

Pediatric Renal Trauma: A Case Report and Imaging Finding

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Abstract

Pediatric abdominal trauma is a frequent occurrence. Post traumatic renal injuries rarely occur in isolation; instead, they often coincide with multiorgan injuries. We present the case of a 9-year-old child, victim of a road traffic accident. A full body CT was performed showing a right renal hematoma associated with this is a large adjacent hemoperitoneum.

Keywords: Renal trauma; CT; Renal hematoma; Hemoperitoneum

Image Article

Pediatric abdominal trauma is a frequent occurrence, with approximately 5% to 20% of children experiencing blunt abdominal trauma also suffering from renal trauma [1]. Unlike adults, children's kidneys are less secured, being fixed primarily by the vascular pedicle and the ureter, specifically the pelviureteric junction. They are enveloped by Gerota's fascia, their capsule, and a thinner, more pliable layer of perirenal fat. Additionally, due to incompletely ossified lower ribs and the natural disposition of renal lobulations, injury forces may propagate along these planes [2].

Post traumatic renal injuries rarely occur in isolation; instead, they often coincide with multiorgan injuries involving the liver, spleen, closed head, and orthopedic fractures [3].

Renal imaging is typically indicated in scenarios such as penetrating trauma, blunt trauma accompanied by hematuria or hypotension, flank hematoma, or rib or lumbar spine fractures [4]. Furthermore, computed tomography (CT) stands as the preferred modality for assessing hemodynamically stable patients following blunt abdominal trauma [2].

We present the case of a 9-year-old child, with no particular

pathological history, who suffered a closed trauma with cranial and abdominal point of impact following a road traffic accident. Clinically, the patient was conscious, well-oriented in time and space, severe abdominal pain without any external bleeding.

Upon inspection, there were skin bruises on the right flank, and upon palpation, there was generalized abdominal rigidity.

A full body CT was performed showing a right renal formation, oval-shaped, well-defined, obliterating the lower pole of the kidney and reaching the renal pelvis with hematoma density, measuring 58x55x64mm (Figure 1 and Figure 2).

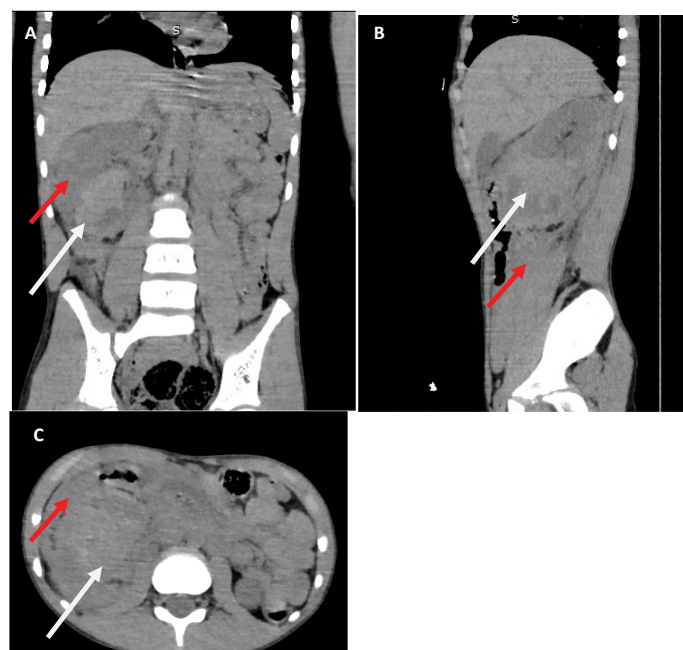


Figure 1: Abdominal CT scan in spontaneous contrast and after contrast agent injection.

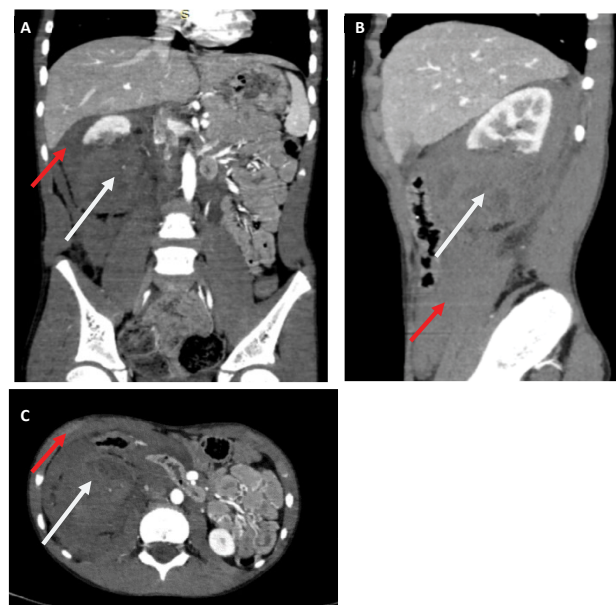


Figure 2: In frontal (A), sagittal (B) and axial (C) reformatted scan showing a right renal hematoma (white arrow) obliterating the lower pole of the kidney associated with hemoperitoneum (red arrow) classified as Grade IV d.

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Associated with this is a large adjacent peritoneal effusion of hematic density, in the right peri-renal area, extending to the peri-hepatic, right GPC and pelvic regions (Figure 1 and Figure 2). There was no urinary extravasation or vascular involvement (Figure 1).

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