

Ureteropelvic Junction Rupture-An Unusual Presentation of Distal Ureteric Calculus

Pradeep M. Kulkarni, Rajiv P. Mukha, Nitin S. Kekre

Departments of Urology and Radio-
diagnosis, Christian Medical College
Vellore, Tamil Nadu, India

Corresponding author:

Pradeep M Kulkarni, MD
Departments of Urology and Radio-
diagnosis, Christian Medical College
Vellore, Tamil Nadu, India.

E-mail: drpradeepmk@gmail.com

Received July 2011
Accepted April 2012

Keywords: kidney pelvis; rupture; ureteral obstruction; ureteral calculi; ureter injuries.

INTRODUCTION

Obstructing ureteric calculus causing perinephric collection, contained by the Gerota's fascia, is seen secondary to forniceal rupture. Here we present a case of distal ureteric 4 mm calculus in otherwise normal kidney in elderly male, presenting clinically as acute appendicitis, secondary to ureteropelvic junction (UPJ) rupture and urinoma outside the Gerota's fascia, in the paranephric space, extending down to right iliac fossa.

CASE REPORT

A 52-year old gentleman, non-diabetic, presented with a 3 day history of right iliac fossa pain and vomiting. Clinical examination was suggestive of localized peritonitis. Urine microscopy showed pyuria and hematuria. He had leucocyte count of 13 600/ μ L and his serum creatinine was 1.7 mg/dL. A working diagnosis of acute appendicitis was made.

Upon preliminary imaging, the kidney ureter bladder (KUB) X-ray showed faint 4 mm radioopaque shadow in the right hemipelvis (Figure 1). The ultrasonography revealed a right mild hydroureteronephrosis (Figure 2A) with a right retroperitoneal perinephric collection up to the right iliac fossa (Figure 2B). The opposite side kidney and bladder were normal. Computed tomography (CT) scan of the abdomen pelvis showed a 4 mm calculus in the right distal ureter with mild hydroureteronephrosis (Figure 3A), ipsilateral perinephric stranding and extravasation of the contrast medium at the level of UPJ seen in delayed films (Figures 3B and 4). Collection was medial to and behind the renal pelvis in the paranephric space

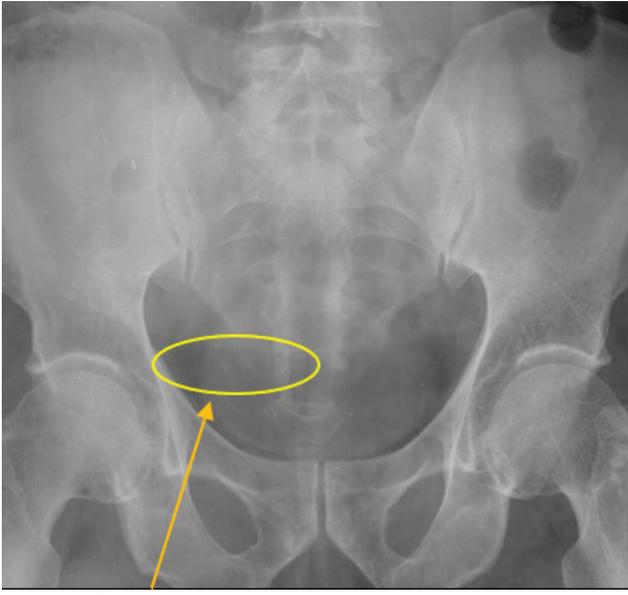


Figure 1. Faint 4 mm radiopaque shadow in right hemipelvis.

of retroperitoneum, anterior to right psoas muscle and was found trickling down behind the ascending colon down to right iliac fossa. There was no contrast medium seen in perinephric space.

DISCUSSION

Reported cases of traumatic rupture of the kidney or ureter usually reflect an underlying renal pathologic condition. The most common underlying causes are hydronephrosis and congenital ureteropelvic junction obstruction (UPJO).⁽¹⁾ It also might occur when the upper third of the ureter is fixed in its position by an ectopic vessel or scars because of previous trauma.⁽²⁾ Spontaneous rupture of the renal pelvis has also been reported.⁽³⁻⁵⁾ Traumatic rupture of the renal

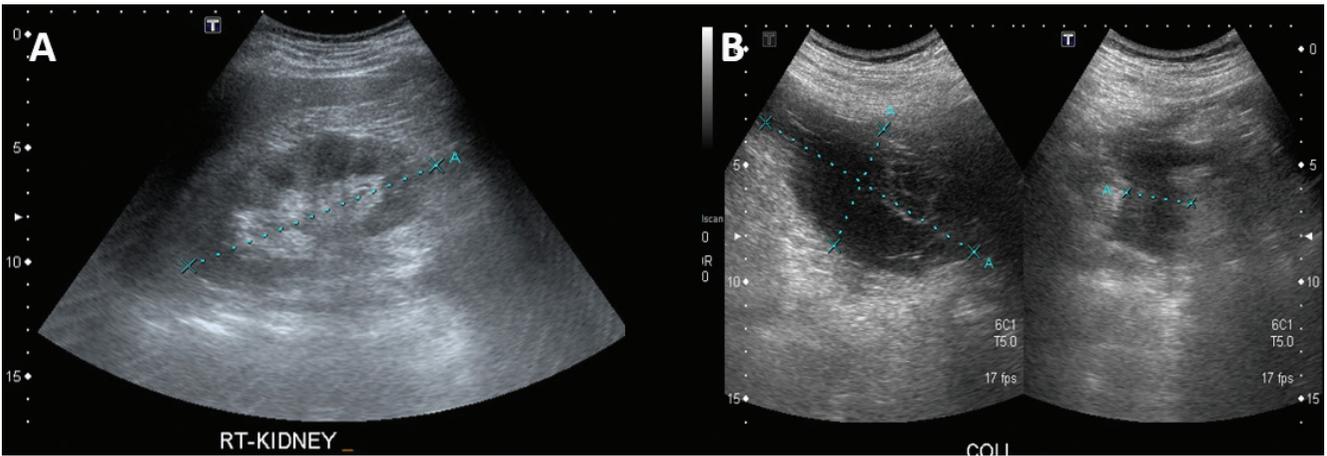


Figure 2. Mild dilatation of pyelocalyceal system upper ureter noted on the right side (A). Collection is noted in right lower abdomen and iliac fossa, appendix is not visualized (B).

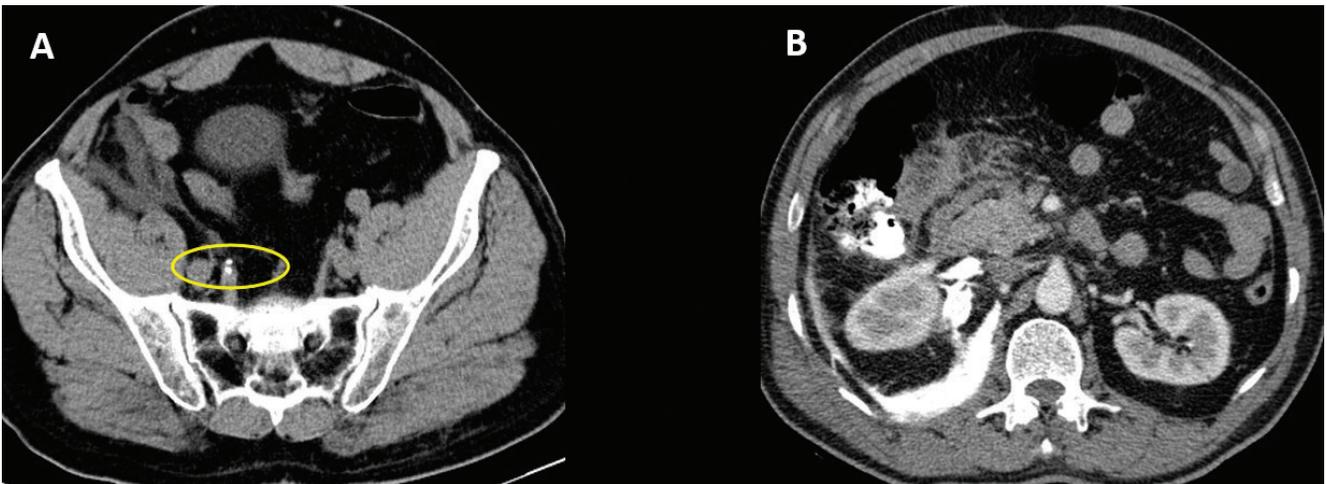


Figure 3. Non-enhanced computed tomography (CT) scan shows a 4 mm radiopaque density in right hemipelvis (A). In enhanced CT scan, delayed films demonstrate contrast material leak in ureteropelvic junction (UPJ) region extending outside Gerota's fascia into the paranephric space (B).



Figure 4. Maximum intensity projection images, in sagittal section, better delineates the site of contrast medium leak outside Gerota's fascia.

pelvis usually occurs in the region of ureteropelvic junction (UPJ), in pediatric patients and more often on the right side.^(2,3) Diagnosis is often difficult because gastrointestinal symptoms may prevail and there are often no urinary symptoms at all.⁽⁴⁾

Ultrasonography could be used as a simple screening tool but is often not accurate enough.^(6,7) In stable patients, contrast-enhanced CT should be performed to define an exact extent of the lesion and to provide detailed information about associated intra-abdominal or retroperitoneal injuries.^(6,7)

Ureteric obstruction resulting in urine leak is commonly due to forniceal rupture where contrast medium is seen collected in perinephric space contained by Gerota's fascia. The above-mentioned case situation was unusual in the presentation of distal ureteric calculus with UPJ rupture in a normal kidney.

CONFLICT OF INTEREST

None declared.

REFERENCES

1. McAleer IM, Kaplan GW, LoSasso BE. Congenital urinary tract anomalies in pediatric renal trauma patients. *J Urol.* 2002;168:1808-10.
2. Hopkins TB, Klein LA. Disruption of the renal pelvis by blunt trauma. *J Trauma.* 1975;15:250-4.
3. Presti JC, Carroll PR, McAninch JW. Ureteral and renal pelvic injuries from external trauma: diagnosis and management. *J Trauma.* 1989;29:370-4.
4. Ashebu SD, Elshebiny YH, Dahniya MH. Spontaneous rupture of renal pelvis. *Australas Radiol.* 2000;44:125-7.
5. Viville C, Biechler M, Cinqualbre J. Closed traumatic ruptures of normal upper urinary tract. *J Urol (Paris).* 1983;89:533-9.
6. Nguyen MM, Das S. Pediatric renal trauma. *Urology.* 2002;59:762-7.
7. Wessel LM, Scholz S, Jester I, et al. Management of kidney injuries in children with blunt abdominal trauma. *J Pediatr Surg.* 2000;35:1326-30.