

Multislice Computed Tomography (MSCT) of Blunt Abdominal Trauma: Incidental Findings Related to the Genitourinary Tract



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Introduction

MSCT is currently the imaging modality of choice in the assessment of hemodynamically stable patients with blunt abdominal trauma¹.

Widespread use of this modality can reveal incidental findings that vary in their importance, from trivial lesions to findings that may alter the management of these trauma patients².

Aim

To determine the frequency of incidental findings related to the genitourinary tract at MSCT of blunt abdominal trauma

To determine the effect of these findings on subsequent patient's management.

Method

All MSCT examinations done for patients with blunt abdominal trauma from January 2008 to December 2009 were retrospectively reviewed.

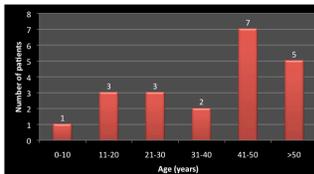
Demographic data and incidental findings related to the genitourinary tract were recorded.

The subsequent management of these findings was reviewed from patient's case note.

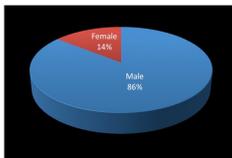
Result

A total of 151 cases were included in the study. Age ranges from 2 to 84 years, mean age was 26.4 years.

Age distribution:



Sex distribution:



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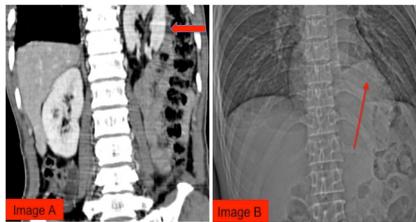
Result

Twenty one (13.9%) out of 151 cases reviewed had incidental findings related to the genitourinary tract. Majority of them (n=18) do not require further immediate intervention. However, in 3 of these 21 patients, immediate further investigations and surgical intervention was necessary.

The incidental findings and its management:

The findings	Nu. of cases	Management
Simple cortical cysts	15	Conservative management
Renal calculus without hydronephrosis	2	No immediate active intervention
Abnormal renal orientation	1	Conservative management
Unilateral hydronephrosis	1	Further investigations and surgical intervention was performed
Bilateral hydronephrosis	1	Further investigations and active intervention was needed
Trans thoracic kidney	1	Further investigation but no active surgical intervention was needed

Case 1:



A 47-year old man involved in a MVA with multiple fractures (bony pelvis and femur) and haematuria. MSCT abdomen showed contusion of urinary bladder with no other injury and no haemoperitoneum.

Incidental findings of transthoracic left kidney (arrow) as seen on coronal reformatted image (Image A). Scanogram (Image B) showed, focal elevation of left hemidiaphragm (arrow). Diagnostic laparoscopy was performed to rule out traumatic diaphragmatic hernia. It confirmed the ectopic kidney with focal diaphragmatic eventration.

Discussion

Simple renal cyst is a common findings (12.4%) in this study, however the incidence is lower compared to previous reported series (24-40%)³. It is well documented that the incidence of simple renal cyst is higher in older patients⁴. As many of our trauma patients were young adults (in comparison with previous studies using MSCT performed for other causes), the lower incidence of simple renal cyst is expected.

In two cases of incidental findings of renal calculi, no obstructive uropathy was seen and no immediate further investigations were needed.

There were three cases of congenital anomaly, one did not require surgical intervention (Case 2), one required surgical correction (Case 3) and one case posed a challenge to the managing team with a co-incidental findings of a rare form of congenital anomalies that was confused with conditions related to the trauma itself (Case 1).

Conclusion: Incidental findings related to the genitourinary tract in MSCT of blunt abdominal trauma were common. However, those requiring a surgical intervention are rare.

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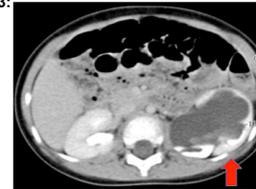
Case 2:



An 18-year old boy who was injured in MVA and had Grade III spleen injury. This patient recovered well after splenectomy.

Incidental findings on MSCT was an abnormally orientated right kidney (arrow) with no evidence of injury of this kidney. His renal function was normal and no active intervention was done related to this finding.

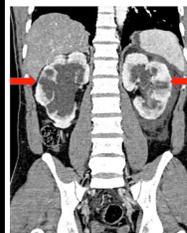
Case 3:



A 3-year-old girl who was previously well, fall from staircase and had haematuria. Urgent CT scan showed no evidence of intra-abdominal injury and no haemoperitoneum.

MSCT showed gross hydronephrosis of left kidney (arrow). Intra-operative findings were rotated left kidney with dilated and thick-walled renal pelvis. PUJ and proximal ureter were narrowed. Distal ureter was normal. Pyeloplasty was performed. DTPA done post pyeloplasty showed good function of both kidneys.

Case 4:



A 43-year old prisoner, being assaulted. MSCT showed Grade II left renal injury.

Incidental findings of bilateral hydronephrosis (arrows). He had generalised thickening of urinary bladder wall causing obstruction of both ureteral orifices confirmed by retrograde pyelogram. HPE of bladder wall revealed an eosinophilic cystitis.