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3RD MAAC

MALAYSIAN
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ANATOMY WITHOUT BOUNDARIES

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3rd Malaysian Anatomical Association Conference

Conference Abstracts



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ABSTRACT

The abstracts presented here were featured at the 8th International Anatomical Sciences and Cell Biology Conference (IASCBC) and the 3rd Malaysian Anatomical Association Conference (MAAC), held jointly on 14–15 August 2025 at the Connexion Conference & Event Centre in Kuala Lumpur, Malaysia. Centered around the theme “*Anatomy Without Boundaries*,” the event brought together global experts in anatomy, cell biology, neuroscience, regenerative medicine, and related disciplines to foster cross-disciplinary collaboration and showcase innovative research in anatomical sciences.

KEYNOTE SESSION

Globalising anatomy: Collaborative efforts for cross-border anatomy medical education and research

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Understanding the development and the structure of the body is essential for health professionals. Anatomy is also a fundamental biomedical science that increasingly contributes to a variety of science as well as health programmes. The discipline of anatomy began with the study of the body at the macroscopic level, gross anatomy, but over the years, various subdisciplines have emerged, and research in these areas has been vital in advancing clinical care.

Recently, there have been growing concerns regarding the shortage of anatomists and the difficulty of recruiting and retaining teachers and researchers in the discipline. Anatomists are now expected to teach across multiple subdisciplines in a variety of diverse programmes while also engaging in research activities. However, a recent survey by the International Federation of Associations of Anatomists (IFAA) has shown that not all anatomists have access to quality resources for teaching, learning, and research. How can we, as a community, address these inequities and support each other to strengthen the discipline of Anatomy? The talk will discuss existing collaborative efforts and explore pathways that could be pursued in the future to increase collaboration and globalise anatomy.

Keywords: Anatomists, international collaboration, mentorship, IFAA

PLENARY 1 SESSION

From cell to systems: Integrating cell biology with anatomical insights

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The cell is the smallest structural and functional unit of the human body. Groups of cells performing a similar function come together to form tissues. In turn, different tissues are organised into organs and organ systems to serve distinct functions in the body. Dysregulated cellular activities and cell behaviour can lead to the development of malignant tumours and other pathological conditions. In this talk, various examples will be presented and discussed to illustrate how knowledge of cell biology can provide anatomical insights into health and disease.

Keywords: cell, cellular activity, cellular biology

PLENARY 2 SESSION

Pioneering change: Cross disciplinary synergies in forensic anthropology

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The modern practice of forensic anthropology is grounded in the quantification of skeletal variation based upon quantitative approaches developed according to theory and method in the parent discipline of physical anthropology. Such morphological variances allow estimates of biological attributes, e.g., age, sex, population affinity, stature, pathology of disease processes, amongst others, that collectively may assist towards the identification of unidentified human remains. The latter is a basic human right under International

A011 | Perception of medical students on the bone library in a medical college

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Introduction: The study of real human bones is essential for medical education, forming the foundation of orthopedics and anatomy. However, limited availability and high costs make access difficult for undergraduate medical and paramedical students. The Department of Anatomy at Bharati Vidyapeeth DU Medical College, Pune, has established a unique facility called a Bone Library to provide students with real bone specimens for study. This study aims to evaluate students' perceptions of the Bone Library, including its usefulness, accessibility, and challenges.

Methods: A cross-sectional, quantitative study was conducted among 230 first-year MBBS and Physiotherapy students who regularly use the Bone Library. A pre-validated, structured online survey, including a Likert scale, multiple-choice, and open-ended questions, was administered to assess usage patterns, perceptions, and accessibility. Data was descriptively analyzed using SPSS version 29.

Results: A total of 96.5% of students found the Bone Library useful for learning anatomy, and 96.1% appreciated the quality of the specimens available. Additionally, 86% of students found it easily accessible, though they provided suggestions for further increasing the time and the number of bones.

Conclusion: The Bone Library is a valuable resource for medical students, enhancing anatomical education by providing access to real bone specimens. Student feedback will help refine and improve the facilities available in the department, ensuring better support for medical learning.

Keywords: osteology, self-study, real bones, medical education

A012 | Optimization of producing whole eyeball sections by routine histology

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Introduction: Obtaining high-quality histological sections of the whole eyeball is challenging since the histological process introduces many artefacts, such as retinal detachment, lens cracking, and collapsed eyeball shape. Hence, this study aimed to optimize

histological techniques by selecting the best fixative, fixation and lens pre-treatment methods.

Methods: Eight mouse eyeballs were divided into six groups and macroscopically assessed. In Phase I, Groups 1–4 underwent fixation with either TB-Fix or 10% neutral buffered formalin (NBF) using immersion or injection techniques. The most effective fixative and fixation methods were then used in Phase II, where Group 5 eyeball was decalcified for 48 hours combined with slurry ice dabbing as the lens pre-treatment, while Group 6 eyeball was immersed in distilled water for the same period, followed by the same lens pre-treatment. The histological qualities of these two groups were then compared to negative controls that underwent only decalcification or no treatment.

Results: Results showed that the immersion of TB-Fix, followed by slurry ice lens pre-treatment, significantly enhances the preservation of ocular tissues. Unlike 10% NBF, ethanol and acetic acid in TB-Fix help prevent tissue shrinkage and preserve morphology better than 10% NBF. Additionally, retinal detachment and damage were minimized more effectively with immersion alone rather than combined immersion and intraocular injection techniques. Furthermore, decalcification caused more cracking, whereas dabbing with slurry ice proved superior for lens preservation.

Conclusion: Although the present study offers a reliable method, further improvement, especially in lens preservation, is needed to produce high-quality eye histology without any artefacts.

Keywords: eye, histology, fixation, lens, retinal detachment

A015 | Anatomical variation of the superior mesenteric artery

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Introduction: The superior mesenteric artery (SMA), a key branch of the abdominal aorta, supplies the mid-gut from the main duodenal papilla to the 2/3 right transverse colon. Anatomical variations in its branches are common and relevant to surgery and imaging. Reporting these variations is essential as new patterns may emerge beyond previously documented cases. This study aimed to describe the anatomical variations of the SMA branching into three cadaveric cases.

Methods: We are presenting three cases of SMA branching patterns that were identified during an educational surgical anatomy dissection to residents in surgery and master's students in clinical anatomy.

Results: In the first case, there was a colo-ileocolic trunk, and the anterior and posterior cecal arteries originated directly from the SMA. The inferior pancreaticoduodenal artery was absent despite a very proximal dissection of the SMA. The jejunal and ileal arteries