Medical University,Poland (jlezcz@z2.p2)

Introduction: Pelvic fractures are a serious problem of traumatological surgery. They often coincide with other serious injuries. Immediate external fixation of an unstable pelvic fracture is often a life-saving procedure (it prevents shock) and is absolutely indicated as the primary, emergency management of such fractures. In some cases, external fixation can be sufficient as the ultimate management in traumas of the pelvic girdle. External fixator is necessary, which construction allows not only stabilization, but also reposition of fractures (both compression and distraction of bone fragments). It is possible to manipulate the device on a patient in order to obtain anatomic position of the pelvis. In our material (23 patients) in type B1 fractures (15 patients), anatomic position of bone fragments was obtained in 13 patients. In 2 cases, the results of reposition were unsatisfactory. Such effects were associated, among others, with too long time elapsed between the trauma and application of the fixator (7 days) and the patients’ obesity. In type B2 fractures, correct positioning of bone fragments was obtained in all cases (6 patients), and external fixation was the ultimate treatment of the pelvic fracture. On the other hand, in vertically unstable type C fractures (2 patients) we failed to obtain correct positioning of the fractured bones.

Conclusion: in case of type B fractures, external fixators ensure stability of the pelvic girdle, but in type C fractures external fixators do not provide sufficient stabilization and can be applied only as temporary fixation.

Education P085

Graduate education of “basic surgical techniques” between 1987–2007 at the department of operative techniques and surgical research, University of Debrecen

Miko Iren1, Endre Brath Katalin Peto2, Tamas Lesznyak Norbert3, Nemeth4, Furka Andrea2, Takacs E. Ilidiko5, Furka Istvan6
1 Department of Operative Techniques and Surgical Research, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 2 Department of Operative Techniques and Surgical Research, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 3 Department of Operative Techniques and Surgical Research, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 4 University of Debrecen, Debrecen, Hungary, 5 Augustea Surgical Center, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 6 Department of Operative Techniques and Surgical Research, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary.

The curriculum of 10 weeks (40 hours) “Basic Surgical Techniques” subject for medical students was developed by our Department in 1987. It forms the basis of our present education, too. From 1991 it has been completed with “Surgical Operative Practices” and “Introduction to Microsurgery”, from 1995 “Introduction to Laparoscopic Surgery” courses (20–20 hours). In connection with introduction of the credit-system in 2004 “Basic Surgical Techniques” subject was qualified as “compulsory course”, “Introduction to Laparoscopic Surgery” as compulsory elective, the two others as freely chosen elective courses. Our education was renewed in the last few years. New syllabus type textbooks issued for all faculties were written. New slide collections and several video films help our teaching work. According to the law of animal care increasing number of the practices are performed on “surgical phantom/simulation models”: skin-, injection-, venous cutdown-and laparotomy pads, bowel and aorta biomodels. From 2004, in conformity with European Union requirements, practices are performed on inbred beagle dogs with the permission of the Committee of Animal Research at the University. There is a bilateral video connection between the seminar rooms and operating theatres. Students learn both basic things that are “essential” for all physicians, both procedures that are “useful” irrespectively of the special fields of medicine, besides getting “orientation” on several surgical interventions and new techniques. Our method is teaching in small groups with maximum 5–6 students under the direction of tutors. Furthermore, clinical surgeons and well-prepared undergraduate demonstrators help the education. Interest in our elective courses increases permanently, about 150–160 students apply yearly. According to our quality assurance system (ISO 9001:2000), by anonym opinions, the courses are considered to be interesting, useful and important for students. This fact motivates us to develop and widen our teaching system. From 2007 the curriculum was extended to 15 weeks.

Gastrointestinal J P086

Predicting Negative Appendectomy by Using Demographics, Clinical Presentations, and Laboratory Parameters

Mohbibi Hassan Ali1, Panahi Farzad2, Moussavi Naeeni Seyed Mortez4, Kabir Ali3
1 Department of Surgery and Trauma Research Center, Baqiyatallah University of Medical Science, Tehran, I.R.Iran, 2 Associate professor of surgery-Trauma Research Center, Baqiyatallah University of Medical Science, Tehran, I.R.Iran, 3 Assistant professor of surgery-Department of Surgery, Baqiyatallah University of Medical Science, Tehran, I.R.Iran, 4 General Practitioner-Baqiyatallah University of Medical Science, Tehran, I.R.Iran (mbebibi@yahoo.co.in)

Copyright © 2008 British Journal of Surgery Society Ltd Published by John Wiley & Sons Ltd www.bjs.co.uk British Journal of Surgery 2008; 95(S6): 1–104
Introduction: Acute appendicitis (AA) is a common acute surgical disease. While negative appendectomy (NA) is inevitable, challenge for a surgeon is to decrease NA without increasing the morbidity and mortality.

Methods: In a cross-sectional study, 1116 patients with a primary diagnosis of AA who underwent open appendectomy in two hospitals were evaluated. Data were compared between the two groups (AA and NA). Statistical analysis was performed using one way ANOVA, Kappa and odds ratio correlation coefficients and the logistic regression model.

Results: The mean age was 24·110·23 years. There were 811 (72·6%) males. Rate of NA was 18·2%. The regression model revealed that being female (p = 0·001), having a lower percentage of polymorph nuclear (PMN) cells (p = 0·024) and lower heart rate (p = 0·01) could be regarded as independent predictors of NA (p < 0·001).

Conclusion: Female gender, low PMN percentage and low pulse rate, can provide important diagnostic information in addition to other diagnostic evaluations to prevent unnecessary appendectomy.

Orthopedic P087

Earthquake Related Injuries in 854 casualties of the 2003 Bam (Iran) Disaster Incident who transported to Tertiary Referral Hospitals

Mohebbi Hassan Ali1, Panahi Farzad2, Towliat Kashani Seyed Mohsen3, Moharamzad Yashar4

1 Baqiyatallah University of Medical Science, Trauma Research Center and Department of Surgery-IR, Iran, 2 Associate Professor of General Surgery-Baqiyatallah University of Medical Science, Trauma Research Center–IR, Iran, 3 Associate Professor of General Surgery-Baqiyatallah University of Medical Science-IR, Iran, 4 General Practitioner-Baqiyatallah University of Medical Science, Trauma Research Center–IR, Iran

Introduction: In December 2003, the residents of Bam (Iran) experienced an earthquake (6·6 Richter) which destroyed more than 90% of the city. About 12,000 of casualties were transferred to tertiary referral hospitals all over the country including to hospitals in Tehran, the capital of I.R.Iran.

Methods: Demographic, injury patterns, severity, diagnosis, treatment, and outcome data evaluated in randomised sampling.

Results: In 854 cases, there were 467 (54·7%) males; the mean age was 29·03 years. About 46% had received initial medical cares in field before transfer. Transportation by aircraft was the most common type for 555 cases (65%). Fractures of the lower extremity were the most common injury (25%). Limb fixation was the most initial procedure (389 times, 65%). Fractures of the lower extremity were the most common injury (25%).

Conclusion: Female gender, low PMN percentage and low pulse rate, can provide important diagnostic information in addition to other diagnostic evaluations to prevent unnecessary appendectomy.

Cardiovascular, Thoracic I P088

Recurrent of Spontaneous pneumothorax and related factors in 54 cases

Mohebbi Hassan Ali1, Nasser Mohammad2, Hassan3, Akhavan Moghadam Jamal4

1 Baqiyatallah University of Medical Science, Department of Surgery and Trauma Research Center, Iran, 2 Assistant professor of cardiovascular Surgery-Department of Surgery -Baqiyatallah University of Medical Science, Tehran, I.R.Iran, 3 Medical Science, Tehran, I.R.Iran, 4 Assistant professor of Surgery-Department of Surgery -Baqiyatallah University of Medical Science, Tehran, I.R.Iran

Introduction: Spontaneous pneumothorax(SP) is a clinical problem and may recur.

Methods: A descriptive cross-sectional study performed on patients in two hospitals in five years. They followed up for recurrence. Data analysis was done by evaluation of central indices, Pearson-chi square and student T-test.

Results: In 54 patients, 48(89%) were male with male to female ratio 8 to 1, mean age was 32·2 years, 16(30%) were smokers. The most common symptom and sign were chest pain (79%) and decrease of breath sounds (72%). In 70·5% the right side was involved. Primary SP and Secondary SP were in 28(51·8%) and 24(44·5%) of cases, respectively. The most frequent therapy was chest tube insertion in 50 cases (92·5%). In follow up in 33 months, there were 12(23·5%) recurrences and 7(16·6%) deaths. Among multiple parameters, only duration of follow-up period had statistically correlation with recurrence rate of SP.

Conclusions: Recurrence in SP is related to many factors. Duration after first SP may be a

Oncology P089

Hospital Volume in the Surgical Treatment of Colon Cancer

Mróczkowski Paweł1, Kube Rainer2, Ptok Henry3, Köckerling Ferdinand4, Gastinger Ingo5, Lippert Hans6

1 Klinik für Allgemein-, Viszeral- und Gefäßchirurgie Universitätshospital Magdeburg Magdeburg, Germany, 2 Klinik für Allgemein-, Viszeral- und Gefäßchirurgie Universitätsklinikum Magdeburg Magdeburg, Germany, 3 Chirurgische Klinik, Carl-Thiem-Klinikum Cottbus, Germany, 4 Viszentes Klinikum Spandau, Berlin, Germany, 5 Chirurgische Klinik, Carl-Thiem-Klinikum Cottbus, Germany, 6 Klinik für Allgemein-, Viszeral- und Gefäßchirurgie Universitätshospital Magdeburg Magdeburg, Germany (mroczky@mxz.net)

The dependence of surgical results from hospital volume was controversial discussed in the last years. Many studies suggest a clear relationship, observing better results in larger treatment providers. However, the mechanism of this observation was not defined yet, as result of building the study concepts on a basis of administrative data (Medicare records etc.).

Material and methods: Analyzed were records of 31261 colon carcinoma patients surgically treated between 2000 and 2004, collected within an observational study “Quality of surgical treatment in colorectal carcinoma”. There were 345 hospitals participating in the project on voluntary basis.

Results: The departments were divided into groups according to the yearly number of operations for colon carcinoma: group I: low volume (< 30), group II: medium volume (30–60) and group III: high volume (> 60). There were 7760 patients treated in group I, 14008 in II and 9493 in III. The risk factors and ASA classification were similar in all groups. High-volume hospitals treated more often patients with previously diagnosed carcinoma (p < 0·0001), patients with ileus were more often treated in low-volume hospitals (p < 0·0001). The discontinuity resection was most often conducted in high volume hospitals (p < 0·0001). The higher volume hospitals were more confident in the own surgical technique, the 1-row-hand-anastomosis was most common in this group, the 2-row-hand-anastomosis in the low-volume group, the stapler-anastomosis in the medium-volume group (p < 0·001). There was no difference in intraoperative complications or duration of surgery. The low-volume group reported the highest amount of patients without any postoperative complications (p < 0·001). The high-volume hospitals treated more patients in UICC-stadium 0, II and IV, the low-volume in stadium II and III (p < 0·0001). There were only small differences in the rates of local failures and 5 years survival.

Conclusion: Participation at voluntary quality-control study can provide an appropriate surgical treatment for colon carcinoma even in small-volume hospitals.
Oncology P090

Intra-operative blood transfusion in cancer surgery: is it safe? A pilot study

Muzzalli Zinebi1, Heper Michal2, Henny Pieter3, Korte Dirk4, Hollmann Marcus3, Van Gulik Thomas5

1 Department of Experimental Surgery and Department of Anesthesiology, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands, 2 Department of Experimental Surgery, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands, 3 Department of Anesthesiology, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands, 4Sanguin, Amsterdam, the Netherlands, 5Department of Anesthesiology, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands, 6Department of Experimental Surgery, Academic Medical Center, University of Amsterdam, Amsterdam, the Netherlands (z.muzzalli@macc.uva.nl)

Introduction: Allogeneic blood transfusions are associated with several complications, consequently, cell saving systems are commonly used during surgeries in which much blood loss is expected. This enables re-transfusion of the patients lost blood, during or right after surgery. Intra-operative blood salvage (ICS) during cancer surgery is considered contraindicated because of the possibility of hematogenous dissemination of tumor cells. Several studies suggest, however, that cancer patients could benefit more from autologous blood during surgery than from allogeneic blood. Unfortunately, this is currently impossible without prior irradiation. Aim of this study is to qualify and quantify tumor cells in ICS-blood and to examine whether these tumor cells can be removed by a leukocyte depletion filter (LDF).

Methods: Blood samples of 5 patients with different types of cancer and 1 patient with a liver adenoma (negative control) were taken at different time intervals during surgery. At the same time, ICS-blood before and after passage through an LDF was sampled. Circulating tumor cells (CTCs) were characterized and quantified by immunocytochemical and immunomagnetic techniques using EPCAM and cytokeratin immunostaining.

Results: Starting surgery, the number of CTCs present in peripheral arterial blood of the patients varied from 0–23/7 ml. During and after surgery, the number of CTCs was 0–9/7 ml and 0–1/7 ml, respectively. In samples drawn from the portal vein during surgery, the number of CTC’s was 0–23/7 ml. The number of CTCs present in ICS-blood was 25–144/7 ml. An LDF reduced the CTCs in ICS-blood to 0–3/7 ml. In the negative control, 9 CTCs/7 ml were found in ICS-blood.

Conclusions: A very low number of EPCAM-and cytokeratin-positive cells are found in ICS-blood. The method lacked specificity insofar as adenoma cells could not be differentiated from tumor cells. An LDF has the ability to capture tumor cells. Further research is warranted to validate the safety of re-transfusing ICS-blood.

Gastrointestinal P091

Vulnerability of Male in Appendicitis

Nakajima Yoshimichi1, Hirayama Katsu2, Saitoh Ken3, Shimada Tomoyuki4, Tsukamoto Shigeki2, Sakai Rika5

1Department of General, Vascular and Transplantation Surgery, Medical University of Warsaw, Poland, 2Department of Pathology, Children’s Memorial Health Institute, Warsaw, Poland, 3Department of General, Vascular and Transplantation Surgery, Medical University of Warsaw, Poland, 4Department of General, Vascular and Transplantation Surgery, Medical University of Warsaw, Poland, 5Second Department of Radiology Medical University of Warsaw, Poland

Purpose: The aim of this study was to safely adapt radiofrequency ablation techniques (RITA) to treat benign thyroid tumors. A dependable method had to be adapted which would be used to differentiate benign and malignant thyroid lesions in fine-needle biopsies prior to RITA.

Materials & Methods: Between 2001 and 2006 radiofrequency ablation was performed on 66 thyroid tissue fragments in 58 patients. Qualified for this procedure were patients in whom fine tissue biopsies revealed struma nodosa or struma coilsides. Immunochemical markers (PCNA, Ki67 and AgNOR) were used to differentiate between carcinoma and benign follicular adenomas. Ablation was performed intraoperatively on thyroid tissue fragments ranging in size from 1-3 to 2-2 cm, mean 1.7 ± 0.5 cm prepared for resection. The first session was performed with heating the device to 70–80°C while exposition time ranged from 5–8 – 10 min at 30 W with two following sessions from 5–8 – 10 min. at 45 W. After RITA the thyroid lobe was resected and pathologically assessed to determine the extent of tissue necrosis.

Results: A necrosis zone, up to 1 cm was shown in tumors with diameters 1–1.2 ± 0.2 cm with nearly the same tissue damage – 0.3–0.5 ± 0.1 cm. A necrosis zone, up to 2 cm was shown in tumors with diameters 2–2.2 ± 0.2 cm with nearly the same tissue damage – 0.3–0.5 ± 0.1 cm. In 4 patients (1.5%) we observed temporary laryngeal nerve paralysis, in 2 (3%) cases minute bleeding after needle arm retraction.

Conclusions: Radiofrequency ablation can be a minimally invasive, alternative to surgical methods in neutral nodular goiter with the necrosis zone of the ablated thyroid lesion closely correlated to the used ablation parameters. Care must be taken in each case to discriminate between follicular carcinoma and adenoma before the procedure is attempted.
Minimally invasive P093
Laparoscopic cholecystectomy in the elderly patients

Nazari Shahram1, Khosroushahi Semira2, Ziaee Seyed Ali3, Amini Afsin4
1 Erfan Hospital, Tehran, Iran, 2 Erfan Hospital, 3 Erfan Hospital, 4 Erfan Hospital, 5 Imam Hosain Hospital (dsnazari@hotmail.com)

Laparoscopic cholecystectomy in the elderly patients

Objectives: Laparoscopic cholecystectomy (LC) is the ‘gold standard’ in surgical management of symptomatic cholelithiasis. Background: The elderly are more prone to complications of surgery because of co-morbidity, and they may benefit most from a minimally invasive approach. This study was intended to evaluate the safety of the use of a laparoscopic cholecystectomy for emergency and elective surgery in elderly patients.

Methods: From November 2003 to December 2006, all patients over 60 years of age who underwent cholecystectomy that began laparoscopically in two non academic hospitals were included.

Results: 155 elderly patients with mean age of 74±1 years were included (range 60–88 years). 110 of the patients were operated with the laparoscopic and 45 with the classical methods. The frequency of postoperative surgical and general complications and the presence of concomitant diseases associated with old age were compared.

Conclusions: A laparoscopic cholecystectomy can be used safely in an elderly population. The method of laparoscopic gallbladder excision proved to be beneficial also in persons of advanced age.

Minimally invasive P094
The role of complete excision of a retroperitoneal cystic lymphangioma: The Case

Nazari Shahram1, Khosroushahi Semira2, Ziaee Seyed Ali3, Sadr Farhad4, Amini Afsin5
1 Erfan Hospital, Tehran, Iran, 2 Erfan Hospital, 3 Erfan Hospital, 4 Erfan Hospital, 5 Imam Hosain Hospital (dsnazari@hotmail.com)

Background: Retroperitoneal cystic lymphangioma is a rare benign tumor of the retroperitoneal lymphatics that usually manifests in infancy. It is worth to Report of unexpected presentation especially in Adult. Case Presentation: A 26-year-old Female patient with a mass in left inguinal fossa and left lower abdominal pain and a 42 Years old man with abdominal pain and lumbago were referred to our hospital. Para clinic failed to determine the accurate diagnosis. Laparoscopy revealed a retroperitoneal cystic lymphangioma confirmed by histopathology. The usual presentation of retroperitoneal tumours as chyliperitoneum or Chyloous ascites is discussed. Although macroscopically, the resection was complete in both cases, lymphangioma recurred during a follow up period in one of the cases with chylous-thorax presentation.

Discussion: Due to its potential to grow, invade vital structures and develop life-threatening complications, complete laparoscopic excision should be considered as a therapeutic option to treat retroperitoneal cystic lymphangioma. If surgical excision is used in treatment, it needs to be as complete as possible to reduce the risk of recurrence.

Oncology P095
An extremely rare case of retroperitoneal metastasis of uveal melanoma: A case

Nazari Shahram1, Khosroushahi Semira2, Ziaee Seyed Ali3, Sadr Farhad4, Amini Afsin5
1 Erfan Hospital, 2 Erfan Hospital, 3 Erfan Hospital, 4 Erfan Hospital, 5 Imam Hosain Hospital (dsnazari@hotmail.com)

Background: Melanoma of the uveal tract (iris, ciliary body, and choroid), though rare, is the most common primary intraocular malignancy in adults. Iris melanomas rarely metastasize. Melanomas of the posterior uveal tract are cytologically more malignant, detected later, and metastasize more frequently than iris melanomas.

Case Presentation: A 30 years old female with history of enucleated left eye due to choroidal melanoma and with abdominal pain referred to our hospital. She was operated and found to have a very vascular, pigmented, retroperitoneal mass measuring 10×12-cm lying under tail of pancreas pushing the left kidney down and stomach towards up with massive peritoneal seeding. It was unable to completely excise. Histopathology showed it to be a malignant melanoma. Unfortunately, a month after operation we missed the patient in a car accident.

Discussion: Iris melanomas rarely metastasize. Melanomas of the posterior uveal tract are cytologically more malignant, detected later, and metastasize more frequently than iris melanomas. This is a case report of an extremely rare secondary malignant melanoma presenting in the retroperitoneum.

Gastrointestinal P096
Morphological and Differential Scanning Calorimetry examination of the small bowel tissue following warm ischemia and reperfusion

Nedvig Klara1, Roth Erzsebet1, Lorincz Denes1, Ferencz Andrea2
1 University of Pecs, Medical School, Department of Surgical Research and Techniques, Pecs, Hungary, 2 University of Pecs, Medical School, Institute of Biophysics, Pecs, Hungary, 3 University of Pecs, Medical School, Department of Surgical Research and Techniques (andreia.ferencz@univ.pte.hu)

Background: The most commonly employed method used for estimating intestinal ischemia/reperfusion (I/R) injury is conventional histology. We aimed to compare the conventional histoology and Differential Scanning Calorimetry (DSC), as a thermoanalytical method to define intestinal structural changes following warm I/R.

Methods: I/R groups were designed with occlusion of superior mesenteric artery in Wistar rats. In Group I (GI, n = 10) 1 hour ischemia followed by 3 hours reperfusion, and in Group II (GII, n = 10) 3 hours ischemia followed by 1 hour reperfusion. Small bowel biopsies were collected after laparotomy, and at the end of the I/R periods. Tissue damage was analyzed by qualitative (Park’s classification) and quantitative (software Scion Image) on hematoxylin/eosin-stained sections. After separation of bowel tissue we detected structural changes of mucosa, muscular layer and total intestinal wall by DSC.

Results: In GI histological findings were corresponding to an injury grade 1, showing minor clefting with the villus epithelium. In GII the injury was grade 3 after ischemia, characterized by severe destruction in mucosal thickness, denudation of villi and lesion in crypts, which was further deteriorated by the end of the reperfusion. These changes were significant by quantitative analysis (p < 0.05). DSC data have supported these observations: after 1 hour ischemia the transition temperature (Tm) was the same as in case of control for mucosa, but the calorimetric enthalpy decreased by about 30%. In case of 3 hours warm ischemia the Tm changed from 55 to 46°C and the calorimetric enthalpy was only half of the control one.

Conclusion: Present work demonstrated complex and exact structural analyses of intestinal injury following I/R. These thermal parameters indicate the thermodynamic consequences of structural destruction, which provides basis for further investigation in different intestinal stress models. (Supported by OTKA P046593, Bolyai Scholarship of the Hungarian Academic of Science).
Transplantation, Organ preservation.2 P097

Effect of endogenous and exogenous PACAP on the oxidative stress and small bowel tissue lesion
Nedvig Klara1, Rozz Boglarka2, Regldi Dori3, Roth Erzssebet4, Weber Gyorgy5, Ferencz Andrea6
1 University of Pecs, Medical School, Department of Surgical Research and Techniques, Pecs, Hungary, 2 University of Pecs, Medical School, Department of Surgical Research and Techniques, 3 University of Pecs, Medical School, Department of Anatomy, 4 University of Pecs, Medical School, Department of Surgical Research and Techniques, 5 University of Pecs, Medical School, Department of Surgical Research and Techniques, 6 University of Pecs, Medical School, Department of Surgical Research and Techniques (andrea.ferencz@auk.ppe.hu)

Background: Tissue injury caused by cold preservation and reperfusion remains a unsolved problem during small bowel transplantation. Pituitary adenylate cyclase-activating polypeptide (PACAP) is present and plays a central role in the intestinal physiology. This study investigated the effect of endogenous and exogenous PACAP-38 on the oxidative stress and intestinal tissue damage in warm ischemia/reperfusion (I/R) and autotransplantation models.

Methods: Intestinal I/R and autotransplanted groups were established in Wistar rats (n = 45). In I/R groups 1 hour (GI), 2 hours (GII), and 3 hours (GIII) ischemia followed by 3 hours of reperfusion was applied. In autotransplanted groups total orthotopic intestinal autotransplantation was performed. Grafts were preserved in cold University of Wisconsin (UW) solution for 1 (GIV), 2 (GV), 3 (GVI) hours and 30 ug PACAP-38-containing UW for 1 (GVII), 2 (GVIII), and 3 (GIX) hours. Reperfusion lasted 3 hours in all groups. Endogenous PACAP-38 concentration was measured by radioimmunoassay. Tissue oxidative stress parameters: malondialdehyde (MDA), reduced glutathione (GSH), and superoxide dismutase (SOD) were measured. Tissue lesion was analyzed by qualitative (Park’s classification) and quantitative (Scion Image software) methods on hematoxylin/eosin-stained sections.

Results: Endogenous tissue PACAP-38 concentration significantly decreased in GI and GII compared to control (p < 0.05). Preservation solution containing PACAP-38 alleviated bowel tissue oxidative injury in GVII-GIX. SOD activity was significantly higher in GIX than in GVI. Qualitative and quantitative histological results showed destruction of the mucous, submucous and muscular layers and crypts in GIII, which was further deteriorated by the end of reperfusion. In contrast, in GIX intestinal structure better preserved following cold storage in PACAP-38-containing UW solution.

Conclusion: I/R decreased the endogenous PACAP-38 concentration in the intestinal tissue. Administration of PACAP-38 to the preservation solution mitigated oxidative injury and histological lesions in intestinal autotransplantation model. (Supported by OTKA F046593, K72592, Bolyai Scholarship of the Hungarian Academic of Science).

Minimally invasive P098

A novel videomicroscopic method for studying ureteral peristalsis in vivo in anesthetized rats
Osman Fares1, Nádasy George2, Monos Emil3, Nyirády Peter4, Romics Imre5
1 Urology Department-Semmelweis University-Budapest-Hungary, 2Clinical Experimental Research Department and Department of Human Physiology-Semmelweis University-Budapest-Hungary, 3Clinical Experimental Research Department and Department of Human Physiology-Semmelweis University-Budapest-Hungary, 4Urology Department-Semmelweis University-Budapest-Hungary, 5Urology Department-Semmelweis University-Budapest-Hungary (osman_fares@yahoo.com)

Introduction: For a better understanding of the mechanisms by which ureteral flow is induced in normal and in pathological states the finer movements of the ureteral wall have to be analyzed. Existing methods, however, do not allow comparisons of movements in different parts of the ureteral wall.

Methods: The middle portion of the ureter was microprepared, encased in a tissue chamber, superfused with Krebs-Ringer solution and covered with a glass top. The orifice of the left ureter was cannulated, and visualization of urine level movements in the cylindrical part of the plastic cannula marks volume flow as a function of time. Analog videotapes were digitized and analyzed off-line frame by frame. A set of cardinal points were identified on the surface of each segment using the pattern of vasa vasorum. The in vivo movements of these were recorded in a coordinate system determined by the tissue chamber.

Results: Individual surface points of the ureteral wall moved along complicated trajectory loops during spontaneous and drug stimulated contraction-relaxation cycles. Changes of the outer diameter due to contractions were accompanied by axial shortening (axial contraction in nearby segment) and axial displacement (axial contraction in farther segments) in a complicated pattern. During the active periods, stable, periodic contraction-relaxation cycles could be identified on the smoothed records.

Conclusions: A finer analysis of ureteral movements is needed to understand the mechanics of urine flow in this organ. In addition to the traveling contraction of the diameter, an axial contraction, shortening the ureter on a long stretch will participate in pushing the urine bolus. Minimally invasive P099

Laparoscopic adrenalectomy in patients with pheochromocytoma – doubts and
Otto Maciej1, Dzwanowski Jacek2, Ciącka Tomasz3, Szmidt Jacek4
1 Department of General, Vascular, and Transplant Surgery, The Medical University of Warsaw. Poland, 2 Department of General, Vascular, and Transplant Surgery, The Medical University of Warsaw. Poland, 3 Department of General, Vascular, and Transplant Surgery, The Medical University of Warsaw. Poland, 4 Department of General, Vascular, and Transplant Surgery, The Medical University of Warsaw. Poland (1otomaczek@wp.pl)

Pheochromocytoma with its specific characteristic causes diagnostic and operative difficulties that’s why became the last active adrenal tumor accepted for videoscopy. Laparoscopic adrenalectomy (LA) raised doubts about effectiveness, safety, benefits and radicality of surgical resection. The aim of the study: Presenting early results of laparoscopic adrenalectomy in patients with pheochromocytoma.

Material and methods: From 29.10.1997 to 31.12.2007 we performed 401 LA in 389 patients. In 76 (19,5%) cases the indication was pheochromocytoma. There were 58 (76%) patients with sporadic pheochromocytomas, 12 (15,8%) patients with MEN II a syndrome (6 bilateral), 5 (6,6%) with neurofibromatosis type 1, 1 (1,3%) with VHL syndrome and 1 (1,3%) had the extra-adrenal tumor. There were 41 (54%) women and 33 (46%) men, with the mean age 47,5 years (from 21 to 74 years). The mean size of tumor was 42,5 mm (from 12 to 85 mm). All patients were prepared with alpha and beta blockers and were operated through lateral transperitoneal approach. In 2 patients sparing adrenalectomy was performed.

Results: In the pheochromocytoma group the mean time of the unilateral LA was 144,1 minutes, simultaneous bilateral LA 246, comparing with patients with other adrenal pathologies: 139,6 and 280 respectively. The elevated blood pressure (BP) was noted during: intubation in 27 (36%) cases and tumor preparation in 51 (67%). The infusion of nitroglyceryne was used in 12 (16%) cases and sodium nitroprusside in 9 (12%). There were no pressure reaction during insulation. Drop of BP after clipping the adrenal vein occurred in 52 (68%) cases. Postoperative BP normalization was in 65 (86%) cases. 11 (14%) patients after LA required antihypertensive treatment.

Conclusion: 1. In case of pheochromocytoma LA is technically more demanding and the proper preoperative preparation is necessary. 2. LA via lateral transperitoneal approach can be accepted as a recommended treatment for pheochromocytoma.
Sepsis, Infection, Immunity P100

Intrapleural infusion of Dimexid® with antibiotic for treatment of pleural empyema

Panko Siarhei1, Karptysk Aleksand2, Ryzhko Andrej3, Boufalik Rostiskav4, Shestjuk Andrej5, Nikitjuk Leonid6
1 Department of Medicine, Brest State University; Brest, Republic of Belarus, 2Department of Thoracic Surgery, Brest Regional Hospital; Brest, Republic of Belarus, 3Department of Thoracic Surgery, Brest Regional Hospital; Brest, Republic of Belarus, 4 Department of Thoracic Surgery, Brest Regional Hospital; Brest, Republic of Belarus, 5 Department of Thoracic Surgery, Brest Regional Hospital; Brest, Republic of Belarus, 6 Department of Thoracic Surgery, Brest Regional Hospital; Brest, Republic of Belarus

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Background: The aim of the study was to analyze the efficiency of local conservative treatment of pleural empyema with the help of dimethylsulphoxide combined with antibiotic.

Methods: 58 patients with pleural empyema have been divided into three groups: group 1 with complications after heavy lung inflammations (n = 17); group 2 with purulent destruction of the lung (n = 18); group 3 with postoperative complications after thoracic surgery (n = 11), including 7 cases with bronchial fistulas after surgery for malignant disease; group 4 with purulent destruction of the lung (n = 4), that demanded emergency operative intervention; group 5 (n = 5) with posttraumatic empyema (n = 5). All patients received a combination of antibiotics intravenously and treatment by antibiotics was changed according to sensitivity testing of microorganisms. In addition, antibiotics were also administered by infusion into the pleural cavity after dissolution in Dimexid, so as it is a universal solvent and helps to penetrate inflammatory tissues for antibiotics. In groups 1, 2 and 5 a thoraco-centesis and pleural drainage was carried out on the first day of their stay in hospital. When purulent excretion stopped and full expansion of the lung was achieved (as controlled by chest X-ray), the drain stayed in pleural cavity for another three days, and then was removed.

Results: This treatment increased postoperative survival in patients with pleural empyema. Moreover, sufficient results was achieved in 95% of the cases.

Conclusions: Intrapleural infusion of Dimexid with antibiotics increases the efficiency of local treatment and can be a method of a choice for management of advanced pleural empyema.

Gastrointestinal_3 P101

Delay in diagnosis of appendicitis-trends in litigation in the U.K

Pawa Nikhil1, Nouri Reem2, Tutton Matthew G3
1 Colchester General Hospital, UK, 2 Colchester General Hospital, UK, 3 Colchester General Hospital, U.K. (nikhil@pawa.me.uk)

Introduction: Appendicitis is one of the commonest surgical emergencies. Prompt appendicectomy has long been the standard of care for acute appendicitis due to the risk of progression to advanced pathology. It has been asserted that the failure to diagnose appendicitis (and delay in appendicectomy) is one of the leading sources of malpractice claims in the U.S.A. The aim of this study was to assess the trends in litigation in the U.K. since the uptake of laparoscopic surgery.

Methods: A retrospective analysis was performed of a prospectively collected pathology database at a district general hospital over a period of seven years (September 2001 to present day). All the case notes of gall bladder malignancies were retrieved with pre-operative radiological investigations and details of intra-operative findings reviewed.

Results: Altogether there were 2703 individual specimens. There were four (1.5%) cases of primary gall bladder carcinoma, one case of B-cell lymphoma and one case of metastatic cancer from an adenocarcinoma in the stomach. The affected patients’ age ranged from 67 to 83 years. Of the four primary gall bladder carcinomas, one presented with empyematous perforation and the other three were identified intra-operatively. Pre-operative radiological findings were confirming in three cases.

Conclusion: The incidence of gall bladder carcinoma in our series was less than 0.2%. All of them were suspected pre-operatively and intra-operatively. There was no unsuspecting diagnosis of gall bladder carcinoma on routine histology without prior suspicion. Therefore we conclude that it is probably safe to abandon routine histological examination of unsuspecting gall bladder specimens in patients below a certain age group of 50 years without compromising effective patient management.

Hepatobiliary_1 P102

Selective approach to routine histological examination of gall bladder is justifiable

Pawa Nikhil1, Liao Christopher C L2, Colcough Angela3, Menzies Donald M4
1 Colchester General Hospital, UK, 2 Colchester General Hospital, UK, 3 Colchester General Hospital, UK, 4 Colchester General Hospital, UK (bjb@bjet.nhs.uk)

Introduction: Carcinoma of the gall bladder is a rare malignancy which affects women two to three times more commonly than men, mostly in their 7th and 8th decade of life. It carries a poor prognosis with an age-corrected over-all 5 years survival rate not exceeding 5%. As with all cancers early diagnosis of localised disease is effective in improving survival, unfortunately only 10 to 20% of all cancer is confined solely to the gall bladder. The aim of this study was to assess the incidence of unsuspected localised gall bladder cancer diagnosed only at histological examination with the possibility of reducing routine histological examination below the age of 50.

Methods: A retrospective analysis was performed of a prospectively collected pathology database at a district general hospital over a period of seven years (September 2001 to present day). All the case notes of gall bladder malignancies were retrieved with pre-operative radiological investigations and details of intra-operative findings reviewed.

Results: Altogether there were 2703 individual specimens. There were four (1.5%) cases of primary gall bladder carcinoma, one case of B-cell lymphoma and one case of metastatic cancer from an adjacent primary in the stomach. The affected patients’ age ranged from 67 to 83 years. Of the four primary gall bladder carcinomas, one presented with empyematous perforation and the other three were identified intra-operatively. Pre-operative radiological findings were confirming in three cases.

Conclusion: The incidence of gall bladder carcinoma in our series was less than 0.2%. All of them were suspected pre-operatively and intra-operatively. There was no unsuspecting diagnosis of gall bladder carcinoma on routine histology without prior suspicion. Therefore we conclude that it is probably safe to abandon routine histological examination of unsuspecting gall bladder specimens in patients below a certain age group of 50 years without compromising effective patient management.

Transplantation, Organ preservation_2 P103

How to establish a microsurgical experimental transplantation lab in Poland – own experience

Pieróg Jarosław1, Kubisa Bartosz2, Grodzki Tomasz3, Drozdzik Marek4
1 General Thoracic Surgery Unit Regional Hospital For Lung Diseases Szczecin, Poland, 2 General Thoracic Surgery Unit Regional Hospital For Lung Diseases Szczecin, Poland, 3 General Thoracic Surgery Unit Regional Hospital For Lung Diseases Szczecin, Poland, 4 Department of Experimental and Clinical Pharmacology Pomeranian Medical University Szczecin, Poland (pierog@pfp.pl)

Microsurgical experimental transplantation rat lung model lab is a sophisticated way to perform research. It is well known that the lab needs a lot of experience and funds, therefore, setting up this kind of the lab seems to be difficult in Poland.

The team experience regarding microsurgical technique and good organization
is essential to make first step. The lab equipment is equally important. Our
team gained the experience performing allogenic rat lung transplantation for a
large research team in Berne, Switzerland between 2000 and 2004. The Swiss
support was satisfied with our team towards lab work and good results as well. Consequently the equipment was lent by the Swiss Research
Center in order to set up further cooperation between our centers. Local funds
were used for some adjustment works only. Good relationship and fruitful
cooperation were necessary to establish a high sophisticated experimental lab
in Poland. Estimated costs to prepare fully operational lab did not exceed $5000; however, we had to apply for The Polish State Committee For Scientific
Research grant to start our first experimental transplantation research. Our
experience shows it is possible to establish a high sophisticated lab in Poland
without engagement of large amount of money. Needless to say devotion and
large enthusiasm of the team as well as support of foreign experienced lab are
esential to perform research work successfully.

Transplantation, Organ preservation 2 P104
Viability of spleen autotransplants in beagle dogs—a complex
long-term investigation
Sajtos Erika1, Furka Istvan2, Laszlo Galuska Sandor3, Sipka4, Judit Kovacs Endre Brath5, Norbert Nemeth Katalin Peto6, Mikó Iren7
1 Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary,
2 Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary,
3 Department of Nuclear Medicine, 3rd Department of Internal Medicine, Regional Immunological Laboratory, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 
4 Laboratory, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 
5 Department of Pathology, Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 
6 Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 
7 Department of Operative Techniques and Surgical Research, Department of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, (sajtos.erika@gmail.com)

Introduction: Despite the modern chemo-, and immune-prophylaxis the risk for complications following splenectomy still means great problems. Thus, spleen saving methods play important role preventing complications. In one-year follow-up, using morphological and functional methods, we examined the viability of implanted spleen-chips in beagle dogs.

Materials and Methods: Experimental groups (n = 3-3): “C”-non-operated control, “SH”-sham-operated control, “SE”-splenectomy, “AU5” or “AU10”-autotransplantation with 5 or 10 spleen-chips using “Furka’s spleen-chip” technique following splenectomy. Prior to operations, in postoperative 1st week, monthly till the 6th and in the 9th, 12th months hematological, hernostaseological, hemorheological examinations were performed. In the 12th month phagocyte chemiluminescence tests, colloid scintigraphy and diagnostic laparoscopy were carried out.

Results: “AU5”/+“AU10”-group’s scintigraphy showed activity in spleen-pieces. During the diagnostic laparoscopy almost all the spleen-chips with blood supply were found. Although, functional results did not reach the values of “SH”/+“C”-groups, from the 4th-5th postoperative months they showed particular restoration in filtration and immunological function of spleen-chips versus “SE”-group. In the 12th month relative cell transit time (RCTT) was 4.35 ± 0.82 in “SH”-group, 3.65 ± 0.26 in “C”-group, 4.45 ± 0.52 in “SE”-group, 5.2 ± 0.22 in “AU5”-group and 4.14 ± 0.38 in “AU10”-group. Stimulation index was 0.95 ± 0.04 in “SH”-group, 0.89 ± 0.11 in “C”-group, 0.71 ± 0.12 in “SE”-group, 1.84 ± 0.12 in “AU5”-group (p < 0.05 “AU5” versus “C”) and 1.04 ± 0.09 in “AU10”-group in the 12th month. Histologically, the structure of spleen-chips was similar to normal spleenic tissue. SUMMARY: Our results suggest that spleen-pieces are viable, their functions have been partly restored, and thus spleen autotransplantation may avoid the complications of splenectomy. However, regeneration of spleen-chips is expected only from the postoperative 4th-6th months. Besides functional scintigraphy, erythrocyte deformability and peripheral phagocyte activity can be indicative for decrease (functional hyposplenism) or lost (asplenia) of splenic functions. Grants: OTKA T049311, and ETT 387/2006.

Gastrointestinal 1 P105
Prevention and Detection of SSI after Total Gastrectomy
Sakai Rika1, Hirayama Katsu2, Nakajima Yoshimichi3, Saitoh Ken4, Tsukamoto Shigeki5, Enomoto Yoshitaka6
1 Department of Surgery, Hiraka General Hospital, 2 Department of Surgery, Hiraka General Hospital, 3 Department of Surgery, Hiraka General Hospital, 4 Department of Surgery, Hiraka General Hospital, 5 Department of Surgery, Hiraka General Hospital (rika-@altu.ocn.ne.jp)

Introduction: It is clear that SSI is the situation to be prevented. SSI must be
different between operation procedures. The purposes are to clarify the characteristics of SSI after total gastrectomy and to reveal how to prevent and determine SSI.

Patients and methods: 101 patients had total gastrectomy in our hospital last 4 years (Jan 2003 – Dec 2006). Patients with SSI (+SSI) were investigated compared with patients without SSI (−SSI).

Results: Almost all patients had laparotomy gastrectomy followed by Roux-Y reconstruction. 17 patients were suffered from SSI and 84 patients were no SSI. SSI was diagnosed in 16.8% patients. Age, gender, BMI, serum protein, the serum sugar and cancer stage were statistically the same. 2 patients (11.8%) had primary chemotherapy in + SSI and 2 patients (8.13%) in −SSI (NS). One third patient had D2 dissection in both group. Number of dissected lymph nodes and number of positive lymph nodes were the same. 11 (64.7%) patients needed resection of surrounding organs in + SSI compared to 28 (33.3%) in −SSI (p=0.0154). Operation duration and blood transfusion were statistically the same. Blood loss in + SSI was 564ml compared to 408ml in −SSI (p=0.0252). Postoperative hospital stay was longer in + SSI, 42.5 days in + SSI and 34.2 days in −SSI (p=0.00494). Body temperature was statistically higher (p<0.01) in + SSI on 4, 5, 6 and 7 postoperative days. On these days, body temperatures were above 37.5 Celsius in + SSI.

Conclusion: Risk factors to the SSI were blood loss and resection of surrounding organs. Precise operation will be needed. Another important issue is how to prevent surrounding organ resection. Primary chemotherapy can be effective for locally advanced gastric cancer to prevent surrounding organ resection. In the point of early detection of the SSI, body temperature could be a useful predictive factor. Especially, body temperature more than 37.5 Celsius 4 day after surgery, can be indicative for the SSI.

Oncology P106
Management of post-operative Mondor’s disease: a novel non-invasive manoeuvre
Salmon Remy1, Berry MG2, Hamelin JP3
1 Institut Curie, Paris, France, 2 Institut Curie, 3 Institut Curie (miles.berry@curie.net)

Background: Mondor’s disease is an uncommon complication of breast and
axillary surgery. Although self-limiting, the subcutaneous cords may be both
painful and functionally limiting for the patient for several months. Numerous
pharmacologic approaches have been tried, but without widespread success, and
we wished to evaluate the non-invasive technique of manual axial distraction in such patients.

Methods: 30 consecutive patients with axillary Mondor’s disease following
surgery were treated solely with this technique by the senior author (RJS) over a 24 month period. Mean age was 45 years (range 32–72) with 27 having undergone formal axillary dissection and 3 sentinel node biopsy.

Results: 25 (83.3%) were successfully treated with a single procedure, 3 (10%) two and 2 (6.7%) three procedures.

Conclusion: We present the initial results of the novel technique of manual axial distraction that has been found to be both efficacious and without adverse effect. It provides a rapid and definitive treatment of post-operative Mondor’s disease.

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Oncology P107
Renal Cell Carcinoma presenting with a mass in the trapezius muscle
Saryo Neelam1, Condon Luke2, Loney Elizabeth3, Moore Jim4, Bem chris5
1 Bradford Royal Infirmary, Bradford, UK, 2 Bradford Royal Infirmary, 3 Bradford Royal Infirmary, 4 Bradford Royal Infirmary
Introduction: Renal cell carcinoma (RCC) is notorious for metastasising to almost anywhere in the body. This is the first reported case of RCC initially presenting as a mass in the trapezius muscle.
Case Report: A 72 year old male presented with a right posterior neck lump. Examination was normal apart from the presence of a 2 cm, mobile lump deep to the occipital insertion of the right trapezius muscle. Ultrasound scanning revealed a well defined ‘vascular nodule’ within the muscle itself. Fine needle aspiration cytology suggested metastatic carcinoma. Surgical biopsy revealed a non-encapsulated, necrotic mass within the substance of the right trapezius muscle. CT scanning showed a large mass replacing the left kidney associated with thrombosis of the renal vein and several enlarged para-aortic lymph nodes (see Figures) with no abnormality in the chest and no other metastases. Histology confirmed metastatic renal cell carcinoma. The patient was referred to the Renal Cancer MDT and underwent a radical left nephrectomy followed by immunotherapy with Interferon. He remains well 6 months post presentation.
Discussion: Metases to skeletal muscle are rare, regardless of the primary site. Renal cell carcinoma is the third most common infraclavicular neoplasm to metastasise to the head and neck (after breast and lung). Batson’s venous plexus has been postulated as the route by which renal metastases may reach the site. Renal cell carcinoma is the third most common infraclavicular neoplasm to metastasise to the head and neck (after breast and lung). Ultrasound scanning revealed a well defined ‘vascular nodule’ within the muscle itself. Fine needle aspiration cytology suggested metastatic carcinoma. Surgical biopsy revealed a non-encapsulated, necrotic mass within the substance of the right trapezius muscle. CT scanning showed a large mass replacing the left kidney associated with thrombosis of the renal vein and several enlarged para-aortic lymph nodes (see Figures) with no abnormality in the chest and no other metastases. Histology confirmed metastatic renal cell carcinoma. The patient was referred to the Renal Cancer MDT and underwent a radical left nephrectomy followed by immunotherapy with Interferon. He remains well 6 months post presentation.

Minimally invasive P109
Influence of preemptive analgesia on pulmonary functions and complications for laparoscopic cholecystectomy
Sen Meral1, Ozol Duygu2, Bozer Mikdat3, Gokmen Derya4
1 Fatih University School of Medicine, Department of General Surgery Ankara, Turkey, 2 Associated Prof. Dr., Fatih University School of Medicine, Department of Pulmonology, Ankara, Turkey, 3 Associated Prof. Dr., Fatih University School of Medicine, Department of General Surgery Ankara, Turkey, 4 Ankara University Faculty of Medicine, Department of Biostatistics Ankara, Turkey

Hepatobilary P108
Preemptive use of etofenamate in laparoscopic cholecystectomy
Sen Meral1, Inan Aydin2, Sert Huseyin3, Akipnar Ayhan4, Dener Cenap5, Bozer Mikdat6
1 Fatih University School of Medicine, Ankara, Turkey, 2 Assistant Professor of General Surgery, Fatih University School of Medicine, Ankara, Turkey, 3 Assistant Professor in Anesthesiology, Fatih University School of Medicine, Ankara, Turkey, 4 Resident in General Surgery, Fatih University School of Medicine, Ankara, Turkey, 5 Associate Professor of General Surgery, Fatih University School of Medicine, Ankara, Turkey, 6 Associate Professor of General Surgery, Fatih University School of Medicine, Ankara, Turkey

Plastic P110
An Alternative and Safer Technique of Medical Tattooing
Shah Amit1, Azazwi Khayam2, Humzah MD3
1 University of Cambridge, UK, 2 University of Cambridge, 3 Plastic surgery unit, W’sdale Hospital (ar129@hotmail.com)

Discussion: preoperative analgesia on pulmonary functions and complications for laparoscopic cholecystectomy (LC). Fifty-five patients, scheduled for elective LC were included in our double-blind, randomized, placebo-controlled, prospective study. Randomly 28 patients were received 1g etofenamate (Group 1) and 27 patients were received 0.9% saline (Group-2) intramuscularly one hour before surgery. All patients underwent physical examination, chest radiography, lung function tests and pulse oxygen saturation measurements two hours before surgery and postoperatively on day two. Atelectasis was graded as micro, focal, segmental or lobar. In both groups mean spirometric values were reduced significantly after operation. The difference and proportional change according to preoperative recordings were decreased less in preemptive group (31.4% versus 32.4% reduction in forced vital capacity (FVC) and 33.1% versus 35.2% reduction in forced expiratory volume in one second (FEV1) for group 1 and 2, respectively, p>0.05). There was a slight but insignificant drop in oxygen saturations for both groups. Although degree of atelectasis was less severe in preemptive group, this was not significant and the overall incidence of atelectasis was similar (32.1% versus 29.1%). We concluded that preemptive analgesia, reduces the severity of atelectasis and drop ratios in lung functions postoperatively, but further studies with more patients are needed to establish the clinical importance of these findings.

Aim: In this study, we evaluated the preemptive effect of etofenamate on postoperative pain and emesis in the first 24 hours after elective laparoscopic cholecystectomy.

Materials and Methods: This prospective, randomized, placebo-controlled, double-blind study was carried out on 120 ASA I and II patients who underwent elective laparoscopic cholecystectomy. Patients were randomly assigned to two groups each consisting of 60 patients. Group A (the etofenamate group) was received 1g (2 ml) etofenamate intramuscularly, group B (the placebo group) was received same dose (2 ml) 0.9% saline intramuscularly one hour before surgery. All patients were operated by same technic. Following the end of the skin closure, all patients were administered meperidine HCI in the patient-controlled analgesia (PCA) IV mode in order to treat postoperative pain. After an IV loading dose of 0.5 mg/kg, the demand bolus injection was set at 10 mg, with a lockout time of 30 min. Pain intensity was assessed on a visual analog scale (VAS) at four times; 1 hour, 6 hours, 12 hours and 24 hours after extubation of all patients. First dose of ondansetron was given IV 4 mg and every six hour repeated on demand of patients. The total meperidine HCI consumptions, VAS scores and antiemetic requirements were recorded and comparisons among the two groups were evaluated.

Results: The mean total meperidine HCl consumption of the group A (the etofenamate group) was significantly less than the group B (placebo group). The VAS scores at 1 and 6 hours in the group A were significantly lower than the group B, also the VAS scores at 12 and 24 hours were lower in group A but this was not found significantly. There was no significant difference in the postoperative antiemetic (ondansetron) requirement among two groups.

Conclusion: Preemptive use of etofenamate reduces pain intensity and meperidine HCl requirement, but it doesn’t affect the antiemetic requirement in elective laparoscopic cholecystectomy.
Plastic P111

A case report of Non-surgical treatment of Pectus Excavatum using a new endoprosthesis (Bio-Alcamid®)

Shah Amit¹, Azzawi Khayam², Humzah M.D³
¹University of Cambridge, UK, ²University of Cambridge, ³Plastic Surgery Unit, Worsley Hospital (ash298@hotmail.com)

Pectus excavatum is a common congenital chest wall deformity. Several techniques have been used to treat pectus excavatum. However, the treatment of this deformity is a real challenge. The most common indication for treatment of pectus excavatum is the aesthetic disfigurement produced by this congenital abnormality. This is particularly important in young patients where the appearance of the chest can result in significant problems related to body image and self-esteem. Thus, achieving an ideal cosmetic result of the chest appearance is considered an appropriate medical indication. The patient’s expectations are continuously growing, which require a critical analysis of the possible management options. Plastic surgeons are involved, as the deformity is a morphologic one in most cases. These facts justify the choice of using the simplest non-surgical therapy, whenever possible. The authors present a case report of pectus excavatum, treated successfully without surgery by using a new injectable biocompatible endoprosthesis filler (Bio-Alcamid®). Bio-Alcamid® is a new safe material, which can be used as soft tissue filler. It provides a better option for treating difficult cases like pectus excavatum without surgery.

Plastic P112

A Clinical Study of The new “Alphabetical Nine Points System” for the Clinical Diagnosis of Malignant Melanoma

Shah Amit¹, Azzawi Khayam², Humzah M.D³
¹University of Cambridge, UK, ²University of Cambridge, ³Plastic Surgery Unit, Worsley Hospital (ash298@hotmail.com)

Introduction: The incidence of malignant melanoma is increasing and early detection has become a public issue. The effective treatment remains surgical excision. Therefore, early detection is extremely essential. Several systems have been developed to achieve the most accurate clinical diagnosis. The authors devised a new simple Alphabetical Nine Points System for the clinical diagnosis of malignant melanoma. It is an expansion of the ABCD criterion to “A to I”. This additional elements include: Elevation, Fungation or Failure to heal, Growing lesion, History of High risk, and Indefinite diagnosis.

Aims: The aim of the study was to achieve a clinical tool combining the beneficial concepts of existing systems in order to yield greater accuracy with diagnosis of malignant melanoma.

Methods: The system was applied in 40 cases. There were 20 cases of malignant melanoma, 10 cases of other skin cancers (SCC and BCC), and 10 cases of benign lesions. The Alphabetical Nine Points system was compared with the ABCD rule, and the dermatoscopic ABCD system.

Results: The devised system showed to be a reliable tool for clinical diagnosis of malignant melanoma. The initial results showed that 4 “positives” out of 9 could be used as a threshold for further investigation by way of biopsy

Conclusion: The Alphabetical Nine Points system could be a superior clinical diagnostic tool when compared to existing systems. It has a number of advantages including achieving a good level of accuracy, being easy to apply, cheap, and being suitable for the lay public as well as different health professionals.

Transplantation, Organ preservation,1 P113

Novel approach for identification of keratinocyte stem cells

Sinkiewicz-Darł Elena¹, Domaszewska Anna², Zaleska Marzanna², Oszkowski Waldemar L²
¹Department of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, ²Department of Surgical Research & Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, ³Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, ⁴Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, Norwergian Radium Hospital, Ols, Norwazy (wol8@mdik.pan.p.pl)

RATIONALE: We documented that human skin preserved in anhydrous pulverized sodium chloride for months and transplanted to skin mice and humans is taken by the recipient (Transplantation 2006; 81: 1583–1588). The grafts were characterized by aggressive proliferation of keratinocytes (KC) seen on immunohistochemical section stained for BrdU. Clinically there was evident hyperkeratosis. We also noticed that dehydration in sodium chloride stopped proliferation of keratinocytes, and subsequent rehydration and transplantation brought about restarting of mitoses. This model allowed to identify cells that first undergo mitosis after contact with the recipient. The question arose whether these cells might be the spore-like stem cells?

MATERIALS & METHODS: Fragments of normal human leg skin harvested during elective vascular surgery were preserved in anhydrous pulverized sodium chloride. After 7 to 30 days they were rehydrated, the epidermis was separated and KC were isolated. They were cultured for 7 and 21 days. Viability of cultured KC was tested in Live/Dead Viability/Cytotoxicity test. BrdU was added to culture medium. Flow cytometry was used for characterization of mitotic cells.

RESULTS: The morphological shape of KC was totally preserved. Cells from all 5 epidermal layers could be identified. Among the whole population single large cells resembling by shape those from stratum spinosum and granulosum revealed full enzymatic activity. No cells with other shape revealed this property. Since in culture KC change their shape it was not possible to objectively identify their site of origin. These cells slightly incorporated BrdU whereas other KCs did not. Further identification of this population is needed.

CONCLUSIONS: Preservation of KC in anhydrous pulverized sodium chloride doesn’t stop some single cells’ to display enzymatic activity upon setting in culture. The described method may help to identify KC of highest capacity providing progenies probably belonging to the so called spore-like stem cells.

Wound healing,1 P114

The Effects of Thioredoxin-1 on The Experimental Colitis Model on Rats

Sozuer Erdogan¹, Akcan Alper², Yazar Fathi³, Akyildiz Hizar⁴, Saraymen Recep⁵, Deniz Kemah⁶
¹Erciyes University School of Medicine, Department of General Surgery, Erciyes, Turkey, ²Erciyes University School of Medicine, Department of General Surgery, Kayseri, Turkey, ³Erciyes University School of Medicine, Department of General Surgery, Kayseri, Turkey, ⁴Erciyes University School of Medicine, Department of General Surgery, Kayseri, Turkey, ⁵Erciyes University School of Medicine, Department of Biochemistry, ⁶Erciyes University School of Medicine, Department of Pathology (aakcan2002@yahoo.com)

AIM: In this study, the effects of thioredoxin-1, an antiinflammatory and an antioxidant agent, have been investigated on the inflammatory process of the experimental colitis model.

MATERIALS AND METHODS: In this study, 24 Spraque–Dawley male rats weighing 225–275 g were used. Rats were divided into 3 groups randomly, each including 8 (control, colitis and treatment groups). Normal saline (SF) were given to control group rectally. To the colitis group, trinitrobenzene sulfonic acid and ethanol mixture (TNBS–E) instilled rectally for colitis formation. Finally, to the treatment group, after instillation of TNBS–E, 40 µg/kg of thioredoxin-1 administered intraperitoneally every other day during 20 days. Blood samples were taken on the days 1st and 10th. On the 21st day, a midline
laparotomy was performed. Blood samples were taken from vena cava inferior and santrifugated, and the left colon was resected. Microscopic and macroscopic findings of specimens evaluated and graded. Myeloperoxidase (MPO) and MDA activity of the colonic tissues, and tumor necrosis factor-α (TNF-α), interleukin-1 (IL-1), interleukin-6 (IL-6) and interleukin-10 (IL-10) levels of blood samples measured.

Results: In terms of macroscopic and microscopic grades, colitis and treatment groups’ grades were statistically different (p < 0.05). In the treatment group, tissue myeloperoxidase and MDA levels were significantly lower than study group (p < 0.001). IL-1 and IL-6 levels were decreased significantly in treatment group when compared to colitis group (p < 0.05). Treatment group’s IL-10 levels were significantly higher than the colitis group (p < 0.01).

Conclusion: According to histopathological and biochemical findings, administration of thioredoxin-1 reduced the inflammation on TNBS–E colitis formed rats. Results suggest that the inflammation formation in colitis group, decreased significantly in treatment group by the effects of thioredoxin-1.

Oncology P115

A focus group discussion on patient decision making in cancer care: A qualitative analysis

Srinivasaiah Narasimhaiah1, Joseph Biju2, Gunn James3, Hartley John4, Monson John5

1 Academic Surgical Unit, Castle Hill Hospital Cottingham, East Yorkshire, UK, 2Academic Surgical Unit, Castle Hill Hospital Cottingham, East Yorkshire HU16 5JQ, 3Academic Surgical Unit, Castle Hill Hospital Cottingham, East Yorkshire HU16 5JQ, 4Academic Surgical Unit, Castle Hill Hospital Cottingham, East Yorkshire HU16 5JQ, 5Academic Surgical Unit, Castle Hill Hospital Cottingham, East Yorkshire HU16 5JQ (simba_anu@yahoo.com)

Background: Patient preferences should play an important role when decision-making in cancer-care. Literature is increasingly demonstrating that surgeons and physicians have divergent preferences for treatment options compared with their patients and with each other.

Aim: To explore opinions and thoughts among surgical colleagues about “patient decision making in cancer care”.

Methods: A pilot focus group discussion involving academic-surgical-unit members constituting 4 consultants, 3 registrars and 3 research fellows. Qualitative methodology was adopted for analysis thereby identifying Themes & Outcomes.

Results: Themes that emerged are Evidence-based-clinical-practice, Knowledge, Decision-making, Patient-Information, Risk, Communication, Consent, Socio-economic factors and Patient-empowerment. Outcomes derived are to increase the evidence base. Increased the clinician and patient knowledge, provide adequate information, Decisions to be based on patients best interest, communicated risk in an understandable manner, Take patients views, knowledge and demand into consideration.

Conclusion: Patient decision making in cancer care is slowly evolving, where decisions are not only made taking into account patients views, knowledge and demand but are also driven by them in a minority. Time is a factor and in years to come the patients will play an increased role in their treatments taking into account tradeoffs and risks between survival and quality of life.

Gastrointestinal P116

Role of Sacral Nerve Stimulation (SNS) in ileo-anal Pouch incontinence

Srinivasaiah Narasimhaiah1, Waudby Phillip2, Dutchie Graham3

1 Academic Surgical Unit, University of Hull, Cottingham, UK. HU16 5JQ, 2Academic Surgical Unit, University of Hull, Cottingham, UK. HU16 5JQ, 3Academic Surgical Unit, University of Hull, Cottingham, UK. HU16 5JQ (simba_anu@yahoo.com)

Introduction: An ileo-pouch anal anastomosis (IPAA) has become the gold standard procedure for ulcerative colitis and familial adenomatous polyposis. However, the operation may adversely impact the patient’s continence and quality of life. Treatment of Ileo-anal Pouch incontinence can be difficult. We reviewed our experience in an isolated individual case where SNS was used to treat Ileo-anal pouch incontinence with a successful outcome.

Methods: A prospectively maintained SNS database, was used for gathering data. Clinical notes were reviewed for details.

Results: A 53-year old male, was referred to consider SNS for pouch-incontinence, having failed conservative treatments and collagen Injections. He had undergone Subtotal-Colectomy in 2001 and Ileo-anal pouch reconstruction in 2002. He was troubled with increased frequency of bowel movements from his Ileo-Anal Pouch and also Fecal Incontinence associated with Urgency, Frequency and Leakage. These affected his quality of life significantly. Having undergone assessment for SNS, he had a temporary SNS on the left S2 nerve root. Bowel diaries showed good response with reduction in frequency of bowel movements from 9–10 times/day to 2–3 times/day and on 3 days no leakage of stool. Patient described improved quality of life. Patient is awaiting a permanent SNS

Conclusion: Although results might be far less predictable since there is no benefit from parasympathetic neuromodulation (subtotal Colectomy), there may be a direct contact effect on the pouch. We conclude that SNS for pouch-incontinence offers a satisfactory outcome, when other treatments have failed.

Gastrointestinal_1 P117

Rectal Irrigation (RI) is beneficial for chronic constipation – A prospective review

Srinivasaiah Narasimhaiah1, Marshall Jill2, Gardiner Angie3, Dutchie Graham4

1 Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham, UK, 2Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham, UK, 3Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham, UK, 4Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham, UK (simba_anu@yahoo.com)

Introduction: RI is used in fecal incontinence to relieve symptoms & improve quality of life. Literature on its role in constipation is limited. We aim to evaluate the causes for referral, efficacy & acceptability of RI using health outcome measures and assess effect on constipation.


Results: 175 patients’ data is used. 111(63%) patients found RI useful & 64(37%) unhelpful. The median follow up is 20 months. 79 of 175 patients were referred for constipation. 39 (49%) had success with RI. The success/failure rate is significantly different for patients with constipation versus other diagnosis (Chi Squ=12 28, p=0 000). For the patients presenting with constipation who had successful RI, 56% said that they were ‘doing well’ or ‘good improvement’ using RI, 26% said there had been a ‘dramatic improvement’ whilst 17% said there had been ‘limited’ improvement using RI. Up to one third of the patients had RI once a day. GSQ, SF 36 and FIQL were analysed pre & post RI for the whole group. Analysis is done only on successful cases. GSQ: Showed significant improvement in symptoms of straining, incomplete emptying, wind & urinary leak on stress post RI (95% CI). Visual Analog Scales show reduction in the severity of the problem. SF36: 71 of 111 patients completed SF36 pre RI & 43 of these also completed it post RI. In the whole group the median value for MCS increased from 43 to 51 and PCS increased from 47 to 66. PCS is significant (p value of 0.03). In the group of patients with constipation the percentage increase in MCS & PCS is 20% and 33% respectively post RI. FIQL: Slight improvement in QOL is measured post RI but statistically insignificant.

Conclusions: Constipation accounted for nearly half of referrals. RI was successful in nearly half of the referred population. SF-36 demonstrates a significant improvement in the PCS. Generally speaking, RI offers symptomatic improvement & most patients find it acceptable.

Abbreviations: MCS – Mental Component Score, PCS: Physical Component Score
Oncology P118

Thromboprophylaxis (TP) in Colo-Rectal Surgery: A National Questionnaire Survey of the members of the ACPGBI

Srinivasah Narasimhaiah1, Arsali-Sadeh Reza2, Monson John3
1 Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham, UK, 2 Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham, UK, 3 Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham, UK. £H16 4AY, 4 Academic Surgical Unit, Castle Hill Hospital, University of Hull, Cottingham. UK HU16 4AY (simba_anu@yahoo.com)

Introduction: Venous thromboembolism associated with malignancy reduces survival. Anecdotal evidence suggests that there is lack of uniformity in the thrombo-prophylaxis practice among surgeons in the UK. Available guidelines from NICE & ACPGBI recommend combined (Chemo + Mechanical) thrombo-prophylaxis. Cochrane library recommends self administered low molecular weight heparin (LMWH) for 2–3 weeks following surgery. Our aim was to assess current pattern of TP practice among colo-rectal surgeons in the UK & compare the current practice with available guidelines.

Methods: A postal questionnaire survey containing 10 items was sent to all the 490 active consultant surgical members of the ACPGBI.

Results: Of 490 questionnaires, 259 (52.8%) were returned fully completed. In our national questionnaire survey 259 (100%) routinely use TP, with 241(97.8%) using departmental guidelines. Majority of them used combined heparin and mechanical prophylaxis at 247 (95.4%), while 12 (4.6%) used chemo-prophylaxis only. LMWH was the preferred chemo-prophylactic agent at 243 (93.8%). Majority started TP on admission 176 (68%) and stopped at discharge. At less than 1/3rd, 71 (27.4%) recommended TP after hospital discharge for an average duration of 4–6 weeks preferring graduated compression stocking followed by LMWH.

Conclusion: In our NSQ a small percentage of the consultant colleagues are using chemo-prophylaxis in isolation and in a majority thrombo-prophylaxis is not continued post-operatively for the recommended period of time as per guidelines. Although current TP practice is acceptable, use of available national guidelines would further improve the thrombo-prophylaxis practice. However patient compliance and resources are factors that need a thought.

Wound healing P119

Role of Sacral Nerve Stimulation (SNS) in chronic pelvic pain (CPP)

Srinivasah Narasimhaiah1, Waudby Phillip2, Culbert Brian3, Duthie Graham3
1 Academic surgical unit, Castle Hill Hospital, University of Hull, Cottingham, UK, 2 Academic surgical unit, Castle Hill Hospital, University of Hull, Cottingham, UK, 3 Department of Anaesthetics, Castle Hill Hospital, Cottingham, UK. £H16 4AY, 4 Academic surgical unit, Castle Hill Hospital, University of Hull, Cottingham, UK (simba_anu@yahoo.com)

Introduction: Chronic pelvic pain (CPP) is a disorder which can be difficult to treat affecting one’s QOL. SNS has been tried when other treatments have failed. The reports of this procedure are limited, so we reviewed our experience in order to determine whether it is a worthwhile procedure.

Methods: Patients who underwent SNS for chronic pelvic pain were identified (Aug 2005 – Oct 2007). This is a retrospective review of a prospectively maintained SNS database and the notes reviewed.

Results: 7 patients received SNS for CPP. The mean age was 50 years. Female to male ratio was 6:1. In total 11 temporary SNS devices were used. 2 (28.5%) patients had successful outcome and five failed. Among the successful ones PACS/BPI assessment showed an improvement of 70%–80% at the end of two weeks of temporary test stimulation. The successful ones are waiting for a permanent SNS to be implanted.

Conclusion: SNS for chronic pelvic pain with our limited experience offers an option, when other treatments have failed. However, the success rates one could achieve might be less.

Minimally invasive P121

Central and peripheral chemoreceptor stimulation and influence on the blood flow in the rat’s sciatic nerve

Stolarczyk Artur1, Przybylski Jacek2, Deszczynski Jarosław3
1 Dept. Ortho.&Rehab., Medical University, Warsaw, Poland, 2 Dept. Clin. Rehab., Medical University, Warsaw, Poland, 2 Department of Biophysics and Physiology, Medical University of Warsaw, Warsaw, Poland, 3 Dept. Ortho.& Rehab., Medical University, Warsaw, Poland (jdeszcze@o2.pl)

Introduction: It is well known that cerebral blood flow remains relatively constant if arterial blood pressure falls and increases. Hypoxemia and respiratory acidosis leads to the increase in cerebral blood flow. The response of peripheral nerve blood supply to such stimuli remains unknown. The aim of the study was to investigate the influence of stimulation arterial and peripheral chemoreceptors on the sciatic nerve blood flow (SNBF).

Materials and methods: Using the laser Doppler flowmeter(LDF) we have measured the sciatic nerve blood flow (NBF) of healthy, anesthetized rats at rest, at various arterial blood pressures and during respiratory acidosis and hypoxia. The intervention was carried out on 30 Wistar rats ventilated with a Harvard Rodent Ventilator (Model 638). Arterial blood pressure was recorded continuously from the common carotid artery (Tremed MCK-4011S).

Results: Use of the hypoxic gas mixture caused a decrease in SNBF from 15·12±0·62 ml/min/100g to 5·85±0·81 ml/min/100g (p<0.01). MAP decreased from 93·0±1·9 mmHg to 38·4±2·24 mmHg (p<0.01). The calculated SNVR rose from 4·25±0·089 ml/mmHg/100g to 7·15±0·29 ml/mmHg/100g (p<0.01). After pharmacological sympathetomy there was no changes in SNVR. Use of the hyperbaric-hyperoxic gas mixture caused an increase in SNBF from 14·8±0·45 ml/mmHg/100g to 28·32±0·19 ml/mmHg/100g (p<0.01). MAP rose from 78·0±2·9 mmHg to 102·1±3·15 mmHg (p<0.01). There was no changes in SNVR. After pharmacological sympathetomy there was no changes in SNBF, MAP and SNVR.

Conclusions: Our findings suggest that a resistance of vasa nervorum in the sciatic nerve is not regulated by Pa O2 and Pa CO2, there is no autoregulation.
Stimulation of central and regional chemoreceptors resulted in no significant change in sciatic nerve blood resistance. During a decrease of mean arterial pressure (MAP) there was an increase in vascular resistance of sciatic nerve as a fact of stimulation of autonomic noradrenergic neurons.

Orthopedic P122

Is Colles’ fracture as an important therapeutic problem in 21st Century?
Stolarczyk Artur1, Deszczynski Jaroslaw2, Nagraba Lukasz1, Miek Tomasz4
1 Dept. Orthop.&Rehab., Medical University, Warsaw, Poland, 2. Dept. Clin. Rehab., Medical University, Warsaw, Poland, 2 Dept. Orthop.&Rehab., Medical University, Warsaw, Poland, 4 Dept. Orthop.&Rehab., Medical University, Warsaw, Poland (jdescz@o2.pl)

Introduction: Colles’ fracture is one of the most commonly occurring fractures. Despite the fact, that fracture of distal extremity of the radius was described in 1814 by Abraham Colles, treatment of this trauma is still a vital problem and not always a therapeutic success. Most of the cases are treated non-operatively by reposition and immobilization. Nowadays it is considered that anatomical reposition is the most important factor determining the result of treatment.

Aim of the study: Evaluation of the influence of the position of bone’s fragments after the fracture and patient’s age on anatomical outcome of the Colles’ fracture reposition.

Materials and methods: The study included patients treated in Orthopaedics and Rehabilitation Clinic of II Medical Faculty of Medical University of Warsaw. There were 223 patients (189 females and 34 males) with isolated Colle’s fracture treated non-operatively. Mean age of patients was 65 years. Medical documentation was analyzed including radiograms of the forearm before and after reposition. The most important factors were angles of inclination (dorsal and radial) between the fragments assessed with diagnostic program.

Results and conclusions: The results show that high level of dislocation of the fragments and age over 60 have a negative influence on the reposition. It turned out that fully correct anatomical outcome was achieved only in 15% of patients with at least one of the risk factors. It is an argument for changing the classification to operative treatment.

Minimally invasive P123

Studies on sciatic nerve blood flow in respect to its vascular supply and tonic neural activity
Stolarczyk Artur1, Przybylski Jackel2, Deszczynski Jaroslaw3
1 Dept. Orthop.&Rehab., Medical University, Warsaw, Poland, 2. Dept. Clin. Rehab., Medical University, Warsaw, Poland, 2 Department of Biophysics and Physiology, Medical University of Warsaw, Poland, 3 Dept. Orthop.&Rehab., Medical University, Warsaw, Poland (jdescz@o2.pl)

Introduction: The introduction of laser flowmeters for a continuous measurements of blood flow has permitted accurate assessment of peripheral nerve microcirculation. The aim of our study was: 1) to carry out a functional verification appropriate anatomical sources of sciatic nerve blood supply in the rat; 2) to develop a measurement technique to facilitate standardisation of results; 3) to determine the role of tonic activity of efferent nerve fibres in the maintenance of resting blood flow in the sciatic nerve. nerve blood flow.

Materials and methods: The study was carried out on 20 Wistar rats ventilated with a Harvard Rodent Ventilator (Model 638). Arterial blood pressure was recorded continuously from the common carotid artery (Temed MCK-4011S). The sciatic nerve the trunk was mobilised extending for 18 mm. After dissection the mobilised nerve was covered by a thin layer of muscular fascia clearly visible only under the operating microscope. Measurement of the blood flow was done using a laser Doppler flowmeter (Alf 21 Transonic) with a probe of 0.8mm in diameter, 8mm from the subcutaneous layer. The animals were divided into two groups including ten rats: I-control group, II-the effect of lidocaine was investigated. A complete lidocaine blockade in nerve conduction was evidenced by absent motor muscle response in the lower limb following the application of a 3V electric stimulus above the blockade site. In the statistical analysis we used student-t test for the standard distribution to compare both rat groups, whereas, the ANOVA test was used for paired parameters to compare the results of subsequent experimental series.

Results: The removal of the muscular fascia resulted in a significantly increased blood flow from 16-8 ml/min/100g body weight + 1.75 to 28 l/min/100g body weight + 5.46 (at p < 0.01). The value of the blood flow measured in the nerve with the fascia removed was assumed to be 100% in the subsequent stages of the experiment.

Conclusions: Our results render the following: 1) in order to obtain a true measurement of the blood flow through the sciatic nerve it is necessary to remove its muscular fascia; 2) an uninjured epineurium plays a crucial role in maintaining a resting blood flow; 3) proximal and distal dissection of the sciatic nerve confirmed the role of its main sources of blood supply in maintaining a resting blood flow in the nerve trunk; 4) the tonic neural activity plays a

Orthopedic P124

Assessment of the femoral component rotation in total knee arthroplasty
Stolarczyk Artur1, Deszczynski Jaroslaw2
1 Dept. Orthop.&Rehab., Medical University, Warsaw, Poland, 2. Dept. Clin. Rehab., Medical University, Warsaw, Poland, 2 Dept. Orthop.&Rehab., Medical University, Warsaw, Poland (jdescz@o2.pl)

Introduction: Accurate placement of the femoral component in total knee arthroplasty, particularly in rotation is very important to ensure in a biomechanically stable construct. There are known reproducible femoral landmarks such as the anteroposterior axis (APA or Whiteside’s line), the posterior condylar axis (PCA) or epicondylar axis (EA) to locate the optimal position for femoral component rotation. We have assessed the epicondylar axis (EA) as a reproducible rotational landmark in the femur.

Methods: We analyzed the rotational position of EA with the aspect to the PCA using CT scans. 35 knees were assessed—22 women and 13 men, mean age was 65±9 years (SD= 9.7 years). Each line was drawn using defined criteria and reproducible landmarks and the angle between them measured on the medial side of the CT slice to determine a mean value. Every 1.25 mm CT slice were done.

Results: The mean value for the EA with respect to the PCA was ±4±8° (range 0° to 10.3°, SD = 2.55°). There was no statistically significant difference between right and left knees or men and women.

Conclusions: The epicondylar line is a reproducible landmark in the knee with relatively consistent relationship with other axes of femoral rotation. Establishing of the EA is vital for proper positioning and external rotation of the femoral component.

Sepsis, Infection, Immunity P125

The activity of Posaconazol to fungal strains isolated from clinical specimens of patients hospitalized in Warsaw Medical University Central Clinical Hospital
Swoboda-Kopec Ewa1, Sikora Magdalena2, Blachnio Sylwia3, Kawecki Dariusz4, Jaworska-Zaremba Marta5, Lucezak Mirosław6
1 Microbiological Laboratory of Central Clinical Hospital Medical University of Warsaw, Poland, 2 Dept. of Medical Microbiology Medical University of Warsaw, 3 Microbiological Laboratory of Central Clinical Hospital Medical University of Warsaw, 4 Dept. of Medical Microbiology Medical University of Warsaw, 5 Dept. of Prosthetic Dentistry Medical University of Warsaw, 6 Microbiological Laboratory of Central Clinical Hospital Medical University of Warsaw (dkauczek@o2.pl)

Introduction: The increasing resistance of fungal strains to antifungal agents is the main reason of research on the new antimitotics.

Aim of the study: The susceptibility analysis of fungal strain isolated from patients hospitalized in Warsaw Medical University Central Clinical Hospital in 2007 to Posaconazole in vitro.

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Material and methods: The clinical material was consisted of: blood samples-33 (43%), respiratory tracts specimens-18 (23,7%), wound swabs-16 (21%), urine samples-4 (5,1%) and others-3 (6,6%). Strains were cultured on Sabouraud and CHRO-Magar media and identified by ID32C tests. The susceptibility analysis to Posaconazole was done according to E-tests.

Results: From the total number of 76 positive samples we cultured 87 of fungal strains. The following species were cultured C. glabrata – 41 (47%), C. albicans – 12 (14%), C. krusei – 10 (11,5%), C. parapsilosis – 6 (7%), C. inconspicua – 4 (4,5%), Saccharomyces cerevisiae – 4 (4,5%), other – 10 (11,5%). We isolated 83 strains of the yeast like fungi (95% of all isolates) and two species of molds (5% of all isolates): Aspergillus fumigatus – 2 strains and Fusarium incarnatum – 2. Our results were analyzed according to ARTEMIS Program. The final Posaconazole concentration was 0,008 to 32ug/ml. In our study the break point was ≤ 1 ug/ml and it was established as the agent activity. Posaconazole was active for 83 isolates (95% cases) and it had the break point ≤ 1 ug/ml. The all resistant isolates were from the same specie of C. glabrata. Posaconazole had not been active for 4 (5%) of isolates.

Conclusions: 1. 10% of C. glabrata isolates were Posaconazole resistant. 2. Posaconazole was active for 95% of isolated strains.

Gastrointestinal_3 P127

Enteral immunonutrition improves postoperative reactivity of PBMC in gastric cancer patients

Szczerbak Antoni1, Scislo Lucyna2, Siedlar Maciej3, Czupryna Antoni4, Kulig Jan5

11st Department of Surgery, Medical College, Jagiellonian University, Krakow, Poland, 2Institute of Clinical Nursing, Faculty of Health Sciences, Medical College, Jagiellonian University, Krakow, Poland, 3Department of Clinical Immunology, Medical College, Jagiellonian University, Krakow, Poland, 41st Department of Surgery, Medical College, Jagiellonian University, Krakow, Poland, 51st Department of Surgery, Medical College, Jagiellonian University, Krakow, Poland

Several studies indicate that in surgical patients impaired reactivity of peripheral blood monocytes may be a predictive factor of postoperative outcome. Patients with low response of peripheral blood mononuclear cells (PBMC) to the endotoxin stimulation have worsened prognosis of postoperative sepsis survival. The aim of this study was to assess the influence of postoperative enteral immunonutrition on the postoperative production of IL12 and TNF alfa by LPS stimulated PBMC of gastric cancer patients. PBMC were isolated fro the blood of 99 gastric cancer patients (54 standard enteral nutrition and 45 immunonutrition) preoperatively, in the 1st, 3rd and 7th postoperative day. Cells were stimulated with lipopolysacharid LPS. The level of cytokines was measured wit specific ELISA kits. The levels of IL12 rose from the 1st postoperative day in immunonutrition patients, but not in standard nutrition patients. In the 7th postoperative day IL12 level was 123 pg/ml in Standard nutrition group and 297 pg/ml in immunonutrition group. The difference was statistically significant (p=0,022). TNF alpha levels increased in immunonutrition group being stable in standard nutrition group. However the difference between groups was nonsignificant. These findings indicate that immunonutrition may improve postoperative function of PBMC in gastric cancer patients.
IL-1ra were 67%, 94% and 39653±2 pg/mL, respectively. Pleural fluid concentrations of IL-6 over 25000pg/mL and IL-1ra over 60000pg/mL indicate high risk of development of postoperative complications in lung cancer patients. Observation that elevated concentrations of IL-6 and IL-1ra in pleural fluid on the first postoperative day precede postoperative complications, supports the hypothesis that cytokinemia is a possible reason, not only the result of postoperative complications.

Orthopedic P129
Distal revascularization of the right thumb – a case report
Szczesny Grzegorz1, Gorecki Andrzej2
1 Department of Orthopaedics and Traumatology, Medical University, Warsaw, Poland, 2 Department of Orthopaedics and Traumatology, Medical University, Warsaw, Poland (g.szczesny@cmdik.pan.pl)

Finger replantations and revascularizations are salvage procedures enabling to restore hand function after injury. Nevertheless, those procedures at intraphalangeal joints, due to small diameter of blood vessels usually not exceeding 0.5 mm requiring precise microsurgical techniques, and high rate of complications with finger necrosis, are controversial.

Patient and method: We present the result of revascularization of right thumb at the intraphalangeal joint. 34 years old carpenter was admitted due to open fracture of the proximal phalanx (non-complete amputation) of the right thumb at the intraphalangeal joint. 34 years old carpenter was admitted due to open fracture of the proximal phalanx (non-complete amputation) of the right thumb at the intraphalangeal joint produced by high-speed rotating saw, with corresponding injury to neuro-vascular bundles, flexor and partially extensor tendons, and preservation of the 1 cm wide skin flap on the dorsal aspect of the finger. Thumb was stabilized intramedullary with K wire, and microsurgical reconstruction of one artery and vein restored its function justifies the procedure.

Results: Performed procedure allowed to restore finger vitality, which resulted in proper proceeding wound healing. Prolonged bone union required forthcoming secondary intervention with firm stabilization. Finally, the range of motion at the intraphalangeal joint was markedly reduced despite intense rehabilitation, but without functional significance for everyday life or occupational activity.

Discussion: Replantations of distal fingers are complicated by replants necrosis and terminalization in more than 50%, especially when corresponds with lacerated wound. Nevertheless, the possibility to restore finger length and function justifies the procedure.

Cardiovascular, Thoracic_1 P130
Can mediastinal lymphadenectomy cause immunosuppression after lung cancer
Szczesny Tomasz J1, Słotwinski Robert2, Szczygiel Bruno3, Stankiewicz Aleksander4
1 1 Department of Thoracic Surgery, Cancer Center, Bydgoszcz, Poland, 2 Department of Thoracic Surgery, Olsztyński City Hospital, Olsztyń, Poland, 3 Department of Immunology and Nutrition, Medical Academy, Warsaw, Poland, 4 Department of Surgical Research and Transplantology, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland, 5 Department of Human Nutrition, Medical Academy, Warsaw, Poland

Twenty-three patients undergoing uncomplicated resection due to lung cancer (11 right lung cancer, 12 left lung cancer) were analyzed. In patients with right lung cancer systematic lymphadenectomy, while in patients with left lung cancer systematic sampling was performed. Serum IL-6 and IL-1ra concentration was measured before and after surgery, and on postoperative day 1, 3, and 7, as well as in sputum at the end of surgery and in pleural fluid on postoperative day 1 by ELISA test. Peripheral blood lymphocytes (PBL) count was measured with flow cytometry. Time of surgery was higher in patients after right than after left thoracotomy (154 ± 31 vs 119 ± 6 ± 24·81 minutes; p<0.008). The number of resected mediastinal lymph nodes was higher in patients after right than left thoracotomy (27.6 ± 7.6 versus:11.1 ± 8.1; p<0.0006). Postoperative decrease of PBL was significantly higher in patients after right than left thoracotomy (1.25 ± 0.37 vs 1.75 ± 0.64 × 10^5/ML; p=0.04). No significant differences were found in serum, pleural fluid and sputum concentration of IL-6 and IL-1ra between patients after right and left thoracotomy, but a negative correlation between concentration of these cytokines in pleural fluid and a number of resected mediastinal lymph nodes was found (Spearman test for IL-6: r = -0·723; p<0·001; for IL-1ra: r = -0·768; p<0·001). Number of "positive" N2 lymph nodes did not correlate with cytokines' pleural fluid concentration.

Orthopedic P131
Cemented hemiarthroplasty for stabilization of the comminuted trochanteric fractures in elderly patients
Szczesny Grzegorz1, Biedrzycki Jerzy2, Gorecki Andrzej3
1 Department of Orthopaedics and Traumatology, Medical University, Warsaw, Poland, 2 Department of Orthopaedics and Traumatology, Medical University, Warsaw, Poland, 3 Department of Orthopaedics and Traumatology, Medical University, Warsaw, Poland (g.szczesny@cmdik.pan.pl)

Successful operative stabilization of the comminuted, trochanteric fractures in elderly patients is problematic due to advanced osteoporosis excluding stable osteosynthesis, poor physical activity and lack of cooperation during postoperative rehabilitation. On the other hand, the most intensively used operative techniques dedicated to trochanteric fracture stabilization, including stable fixation with dynamic hip screw, gamma nail, or flexible Ender nailing exclude the weight bearing of the operated extremity for a prolonged period of time. The aim of study was to analyze the usefulness of the cemented hemiarthroplasty for the treatment of patients with comminuted trochanteric fractures. We analyzed 26 patients (19 women and 7 men, 68–93 years old). For hip stabilization hemiarthroplasty was implanted on standard PMMA bone cement. Results. In each case stable fixation was obtained enabling weight bearing immediately after operation. Patients were allowed to weight their body weight from 3rd postoperative day.

Discussion: Hemiarthroplasty is an operative technique developed to restore function of an extremity lost in consequence of femoral neck fracture. It is implanted nowadays quite seldom, with growing number of total hip replacements. Nevertheless, it is still used in elderly patients, where minimal surgical approach is far more important than long-living implant. The ability of cemented hemiarthroplasty to restore function of an extremity with minimal operative intervention makes it useful for stabilization of comminuted trochanteric fractures. Basing on our results we concluded that it could be a method of choice for the treatment of the comminuted trochanteric fractures in elderly patients.

Transplantation, Organ preservation_2 P132
Kidney transplantation in recipients with atherosclerosis of iliac arteries
Swiercz Paweł1, Galążka Zhigiew2, Szmidi Jacek3
1 Department of General, Vascular and Transplant Surgery, Medical University, Warsaw, Poland, 2 Department of General, Vascular and Transplant Surgery, The Medical University of Warsaw, 3 Department of General, Vascular and Transplant Surgery, The Medical University of Warsaw (pawel2@charmed.pl)
The influence of atherosclerosis in iliac arteries, often found during kidney transplantation, on patient and graft survival was not investigated. Standards of surgical approach are also not established. Study is based on 100 pairs of recipients of kidney transplant harvested from the same donor. In one of recipient from each pair atherosclerosis in iliac arteries was discovered (group A), while in the other there were no lesions (group B). Groups were compared in preoperative demographic and medical parameters, and operative factors. Modifications of operative approach depending on degree of occlusive changes in group A were analyzed. Graft and patient survival rates were estimated in five year period. Group A were older (average 8,76 year) and more frequently diabetic (20% versus 3%). The anastomotic time was 33 and 28 min in groups A and B, respectively. Renal artery and vein thrombosis occurred in one case in group A, none of group B, and in 3 patients in group A, one in group B, respectively. In recipients of group A with moderate atherosclerosis of hypogastric artery, it was Anastomosed end-to-end with renal artery after thrombendarterectomy (63%). In cases of critical stenosis or total occlusion of hypogastric artery, graft artery was anastomosed to side of external (30%) or common (6%) iliac artery. In one patient transplanted kidney artery was connected to side of simultaneously implanted aorto-bifemoral prosthesis. Five ears survival rates of graft and patient were in group A 66% and 83%, and in group B 69% and 87% and were not significantly different. Results of kidney transplantation in recipients with atherosclerotic iliac arteries are good and comparable to these achieved in other patients. In this group one should perform additional vascular operation or modify the manner of arterial anastomosis during the transplantation.

Oncology P133
Evaluation of systemic inflammatory response based on serum concentration of selectins in patients operated on due to lung cancer

Świńska Joanna1, Kowalewski Janusz2, Zekanowska Ewa3, Szczęsny Tomasz4
1 Institute of Oncology, Bydgoszcz, Poland, 2 Institute Of Oncology, Bydgoszcz, Poland, 2. Department Of Thoracic Surgery And Oncology, Medical University, Collegium Medicum, Toruń, Poland, 3. Department Of Pathobiology, Medical University, Collegium Medicum, Toruń, Poland, 4. Institute Of Oncology, Bydgoszcz, Poland (szczesny@lungcancer.med.pl)

Inflammatory response plays an important role in carcinogenesis and in the response to surgical injury. Selectins are directly involved in these responses. The aim of this study was to assess the influence of pulmonary resection due to lung cancer on serum concentration of selectins. Prospective study was carried out in a group of 21 patients operated on due to lung cancer. Seventeen lobectomies and 4 pneumonectomies were performed. In all of them systematic lymph node dissection of the mediastinum was performed. Antithrombotic prophylaxis was covered by physical methods and by subcutaneous injection of low molecular weight heparin. The control group consisted of 39 healthy volunteers. Tests for three types of soluble human selectins (sP, sL and sE) were used to measure the concentration of particular selectin in venous blood. The statistical analysis was based on Mann-Whitney tests for three types of soluble human selectins (sP, sL and sE) were used to measure the concentration of particular selectins in patients operated on due to lung cancer.

Cardiovascular, Thoracic P134
Studies on the effect of Centropenoxyne in ischemia-reperfusion rat heart model

Takacs Béldikó E1, Matyas Lili2, Nagy Katalin3, Peto Katalin1, Istvan Bak Edit Varga1, Mikó Iren2
1. Department of Operative Techniques and Surgical Research, Institute of Surgery, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary, 2. Department of Operative Techniques and Surgical Research, Institute of Surgery, Medical and Health Science Center, University of Debrecen, 3. Gerontological Research Group of Third Department of Internal Medicine, Medical and Health Science Center, University of Debrecen, 4. Department of Operative Techniques and Surgical Research, Institute of Surgery, Medical and Health Science Center, University of Debrecen, 5. Department of Pharmacology, Medical and Health Science Center, University of Debrecen, 6. Department of Operative Techniques and Surgical Research, Institute of Surgery, Medical and Health Science Center, University of Debrecen (takacs@med.unideb.hu)

Aim: Studying the effect of Centropenoxyne (CPEH) on the heart injury caused by Reactive Oxygen Species (ROS) during ischemia-reperfusion (I/R).

Methods: Based on our earlier experiments we have chosen a ischemia-reperfusion rat heart model according to Langendorff, where the 15-minute global ischemia was followed by 30 minutes of reperfusion. We have observed the functional changes as incidence of the ventricular fibrillation (VF) and/or tachyarrhythmia (A) and the alterations of contractile parameters during reperfusion and determined the protein carbonyl content of the myocardium as the indicator of the protein oxidation caused by ROS released after I/R. For the comparative study of the treated and control groups, the rats CPH pre-treatment were carried out for 4 weeks with 100 mg/kg p.o., the control received the solvent (n=15/group).

Results: In the beginning of the reperfusion in 70% of the hearts VF and/or A occurred in which lasted till the 5–7th minutes, the contractile parameters showed the most radical changes in the same period in the control hearts. In the first minutes of the reperfusion the amount of the carbonyl content is significantly increased with nearly 30% after I/R. We investigated the effect of the CPH pre-treatment the most dominant changes in the functional and biochemical parameters. The incidence of the heart VF and/or A was decreased with 42.8%, the rise of the amount of the oxidised proteins and thus the degree of the protein damage has been significantly reduced (19.8%) by CPH pre-treatment.

Conclusions: We can find out that in the Langendorff-rat heart model, among other factors, the release of ROS play an important role in the I/R caused damage. Centropenoxyne, the free radicals scavenger drug, it is well known to be a neuroenergetic substance in medicine, also protects the heart from the oxidative injury during I/R.

Gastrointestinal P135
Prevalence and risk factors evaluation of eventration

Tchorzewski Marcin1, Twardy Iwona2, Drziki Adam3
1. Department of General and Colorectal Surgery, Medical University of Łódź, Poland, 2. Medical University of Łódź, Poland, 3. Department of General and Colorectal Surgery, Medical University of Łódź, Poland (marcin@infocenterum.com)

Post laparotomy wound dehiscence – eventration is a serious surgical complication of abdominal surgery. Despite the advances in surgical technique, suture quality and ever improving intra and postoperative antibiotic therapy, eventration complicates 0,2% to 7% (mean 2%) laparotomies. Wound dehiscence results in additional surgery and extended hospitalization, it also increases mortality and morbidity rates and thus escalates the costs of treatment. The aim of the study was evaluation of prevalence and risk factors of eventrations in a group of patients who underwent serious abdominal procedures mainly colorectal cancer.

Materials and methods: retrospective analysis of 54 eventration cases which complicated 1249 laparotomies performed in the Department of General and Colorectal Surgery of Medical University of Łódź between 2005–2007 was done.
Results: Wound dehiscence was observed in 4.3% of all laparotomies. In 12.5% it was early and in 87.5% late dehiscence. In 9% of cases evacuation occurred more than once. Males stated for 71.8% of analyzed group, 80.7% were patients with neoplastic disease, 16.1% with inflammatory bowel disease and the rest 3.2% with other causes like acute pancreatitis. All patients had tension-free sutures in addition to standard wound closure. In 44% of colon cancer patients with wound dehiscence the tumor was localized in the rectum. In 40% of cases patient had more than one laparotomy. Mortality rates were 25% and mean hospital stay 27.6 days. Abscess, infected fluid or intestinal contents were found at first laparotomy in the abdominal cavity of 17% patients who developed eventration. Most patients had reduced levels of serum protein and albumin.

Conclusions: High rates of eventrations correlate with colon surgery in cancer patients. Rectal cancer, consecutive surgery, male gender, infected contents in peritoneal cavity and reduced levels of proteins and albumin are risk factors of eventration.

Transplantation, Organ preservation_1 P136

Ion disorders and graft function in kidney transplantation
Tejchman Karol1, Domanski Leszek2, Sulikowski Tadeusz1, Ostrowski Marek4
1 Department Of General Surgery And Transplantation, Szczecin, Poland, 2 Department Of Nephrology, Transplantology And Internal Medicine, 3 Department Of General Surgery And Transplantation, 4 Department Of General Surgery And Transplantation (karol20@med.pam.szczecin.pl)

The study’s purpose was analysis of dynamics of ions concentration alterations during 30 minutes of reperfusion and graft early function in patients after kidney transplantation. The examined group consisted of 51 recipients: 22 men, 29 women in average age 48.91±13.16 years. The blood sample for gas analysis was taken 9 times from group of 13 examined patients during operation using catheter placed in arteriovenous fistula 0, 1, 3, 5, 10, 15, 20, 25, 30 minutes after unclamping renal vessels. Blood samples were analyzed using Corning 278 apparatus, measuring inter alia serum concentrations of Na+, K+, Ca2+ (also with pH correction). The evaluation of temporary acid-base balance state was made on the basis of common parameters: pH, pCO2, [HCO3-], BE. Examined patients were in general anesthesia with stable external conditions (O2 saturation, heart rate, blood pressure, temperature), also with constant tidal volume and rate. Additionally hematocrite, oxygen saturation and hemoglobin concentration were also taken into consideration. Evaluation of graft function was based on amount and start of urine output as well as serum concentrations of creatinine, urea, uric acid and ions (Na, K). The analysis showed increasing or decreasing of parameters of metabolic acidosis with compensatory serum pCO2 growth. There was insignificant decrease of [Na+] and [Ca2+] in the first minute of reperfusion, but statistically significant increase of [K+] + corresponding with hematocrite in first 3 minutes. Maximal values of [Na+] and [Ca2+] were observed in 5th minute, during decreasing [K+] with minimum in 10th minute. Decrease of [Na+] and [Ca2+] had similar dynamics, but it was different to corresponding alterations of hematocrite, which proves it was not simply an effect of intraoperative fluid refill. Examination of graft condition and its function showed that dynamics of perioperative acid-base disorders may play a role of delayed graft function risk factor.

Hepatobiliary_2 P137

Gaint haptic hemangiomia; treated with enucleation after selective portal ven
Tekin Ahmet1, Sahin Mustafa2, Kucukkattallar Teyvik3, Cakir Murat4, Yildirim Erkan5, Esen Hasan6
1 Selcuk University, Meram Medical Faculty, Department of General Surgery, Konya, Turkey, 2 Selcuk University, Meram Medical Faculty, Department of General Surgery, Konya, Turkey, 3 Selcuk University, Meram Medical Faculty, Department of General Surgery, Konya, Turkey, 4 Selcuk University, Meram Medical Faculty, Department of Radiology, Konya, Turkey, 5 Selcuk University, Meram Medical Faculty, Department of Anesthesiology, Konya, Turkey (sahinmu@hotmail.com)

Hemangiomia is the most common benign tumor of the liver and it is often asymptomatic. It occur in all age but predominantly in women. They often do need to be removed or treated. Conservative treatment of the liver hemangiomia is preferred because of the minimal risk of complications. However, if they may be large, produce a mass effect and severe complications. Surgical resection provides the only consistently effective method of treatment and is indicated for symptomatic lesions, rapidly enlarging masses, rupture, profound thrombocytopenia and an uncertain diagnosis. In our report, we presented a symptomatic giant hemangiomia which has been evaluated as inoperable at other centers because of its volume. We treated the patient with enucleation after making the case operable by reculing the size with selective portal vein embolisation.

Orthopedic P138

Recall of last vaccination date in adult patients receiving a tetanus booster in the emergency department
Thompson Simon1, Ryan Audrey2, Weise Martin3
1 St Marys Hospital, Paddington, UK, 2 St Mary’s Hospital, Paddington, 3 St Mary’s Hospital, Paddington (s.m.thompson@ic.ac.uk)

Introduction: Maintenance of effective immunity against tetanus requires regular injections with vaccine. Patients who attend the emergency department (ED) with injuries susceptible to tetanus are therefore routinely asked if their boosters are up to date and given the vaccine if they are not. The majority of which may require Orthopedic referral. Those with poor recall also require the injection, as access to written confirmation of their vaccination record is usually not available in the ED. Many of those patients may well be up to date and therefore do not actually need the vaccine. We therefore wanted to know how many patients receive boosters because of poor recall.

Methods: For 100 consecutive adult patients requiring a tetanus booster injection, our emergency nurse practitioners recorded whether they did so because they remembered that their boosters were not up to date or because of poor recall.

Results: 57 patients received the booster because they were not up to date and 43 because of poor recall.

Discussion: Do you remember YOUR last tetanus vaccination? Almost half of the patients in our series were given the injection because they did not. Like other injections, tetanus boosters are painful, have potential side effects and take up valuable nursing time. To ensure that only those receive the vaccine who really need it, a system that allows ready access to vaccination records should be developed.

Orthopedic P139

The effect of volar tilt on functional outcome of the wrist in distal radius fracture
Thompson Simon1, Francis Randhir2, Bacu Abdul1
1 St Marys Hospital, Paddington, UK, 2 St Mary’s Hospital, Paddington, 3 St Mary’s Hospital, Paddington (s.m.thompson@ic.ac.uk)

Introduction: Treatment and outcome of distal radius fractures are variable. We measured the effect of volar tilt on functional outcome. Methodology: We studied 132 patients, age range 43–85, with distal radius fractures. According to Frykman’s Classification 24.2% were Type I, 22.2% Type II, 10.6% Type III, 4% Type IV, 3% Type V, 8% Type VI, and 27.6% Type VII. The mean follow up was 16 months. Patients were treated with standard methods, depending on fracture classification. AP and lateral radiographs monitored progression. We formed 3 groups: Group 1 neutral or positive volar angle; Group 2 dorsal angulation between −1 and −15 degree; Group 3−16 degree or more. Grip strength (hydraulic hand dynamometer), and range of movement were translated into a percentage of function. We formed 3 groups: Group 1 neutral or positive volar angle; Group 2 dorsal angulation between −1 and −15 degree; Group 3−16 degree or more. Grip strength (hydraulic hand dynamometer), and range of movement were translated into a percentage of function.
Transplantation, Organ preservation_2 P140

31P high resolution NMR spectroscopy of the human hepatic bile secreted after liver transplantation

Toczyłowska Beata1, Kacka Agata2, Chalimoniuk Malgorzata3, Nyckowski Paweł4, Gierszukiewicz Dorota5, Krawczyk Marek6

1 Institute of Biochemistry and Biomedical Engineering, Polish Academy of Sciences, Warsaw, Poland; 2 Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Warsaw, Poland; 3, 4 II Department of Anesthesiology and Intensive Therapy, Medical University of Warsaw, Poland; 5 Department of Cellular Signaling, Medical Research Center, Warsaw, Poland; 6 Department of General, Transplantation and Liver Surgery, Medical University of Warsaw, Poland. (beata@sbh.waw.pl)

We hypothesize that NMR spectroscopy in vitro of human bile may provide information about the status of hepatocytes. It may also be an additional tool in assessment of the graft function following liver transplantation. The bile samples (n=9) were obtained from the bile duct at the end of liver transplantation just before completion of homoeostasis and surgical closure of the wound. Control samples (n=8) were obtained from patients having biliary tract surgery, when revision of bile ducts was necessary. Bile samples (1.5 ml) were frozen at −80°C until analyzed. Statistical analysis was done for the signal intensity. High resolution 31P NMR spectroscopy was used for analysis of human hepatic bile obtained from the graft after liver transplantation. Ratio of all phosphate-containing compounds in the native bile were analyzed as well as concentration of one of the compound relative to external standard. Three signals of the native bile were analyzed: phosphoethanolamine (PE), lysophosphatidylcholine (LPC), and sum of the phosphatidylcholine (PtdC) and phosphocholine (PC). LPCdC signal was very low in the transplanted liver group and was not possible to do statistical analysis. We also analyzed concentration of PE compared to the external standard (H3PO4), which signal in the 31P spectrum is extended from the reference signal. Concentration of the PE in transplanted liver group was significantly higher (Mann-Whitney test, p<0.05) then in the control group. Ratio of PE/PtdC + PC differed significantly for both groups (Mann-Whitney test, p<0.01). These results indicated that 31P NMR spectroscopy in vitro could be used for analysis of the graft function and early signs of rejection. Its also may suggest that liver dysfunction is due to PtdC and PE pathways disturbance.

Gastrointestinal_3 P142

Monitoring the depth of anesthesia with auditory evoked potentials during bariatric

Trzebicki Janusz1, Lisik Wojciech2, Wierzbicki Zbigniew3, Mayzner-Zawadzka Ewa4, Chmura Andrzej5

1 Department of Anesthesiology and Intensive Care, The Medical University of Warsaw, Poland; 2 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland; 5 Department of Anesthesiology and Intensive Care, The Medical University of Warsaw, Poland; 3, 4 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland. (trzebickij@wm.edu.pl)

One of the latest continues consciousness state monitoring methods during general anaesthesia is auditory evoked potentials (AEP) registration in the AAI (A-line Arx Index) scale. The MEDLINE database was searched electronically for articles for the period of 1980 through January 2008 and we did not find any rapport of AEP usage during bariatric surgery procedures.

 Patients and methods: Our group enclosed 15 patients (27–54 years, BMI–49 ± 6 kg/m2) prepared for bariatric surgery. The consciousness level measurement with AEP (AEP monitor/2 version 1.61, Dannmeter A/S, Denmark). Sedation was performed with propofol TCI (Target Controlled Infusion) 3–6 mcg/ml and analgesia with fentanyl. Servini’s weight correction formula was adopted for propofol dosage maintenance. We evaluated: consciousness level – AAI scale, influence of muscular tone and surgical electrocoagulation on AAI, time to extubation and TCI value during extubation. Results Level of AAI correlated with clinical depth of sedation and enabled to maintain proper dosage of propofol. The interdependence between AAI elevation and muscular strength return or surgical electrocoagulation during extubation was 2.08 ± 0.36 mcg/ml. The mean time to extubation were 12, 69 ± 4.19 min.

Conclusions: The depth of anesthesia monitoring during bariatric surgery enables to adopt TCI propofol dosage. The muscular action and surgical electrocoagulation create changes in AAI reading. The adequate AAI level secures the intraoperative anesthesia.

Oncology P141

Individual differences of checkpoint effector kinases expression in resectable colorectal neoplasms

Trzcinski Radzislaw1, Stawinska Magdalena2, Cyganekiewicz Adam3, Mik Michał4, Dziki Adam5, Krajewska Wanda6

1 Department of General and Colorectal Surgery, Medical University of Lodz, Poland; 2 Department of Cytobiochemistry, University of Lodz, Poland; 3 Department of Cytobiochemistry, University of Lodz; 4 Department of General and Colorectal Surgery, Medical University of Lodz; 5 Department of General and Colorectal Surgery, Medical University of Lodz; 6 Department of Cytobiochemistry, University of Lodz (trzczinski.radzislaw@poczta.onet.pl)

After DNA damage specific mechanisms that prevent cell cycle progression are activated in mammalian cells. Checkpoint kinases 1 and 2 (Chk1 and Chk2) are proposed to be key mediators in the network of gene expression pathways of cell response to genotoxic stress. Defects in Chk1 and Chk2 kinases are suggested to contribute to the development of hereditary and sporadic cancers. Both proteins are serine/threonine kinases activated by ATM (Ataxia Telangiectasia Mutated) and ATR (Ataxia Telangiectasia Related) in the presence of DNA double strand breaks. Alternations in the expression of Chk1 and Chk2 and their phosphorylated forms in colorectal cancer and their potential significance for colon tumorigenesis were studied. Fresh-frozen samples of 19 colorectal carcinoma, of which 7 were in stage A, 5 in stage B and 5 in stage C (according to Dukes scale) and 2 hyperplasic tissues, were analysed. Each sample was accompanied with section of normal colonic mucosa at the proximal resection margins. The expression of studied proteins in inactive (non-phosphorylated) and active (phosphorylated) forms was analyzed by Western blot and ELISA tests in presence commercially available antibodies (Santa Cruz Biotechnology, Cell Signaling Technology) that recognize non-phosphorylated and phosphorylated Chk1 and Chk2. Level of protein expression in Western blot technique was estimated by Integrated Optical Density-IOD (Gel -Pro Analyzer, Media Cybernetics) and in ELISA test y absorbance measurement at 490nm (Microplate Reader; BIO-RAD).

Conclusions: 1. Relative amounts of phosphorylated Chk1 and Chk2 decrease in approx. 50% of studied colon cancer samples, however, in some cases (25–30%) the relative amount of activated form of both kinases was found to elevate. 2. Reduced expression of Chk2 and activated Chk2 (pChk2) may be an important inactivating mechanism contributing to the development of colon neoplasm. 3. The amount of pChk2 protein increases in correlation with cancer progression into lymph nodes.
Gastrointestinal_1 P143

The effect of octreotide on intraperitoneal adhesion formation

Uzunkoy Ali
Harraw University School of Medicine, Turkey (aliuzunkoy@yahoo.com)

Aim: Intraperitoneal adhesions is one of the problems of abdominal surgery. It was aimed in this study to investigate the effect of octreotide on intraperitoneal adhesion formation in rats with intestinal anastomosis

Methods: Forty Wistar-Albino rats were randomly assigned of five groups. Laparotomy, ileal resection and anastomosis were performed in all rats. No medication was given in first group as control group. Isotonic saline solution was intraperitoneally given in second group and octreotide was intraperitoneally given in third group. Octreotide was subcutaneously given in forth group. Fourteen days later after first operation, relaparotomy was performed and the number of intraperitoneal adhesion bands and the strength and the extent of fibrous bands were evaluated.

Results: The total scores for intraperitoneal adhesion bands were significantly reduced in the rats given octreotide intraperitoneally and subcutaneously when compared the rats in other groups (p<0.05).

Conclusion: Octreotide given intraperitoneally or subcutaneously has beneficial effect in reducing postoperative intraperitoneal adhesions. The underlying mechanism may be the effects of octreotide on fibrinolysis or adhesion formation mediators

Gastrointestinal_2 P144

Can pre-operative ‘Enhanced Recovery’ information alter patients’ recovery rate expectations and improve outcomes following colorectal surgery? A Randomised Controlled Trial

Walter Catherine1, Joseph Biju2, MacFie John3, Drew Philip4, Monson John5
1. The Academic Surgical Unit, Castle Hill Hospital, Hull, UK; 2. The Academic Surgical Unit, Castle Hill Hospital, Hull, UK, 3. Scarborough Hospital, UK, 4. The Academic Surgical Unit, Castle Hill Hospital, Hull, UK; 5. The Academic Surgical Unit, Hull, UK (cwalter@nhs.net)

Background: The aim of this study was to assess whether pre-operative ‘Enhanced Recovery’ Information Leaflets (EILs) altered patients’ predicted and actual recovery rates following colorectal surgery.

Methods: Adults undergoing elective colorectal procedures at 2 UK centres were randomised to receive 1 of 2 pre-operative information packs: either the Standard Information Leaflet (SIL) alone (control); or a detailed EIL outlining Enhanced Recovery philosophies and recovery rates) and SIL together (intervention). Patients’ predicted post-operative recovery rates were recorded by questionnaires before and after administration of these leaflets. Patients were analysed in three groups: the positive responders – who gave decreased recovery rate predictions after post-information, the static group – unchanged predictions; and the negative responders – recovery rate predictions increased post-information, using SPSSv14.0.

Results: Fifty-one of the Sixty-four patients entered into the trial completed the questionnaires. There was no difference between the control and intervention groups proportions of negative, static or positive responders with 24%: 40%;: 36% and 27%: 15%: 26% (p=0:12) respectively. Nor were there any differences in the groups length of stays (LOS), with a mean 11 days (SD 5:05) for the control group and a mean 10 days (SD 3:4) for the intervention group (Mann-Whitney U Test p=0.852). Within the control group alone, no difference was seen in the proportions of men and women acting as positive and negative responders (p=0.62). In the intervention group the negative : positive responder ratio for females was 63%: 37% compared to 14%: 86% for men (p<0.05). Actual LOSs in positive responders were significantly shorter than in negative responders with a median of 9 days (mean 10, SD3) and 12 days (mean 13, SD 6) respectively.

Conclusions: Male patients receiving EILs are significantly more likely to be positive responders than the female patients, or patients not receiving the EIL, and positive responders demonstrate reduced LOSs when compared to the negative responders.

Gastrointestinal_1 P145

Does Enhanced Recovery Lead to Enhanced Anxiety After Colorectal Surgery? A Controlled Clinical Trial

Walter Catherine1, Joseph Biju2, MacFie John3, Drew Philip4, Monson John5
1. The Academic Surgical Unit, Castle Hill Hospital, Hull, UK; 2. The Academic Surgical Unit, Castle Hill Hospital, Hull, UK, 3. Scarborough Hospital, UK, 4. The Academic Surgical Unit, Castle Hill Hospital, Hull, UK; 5. The Academic Surgical Unit, Hull, UK (cwalter@nhs.net)

Aims: The aim of this study was to assess if management within Enhanced Recovery Programmes (ERP) alters patients’ perioperative anxiety levels after elective colorectal surgery.

Methods: Sixty-four consecutive, consenting, adult patients attending pre-assessment clinics for colorectal procedures at 2 centres were assigned to either standard surgical care (Control) or an ERP (Intervention), according to institution of admission. Twelve core elements of the ERPs management were identified and their application to each patients’ care recorded. The Hospital Anxiety and Depression Scale (HADS) was used to assess anxiety at recruitment, admission, discharge and 6 week follow-up. SPSSv14.0 was used to compare differences in baseline variables between patients and the clinical management elements and anxiety scores (calculated as ratios of normal scores to high scores) between the control and intervention centres.

Results: Forty-eight patients (75%) completed the study. There were no differences in patients’ baseline variables between the 2 groups. The ERP centre applied a mean of 7 (SD 2) enhanced recovery care elements (of a maximum 12 audited) to patient care, compared to 4:5 (SD 2) for the control centre (p<0.001). HADS (normal : high) anxiety level ratios at recruitment (24: 11 & 10: 14 ps=0.074), admission (18: 16 and 11: 12, p=0.913) and 6 week follow-up (24: 5 and 11: 9, ps=0.073), were similar between the control and ER groups respectively. HADS anxiety at discharge was greater in the ERP patients (10: 9) compared to the control (25: 4) =0.026. Lengths of stays were similar in both the control and ERP groups, with medians of 9:5 days (mean 10:5; SD 4:5 and 4 respectively).

Conclusion: Our results suggest colorectal patients treated within an ERP may have a greater number of patients with high anxiety levels at discharge. A good-quality randomised controlled trial would help investigate this further.

Transplantation, Organ preservation_1 P146

The risk of HBV transmission in liver transplantation from anti-HBcore antibodies presented donors

Wasia Dariusz1, Kosiarczyk Maciej2, Czerwinski Jaroslaw1, Pachołczyk Marek1, Malkowski Piotr1, Chmura Andrzej1
1. Dept. of Surgical & Transplantation Nursing Medical University of Warsaw, 2. Dept. of General Surgery & Transplantology Medical University of Warsaw, 3. Dept. of Surgical & Transplantation Nursing Medical University of Warsaw, 4. Dept. of General Surgery & Transplantology Medical University of Warsaw, 5. Dept. of Surgical & Transplantation Nursing University of Warsaw, 6. Dept. of General Surgery & Transplantology Medical University of Warsaw (tswiarok@poczta.net.pl)

Patients and methods: From 2000 till now 200 liver transplantations have been performed. Assessment of donor anti-HBcore antibodies has been implemented since 2003 but non-routinely, and finally has been done in 80 out of 152 (52.6%) of all liver donors including 49 livers retrieved until 2003. Only in 3 harvested and transplanted livers HBc Ab was positive, in 77 it was negative, in the rest 121 donors tests have not been performed at all. Two recipients of HBc positive liver graft were anti-HBcore negative and one was anti-HB core positive. During qualification to transplantation all recipients had prophylactic anti-HBV vaccination. In all cases after transplantation lamivudine treatment was administered, as well as three drugs immunosuppression therapy, and additionally anti-HBs globulin if necessary. Recipients of anti-HBc positive livers had HBV PCR test 2 months post-transplant.

Results: All tree recipients of anti-HBc(+) liver turned HBV PCR positive 2 months after transplantation. Seven months later, HBc(+) recipient showed no further HBV replication, tested with PCR, while 2 HBc(-) recipients who
received HBc(+) graft continued to have HBV viremia. Liver function in all of them is still satisfactory. Ninety-two HBV-negative recipients received a transplant from 121 HBc-non-tested donors. Two of those developed de novo HBV-hepatitis (2,2%).

**Conclusion:** The risk of HBV transmission from the HbsAg-negative donor non-tested for anti-HBc in Poland is approximately 2,2%. The risk of HBV active viremia in the HBc(−) recipients who received liver from HBc(+) is much higher than in HBc (+) recipients. Further studies to show if transplantation from HBc (+) donor to HBc (+) recipient is safe are needed.

**Gastrointestinal_2 P147**

**Preoperative evaluation of esophageal cancer by fluorodeoxyglucose positron emission tomography**

Watanabe Go1, Itami Atushi2, Tanaka Eiji3, Nomura Akinari4, Okabe Hiroshi5, Sakai Yoshiharu6

1 Department of Surgery, Kyoto University, Kyoto, Japan, 2 Department of Surgery, Kyoto University, 3 Department of Surgery, Kyoto University, 4 Department of Surgery, Kyoto University, 5 Department of Surgery, Kyoto University (gocata@kushp.kyoto-u.ac.jp)

**Background:** Esophageal cancer has a poor prognosis because of extensive spread to lymph nodes, even in early disease. A correct preoperative diagnosis is thus essential for deciding the treatment of choice. The development of [18F]fluorodeoxyglucose positron emission tomography (FDG-PET) has improved the detection of systemic spread, such as distant hematogenous and lymphatic metastases, in various malignant diseases. We assessed the value of FDG-PET for preoperative diagnosis in patients with esophageal cancer.

**Methods:** Fifty-nine patients with esophageal cancer who underwent esophagectomy without any preoperative therapy were studied retrospectively. The diagnosis of esophageal cancer was confirmed histopathologically on biopsy. Multidetector computer tomography (MDCT) was performed in all patients for staging, and FDG-PET was done in 58. Lymph node metastasis on CT was diagnosed on the basis of the minor axis of lymph nodes on 7-mm slices, according to widely used Japanese criteria: a minor axis of more 5 mm was classified as N1 metastasis, and a minor axis of more 7 mm was classified as N2, N3, and N4 metastasis.

**Results:** The sensitivity of FDG-PET for the diagnosis of lymph node metastasis was 50% in the neck, 30% in the upper mediastinum, 0% in the lower mediastinum, and 36% in the abdomen. The specificity of FDG-PET was 100%, 100%, 88%, and 100%, respectively. As compared with MDCT, FDG-PET was less sensitive and more specific for the preoperative diagnosis of esophageal cancer. When lymph node metastasis was detected on FDG-PET, the mean number of lymph nodes with pathologically confirmed metastasis was 3-7, which was significantly higher than of the mean number of metastatic lymph nodes when no metastasis was detected on FDG-PET (0-9). Evidence of lymph node metastasis on FDG-PET was associated with significantly more extensive spread of metastases on pathological analysis. Lymph node metastasis on FDG-PET did not significantly correlate with the 5-year survival rate.

**Conclusions:** FDG-PET did not contribute to preoperative diagnostic accuracy in this small study of patients with esophageal cancer. However, the detection of lymph node metastasis on FDG-PET correlated with the amount and spread of lymph node metastases as confirmed by pathological analysis. Studies of larger numbers of patients might show that the detection of lymph node metastasis on FDG-PET is one predictor of survival.

**Education P148**

**Consultant general surgeons’ opinions of anatomy in surgical training**

White Richard D1, Edmonds Katy M2, Fraser Rachael A3, Kachroo Naveen4

1 Department of Anatomy and Clinical Skills, University of Newcastle-Upon-Tyne Medical School, UK, 2 Department of Anatomy and Clinical Skills, University of Newcastle-Upon-Tyne Medical School, UK, 3 Department of Anatomy and Clinical Skills, University of Newcastle-Upon-Tyne Medical School, UK, 4 Department of Anatomy and Clinical Skills, University of Newcastle-Upon-Tyne Medical School, UK (kathysmichel@dgucoil.com)

**Introduction:** In the past few years, changes have been made to undergraduate medical curricula and post-graduate surgical training, with further modifications anticipated. This study was formulated following a decision to remove anatomy demonstrator posts from surgical rotations in our deanery. We investigated the perceptions of general surgeons towards the anatomy knowledge of surgical trainees, and what alterations could be made with respect to anatomy in surgical training as a result.

**Methods:** An online questionnaire link was e-mailed to all consultant general surgeons in the deanery. The questions focused on the attitudes of the consultants towards anatomy demonstrator posts, anatomy teaching at medical school, the anatomy knowledge of surgical trainees and anatomy in postgraduate surgical examinations.

**Results:** Of the 46 respondents: 80% said anatomy was extremely important to clinical practice with 91% stated that there should be more emphasis on teaching anatomy at medical school. 91% felt surgical trainees possess insufficient anatomy knowledge. 65% said the MRCS examinations test an insufficient level of anatomy knowledge. 63% stated that in the long-term, four months were spent demonstrating anatomy is preferable to four months in a clinical surgical specialty.

**Conclusions:** It is widely accepted that a good knowledge of anatomy is essential in the work of general surgeons. However, changes to undergraduate medical curricula and post-graduate surgical training mean that the anatomy knowledge of surgical trainees is both suboptimal and inadequately tested by the MRCS examinations. Consultant general surgeons recognise the importance of anatomy demonstrator posts in surgical training and favour their inclusion in future rotations. Results were fed back to both the medical school and the deanery, with the outcome that anatomy demonstrating remains an option for doctors wishing to pursue a career in surgery.

**Gastrointestinal_3 P149**

**Changes in the quality of life early after bariatric surgery**

Wierzchicki Zbigniew1, Lisik Wojciech2, Krawczyk Agnieszka3, Trzebicki Janusz4, Dziurowicz-Kozlowska Agnieszka5, Chmura Andrzej6

1 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 2 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 3 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland, 4 Department of Dermatology, The Medical University of Warsaw, Poland, 5 Department of Medical Psychology, The Medical University of Warsaw, Poland, 6 Department of General Surgery and Transplantology, The Medical University of Warsaw, Poland (zbiec@wm.edu.pl)

**The aim:** The subjective evaluation of the changes in the health-related quality of life (HRQL) of patients underwent RYGB and VBG procedures early after surgery.

**Patients and methods:** Between 2001-2007 160 patients developed bariatric surgery (122 women, 38 men; 96 – VBGs; 64 – RYGBs). Average weight-143 kg, BMI= 48.7 kg/m2, and body fat – 51.3%. All patients were instructed about the necessary improvements in their behavior and diet in the postoperative period and continued during the post op follow up: 2 weeks, 1,3,6 months after surgery.

**Results:** 98% of patients considered, that bariatric procedure improved their health, 92% admitted that complies with the dietary suggestions and has healthy lifestyle with adequate exercise. 85% of patients was satisfied with the outcome of the operation. The most bothersome problems 6 months postoperatively was feeling cold in 80% of, increased hair loss in 70%, nail brittleness in 56% of patients. There were also changes in the nutritional habit such as repugnance to meat in 73%, more willingness consume diary and fish products. In the assessed group there were no statistically significant differences between the sexes and between the groups with VBG and RYGB procedures.

**Conclusions:** As a result of a continuing education most patients improved their lifestyle and changed their nutritional habits. Their self-assessment
Sex differences in rheological properties among morbidly obese patients

Wiewióra Maciej1, Wylezol Mariusz2, Słowińska Ludmila3, Sosada Krystyn4, Piecuch Jerzy5, Zurawinski Wojciech6

1 Department of General and Bariatric Surgery and Emergency Medicine in Zabrze, Medical University of Silesia, Katowice, Poland, 2 Department of General and Bariatric Surgery and Emergency Medicine in Zabrze, Medical University of Silesia, Katowice, Poland, 3 Chair and Department of Biophysics in Zabrze, Medical University of Silesia, Katowice, Poland, 4 Department of General and Bariatric Surgery and Emergency Medicine in Zabrze, Medical University of Silesia, Katowice, Poland, 5 Department of General and Bariatric Surgery and Emergency Medicine in Zabrze, Medical University of Silesia, Katowice, Poland, 6 Department of General and Bariatric Surgery and Emergency Medicine in Zabrze, Medical University of Silesia, Katowice, Poland (m-wiewior@tlen.pl)

Background: The RBC rheological properties play an important role in determining blood flow resistance in microcirculation, because they are one of the important determining influences on blood viscosity and are known to be altered in obese patients. Because there are usually sex differences in type of obesity we decided to evaluate rheological properties among male and female patients qualified for surgical treatment of obesity.

Methods: We studied 38 morbidly obese patients (21 females and 17 men) who were qualified for bariatric surgery in our Department. Median age and body mass index (BMI) were among women 43 years (range 19–58) and 47.2 (range 35–66) and among men 46 years (range 24–66) and 51.6 (range 37.6–61.5). The RBC deformability at different shear stresses and aggregation parameters: aggregation index (AI), syllectogram amplitude (AMP) and aggregation half-time (t1/2) were measured by Laser-assisted Optical Rotational Cell Analyser–LORCA. Blood and plasma viscosity measurements were measured by a cone-plate viscometer (Brookfield DV-II).

Results: Whole blood viscosity was significantly higher in obese men in shear rates of 150s⁻¹, 300s⁻¹ and 450s⁻¹ (median: 4.78 mPas versus 4.26 mPas, p=0.002; 4.66 mPas versus 4.02 mPas, p=0.005; 4.42 mPas versus 3.83 mPas, p=0.003). The hematocrit was higher in men group (p=0.027). No differences among obese women and men in age, BMI, plasma viscosity and fibrinogen concentration (2.99 g/l versus 1.27 g/l, p=0.009) were observed. Elongation index of RBC was significantly lower in women than in men in 0.54, 0.97, 1.75, 3.16 and 5.69 Pa shear stresses (median: 0.082 versus 0.094, p=0.008; 0.159 versus 0.171, p=0.032; 0.234 versus 0.266, p=0.024; 0.314 versus 0.343, p=0.021; 0.411 versus 0.445, p=0.041). We did not observe differences in aggregation parameters.

Conclusion: This study showed sex differences in some hemorrheological parameters expressed by increase blood viscosity in obese men and decrease RBC deformability in obese women.