

CLINICAL IMAGE

Extrarenal pelvis mimicking hydronephrosis: a case for caution

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Case Description

A 73-year-old woman was admitted with hypercalcemia and acute kidney injury. Serum creatinine was 3.04 mg/dL at presentation. CT scan of the chest was obtained to exclude malignancy. In addition to multiple pulmonary nodules, the upper abdominal slices of the scan demonstrated fullness of the left renal pelvis (Fig. 1), suspicious for hydronephrosis. A renal ultrasound was obtained to evaluate this finding, which demonstrated a large hypoechoic mass just outside the renal sinus but with no distension of the calyces or the ureter (Fig. 2). This finding was consistent with extrarenal pelvis. Her renal function improved with intravenous hydration to 0.87 mg/dL over the next few days. A repeat renal ultrasound showed no change in the size of the extrarenal pelvis.

An extrarenal pelvis is a normal anatomical variant that is predominantly outside the renal sinus and is larger and more distensible than an intrarenal pelvis that is surrounded by sinus fat. While the exact incidence is not known, it is estimated to be seen in up to 10% of the population [1]. Extrarenal pelvis can easily be misinterpreted as hydronephrosis, and close attention to detail can help differentiate between these two conditions. Hydronephrosis appears as branching, “interconnected”

Key Clinical Message

Extrarenal pelvis is an anatomical variant that appears as a large hypoechoic mass just outside the renal sinus and can be confused with hydronephrosis, especially on a point-of-care renal ultrasound. Unlike hydronephrosis, it is not associated with dilated calyces, parenchymal thinning, hydroureter, or enlarged kidney per se.

Keywords

Extrarenal pelvis, hydronephrosis, renal ultrasound.

areas of decreased echogenicity that show sonographic evidence of fluid. As the obstruction continues, renal parenchyma becomes compressed with loss of corticomedullary differentiation. On the other hand, extrarenal pelvis is not associated with dilated calyces, parenchymal thinning, or hydroureter. While extrarenal



Figure 1. Abdominal slice of the chest CT scan demonstrating fullness of the left renal pelvis (arrow).

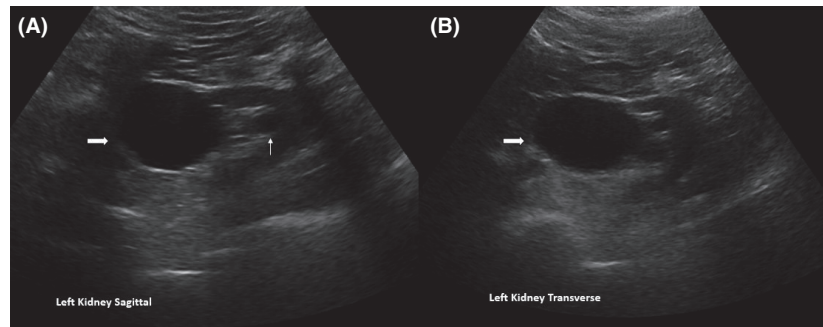


Figure 2. (A and B) Renal sonogram demonstrating a dilated extrarenal pelvis (large arrow) without distended calyceal system. A medullary pyramid (line arrow) can be seen just above the central echogenic portion of the kidney suggestive of preserved corticomedullary differentiation and the absence of compression.

pelvis is asymptomatic in most cases, complications such as infection and stone formation have been reported [2].

Authorship

Both the authors: made substantial contribution to the preparation of this manuscript and approved the final version for submission. AK: acquired the images and drafted the initial version of the manuscript. DB: did the literature search, revised the manuscript for critically important intellectual content.

Informed Consent

Informed consent has been obtained for the publication of this clinical image.

Conflict of Interest

The authors have declared that no conflict of interest exists.

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