Clinical Case Reports

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CLINICAL IMAGE

Renal cyst infection: a diagnostic dilemma

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Key Clinical Message

Cyst infection is a common complication of autosomal dominant polycystic kidney disease. It presents with vague clinical features and imaging findings which make the diagnosis challenging. Imaging findings can be misinterpreted as renal cell carcinoma, and biopsy of the lesion is often required for definitive diagnosis.

Keywords

Biopsy, infection, polycystic kidney disease, renal cell carcinoma.

Case

A 60-year-old man with a history of autosomal dominant polycystic kidney disease (ADPKD) presented with gross hematuria and mild flank pain for 1 week. He was afebrile at presentation. A CT scan of the abdomen was obtained to exclude intracystic bleeding, which demonstrated an incompletely evaluated thick-walled cyst in the

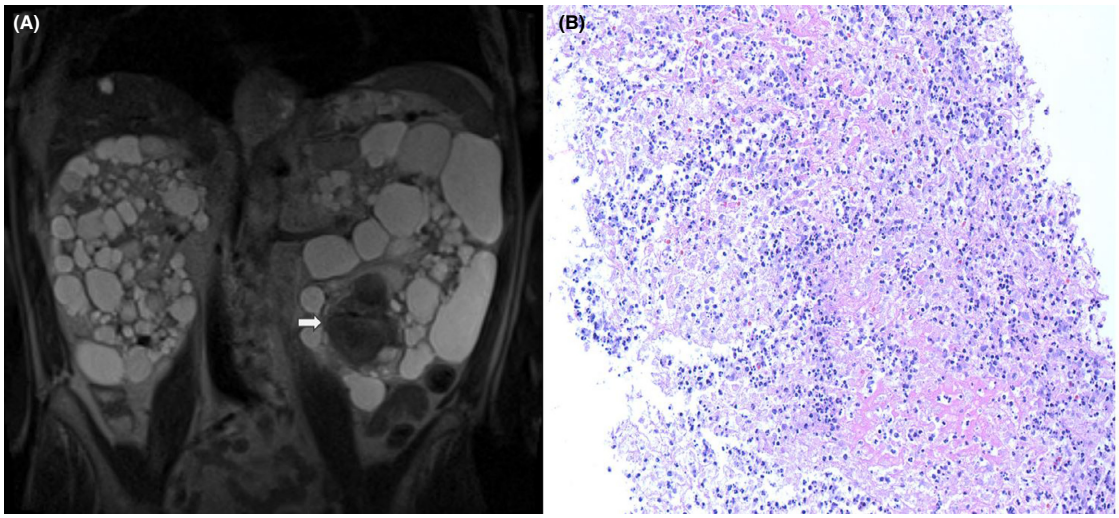

Figure 1. (A) Magnetic resonance imaging of renal mass with no intravenous contrast, demonstrating approximately 5.7 cm × 5.8 cm × 6.6 cm renal mass in lower pole of the left kidney with peripheral nodularity and intermediate T2 signal intensity (arrow) concerning for renal cell carcinoma. (B) Biopsy of the lesion demonstrating necrotic tissue and fragments of inflamed kidney parenchyma with areas of fibrin deposition and no definitive evidence of carcinoma.

inferior pole of left kidney. Magnetic resonance imaging showed ~6.6 cm left lower pole renal mass concerning for renal cell carcinoma (RCC) (Fig. 1A). Biopsy of the lesion showed necrotic tissue with bacterial colonization, without any evidence of malignancy (Fig. 1B). Grocott's methenamine silver stain was negative for fungal organisms. The patient later developed low-grade fever, leukocytosis, and urine culture was positive for *Escherichia coli*. He was treated with cephalexin for cyst infection resulting in clinical improvement.

Cyst infection accounts for significant morbidity in patients with ADPKD [1]. Diagnosis can be challenging given nonspecific clinical features and imaging findings. CT and MRI often demonstrate heterogeneous enhancement of the infected cyst with wall thickening, which can be misconstrued as RCC prompting invasive procedures including nephrectomy [2]. However, given the high risk for development of RCC in ADPKD, it would be prudent to obtain tissue diagnosis when in doubt to resolve this diagnostic dilemma [3].

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.

Authorship

MK: designed and drafted the manuscript, procured the images. XZ: provided the pathology images and pertinent input. AK: attending nephrologist on the case, reviewed, and revised the manuscript critically for important intellectual content.

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