Xanthogranulomatous Pyelonephritis with Bilateral Nephrocutaneous Fistulae

Case Report

A Caucasian woman of 80 years of age was admitted with a 6-month history of discharging sinuses in both lumbar triangles. Three years previously an intravenous urogram carried out for recurrent urinary infection had shown a staghorn calculus in a non-functioning left kidney. Two years later, she presented with a left psoas abscess which was treated with open drainage, and 3 months after this she developed a right psoas abscess which was treated with CT-guided percutaneous drainage.

A sinogram through the left sinus showed a large subcutaneous space communicating with the left psoas space and then to the lower pole of the left kidney (fig. 1). Contrast introduced through the right sinus filled two cavities in and adjacent to the right psoas and then crossed the midline at the L3 level to fill the left renal pelvis and left ureter (fig. 2).

A left nephrectomy was carried out. The kidney was shrunken and a staghorn calculus was found to have eroded through the renal parenchyma and into the left psoas muscle. Histology showed features consistent with xanthogranulomatous pyelonephritis (XPN). Three months after surgery the patient was clinically well with no discharging sinuses.

Discussion

XPN is usually associated with renal calculi and chronic urinary infection. The clinical and radiological features can mimic those of neoplastic disease and it can be misdiagnosed in the clinical setting. Fistula and sinus formation are rare in XPN but are well reported [1, 2]. Malek and Eider [3] graded XPN into three stages based on the extent of involvement of the kidney and its surrounding tissue: stage I (nephric) is a localised disease confined to the renal parenchyma; stage II (perinephric) lesions involve perinephric fat, and stage III (paranephric) lesions extend...
into the perirenal and pararenal spaces and may involve surrounding structures leading to abscess or sinus formation.

The fascial planes around the kidney guide the direction of the expanding lesion. The anterior and posterior layers of the renal fascia subdivide the retroperitoneal tissues on either side of the spine into three potential spaces: the posterior space contains the pararenal fat and the intermediate space contains the kidney, the suprarenal gland and the perirenal fat. The anterior space is more extensive. It is bounded posteriorly by the anterior layer of renal fascia of each kidney and anteriorally by the parietal peritoneum, and it communicates across the midline with the contralateral anterior space. Medially, the anterior layer of renal fascia blends with the connective tissue around the aorta and inferior vena cava. The posterior layer fuses with the psoas fascia.

In this patient we believe that the spread of the XPN disease process through the anterior space resulted in bilateral psoas abscesses which pointed in both lumbar triangles to produce the nephrocutaneous fistulae observed. The accepted treatment of choice is nephrectomy with excision of the fistulous track.
