IMAGES IN EMERGENCY MEDICINE

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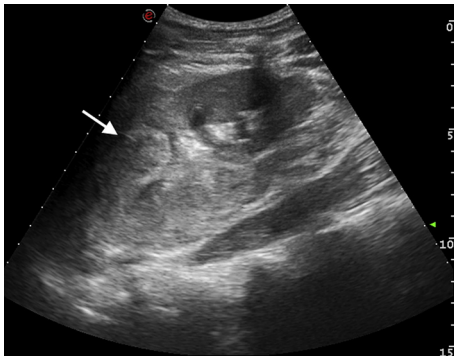

Figure 1. Abdomen ultrasonography was not able to identify a normal structure of the upper pole of the left kidney, which appeared to be replaced by a large hematoma (arrow).

Figure 2. CT with intravenous contrast showed a complete laceration of the superior pole of the left kidney (grade IV according to the American Association for the Surgery of Trauma classification system) (arrow). A large abdominal hematoma surrounded the left kidney (15×9×9 cm) and ran down to the psoas muscle (arrowheads).

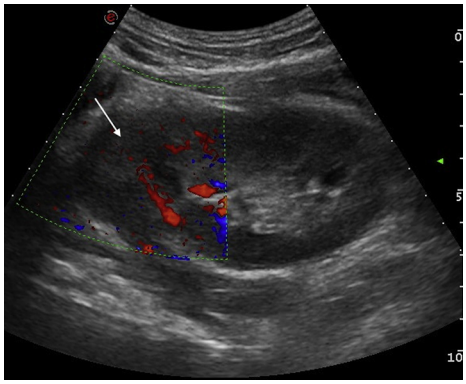

Figure 3. One month after the trauma, color Doppler ultrasonography showed the reappearance of a vascular signal in the upper pole of the left kidney (arrow).

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A 15-year-old previously healthy boy was admitted for a blunt abdominal trauma owing to a cycling crash. On admission he was alert; blood pressure and pulse rate were 145/95 mm Hg and 75 beats/min, respectively. Physical examination result was remarkable for severe left-sided flank pain with guarding. No others injuries were found. His urine was like blood and laboratory tests showed a normal hemoglobin level, at 13.5 g/dL, with hematocrit level 40.9%.

An abdominal ultrasonographic scan showed major left kidney trauma (Figure 1). A computed tomographic (CT) scan confirmed a grade IV renal laceration, according to the American Association for the Surgery of Trauma classification (Figure 2).

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(continued from p. 592)

DIAGNOSIS:

The computed tomography scan demonstrates a grade IV laceration of the left kidney superior pole. Pediatric renal injuries occur in approximately 10% to 20% of blunt abdominal trauma, being mostly low grade. Blows to the flank sustained during sports can result in isolated renal injuries, and remarkably those sustained from biking are more frequently high grade and isolated.[1,2]

Doppler ultrasonography is the first-line diagnostic tool and is recommended for follow-up.[3]

CT with intravenous contrast is the imaging method of choice to determine the severity grade of trauma.

Nonoperative management represents the treatment of choice in children for all hemodynamically stable or stabilized renal injuries, including grade 4 and 5.[1,3-5] A reduced risk of nephrectomy in children with high-grade renal injuries has been shown with a conservative approach compared with that for those undergoing early surgical intervention.[6-8] Therefore, pediatric patients should always be referred to a pediatric surgery unit because of the higher rates of organ preservation compared with that of children admitted to adult centers.[1]

The patient was monitored with serial blood tests and abdominal ultrasonography (Figure 3). He was discharged after 10 days, without need of blood transfusions.

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