Blunt Renal Trauma After Motorcycle Accident: Computed Tomography-Based Management Strategy

Trauma Renal Contuso Após Acidente de Viação: Estratégia Terapêutica Guiada por Tomografia Computorizada

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A 61-year-old male presented with severe abdominal pain and left flank hematoma following a motorcycle accident 20 minutes earlier. He exhibited bradycardia but remained hemodynamically stable. Abdominal computed tomography (CT) revealed a grade IV left renal injury according to the Kawashima classification, which stratifies renal trauma in grades I–V based on the presence of hematomas, and lacerations or collecting system involvement, with subcapsular hematoma and segmental infarction (Fig. 1). A follow-up CT performed one week later confirmed renal integrity, with no pelvic rupture or intra-abdominal fluid, supporting conservative management. The patient remained hospitalized for eight days under close monitoring, with no episodes of hematuria, fever, or hemodynamic instability. He was discharged in good condition, underwent three months of treatment with a double-J catheter, and progressed without complications during follow-up.

Renal trauma accounts for up to 10% of all abdominal injuries, with blunt trauma being the most common mechanism, usually due to road traffic accidents.[1-3] The American Association for the Surgery of Trauma Organ Injury Scale (AAST-OIS), primarily based on CT findings, is essential for classifying renal injuries and guiding therapeutic decisions.[1,3,4] CT is the gold standard for imaging in these cases, offering 93% accuracy and allowing evaluation of parenchymal, vascular, and collecting system involvement.[4,5] The Kawashima classification is widely used in radiology to grade renal trauma based on CT findings, helping to assess injury severity and guide management.[4,5]

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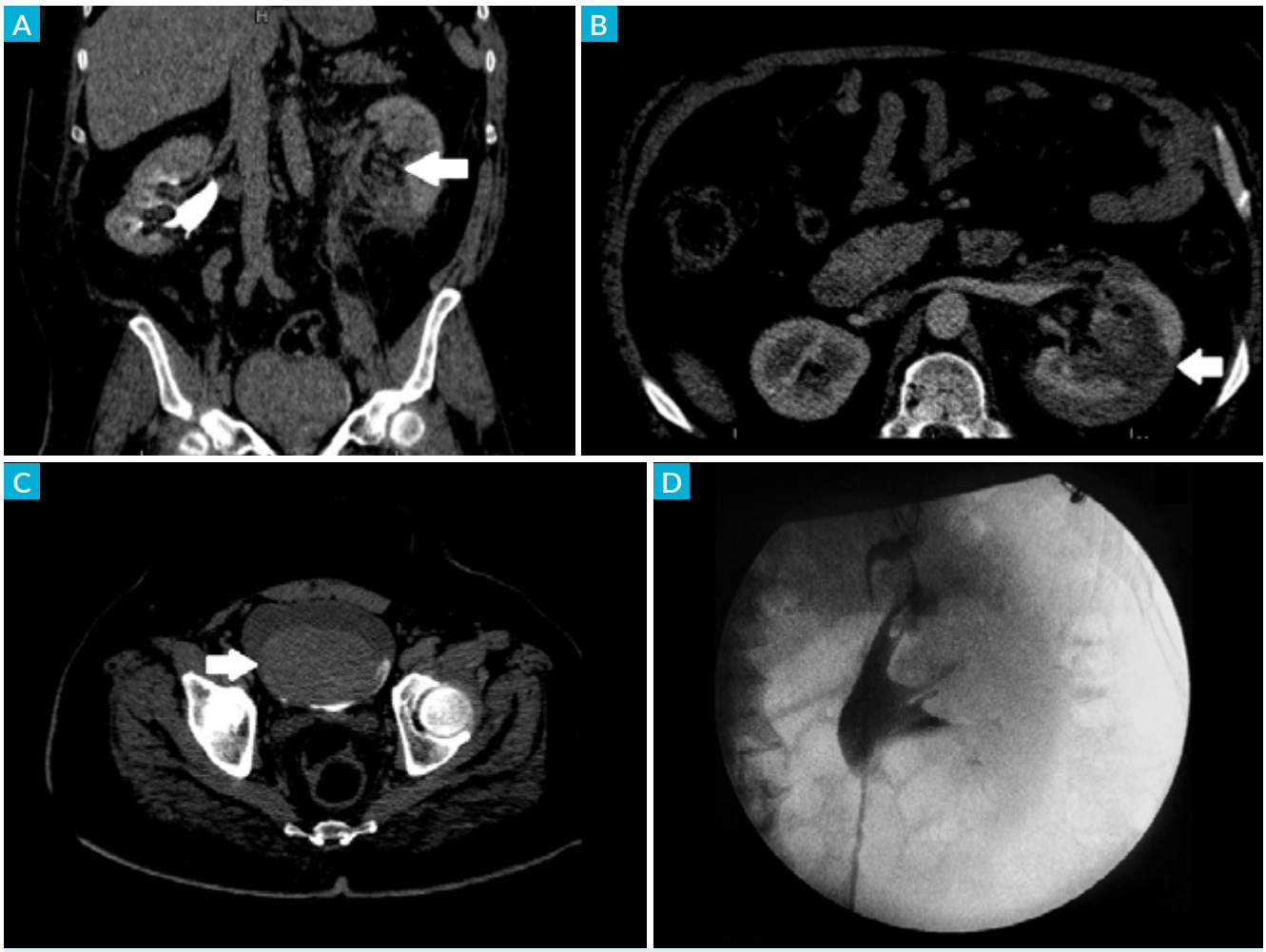

FIGURE 1. **(A)** Coronal contrast-enhanced in the excretory/delayed phase showing absence of contrast concentration and excretion in the left kidney (white arrow). **(B)** Axial venous-phase CT demonstrating an enlarged left kidney, without contrast enhancement, related to subcapsular hematoma and contusional renal oedema (white arrow). **(C)** Axial CT (delayed-phase) showing spontaneously hyperdense content within the urinary bladder, compatible with acute hematic content (white arrow). **(D)** Coronal acquisition during retrograde pyelography for double-J stent placement, without extravasation of intravenous contrast, excluding renal pelvic rupture.

Although routine repeat CT within 48–96 hours is recommended for high-grade injuries, its necessity is debated in hemodynamically stable patients.[4] Ultrasound can be a useful alternative in selected cases, particularly when CT contrast is contraindicated.[6] However, in unstable patients or when ultrasound is inconclusive, CT remains indispensable.[3,4] Other imaging modalities, such as retrograde pyelography or urography, are reserved for specific diagnostic questions.[3] This case illustrates that, even in high-grade renal trauma, conservative management can be safe when hemodynamic stability is preserved, provided it is guided by appropriate CT protocols.

Computed tomography is essential for the initial classification and follow-up of renal trauma, providing detailed information for therapeutic decision-making. In this case, conservative management was effective despite the high-grade injury, highlighting the importance of hemodynamic stability in guiding treatment strategy

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