Pseudotuberculous pyelonephritis in a patient with autosomal dominant polycystic kidney disease undergoing long-term haemodialysis

Sir,
There have been several reports describing an unusual form of chronic pyelonephritis with nephrolithiasis resembling tuberculosis [1–4]. All the reported cases were characterized by nephrolithiasis, recurrent pyelonephritis, and caseating granuloma with negative bacteriologic evidence for *Mycobacterium tuberculosis*. However, pseudotuberculous
pyelonephritis in autosomal dominant polycystic kidney disease has not previously been reported in the English literature. We describe here such a case.

Case. A 58-year-old female with ADPKD on intermittent haemodialysis for 6 years was admitted with complaints of left abdominal pain, palpable masses in the abdomen, poor appetite and weight loss. Abdominal CT scan showed multiple cystic lesions of variable size in both kidneys and the liver. There were multiple renal stones and irregularly thickened cyst walls with enhancement, suggesting infected cysts and marked hydronephrosis with cortical thinning in left kidney (Figure 1A). A Ziel-Neelsen stain of the urine was negative. Urine cultures were positive for *Escherichia coli*. The patient was initially treated with a course of intravenous cefpiramide 2 g/day, and aztreonam 2 g/day for 3 weeks. Because of continuing weight loss, left abdominal pain with tenderness and a persisting huge palpable mass in the left abdomen, a left nephrectomy was performed. The gross specimen disclosed 21 × 11 × 10 cm sized multiple cystic masses filled with necrotic material and fluid. Histologic examination showed chronic granulomatous inflammation with central caseous necrosis and Langhans’ giant cells resembling renal tuberculosis (Figure 1B). The culture of cystic aspirates showed *E. coli*. Tissue culture and repeated polymerase chain reaction (PCR) searches for *M. tuberculosis* were negative. Three weeks after left nephrectomy, the patient was discharged with some symptomatic improvement.

Discussion. The disease entity named ‘pseudotuberculous pyelonephritis’ may be debatable and has yet to be defined more precisely. The reason for the development of this unusual entity of granulomatous inflammation is unknown. It has been suggested that its pathogenesis is related to the presence of calcium oxalate crystals which could be secondary to lithotripsy [3]. In the present case, there were multiple renal stones in both kidneys, and, although the composition of the stones was not defined, an infectious aetiology cannot be excluded because infections commonly complicate nephrolithiasis and promote the growth of stones. However, the patient did not have lithotripsy at any time. Other suggested aetiologic factors include urinary tract infection and hydronephrosis [1]. In our patient, there might have been clinically silent episodes of urinary tract infection at some stage and the CT scan showed hydro nephrosis in the left kidney. Light microscopy examination did not reveal xanthoma cells or Michaelis Guttman bodies, excluding the xanthogranulomatous pyelonephritis and malakoplasia, respectively. Thus, while the exact cause of the caseating granuloma in this patient remains unclear, it may have been associated with the presence of nephrolithiasis and recurrent chronic pyelonephritis, in accordance with cases previously reported by others [1–4].

*Mycobacterium tuberculosis* infection is more than 10–15 times more frequent in chronic haemodialysis patients than in the general population [5]. All patients with chronic renal failure, and especially those on long-term dialysis, should be considered at high risk of mycobacterial infection. Because repeated cultures and PCR tests for tuberculosis were all negative, and *E. coli* was cultured in the urine and cyst aspirates, it is possible to exclude the diagnosis of renal tuberculosis. In areas where tuberculosis is endemic, physicians may be inclined to start anti-tuberculous medication on the basis of histological findings without microbiological evidence of tuberculosis. The use of the disease entity named ‘pseudotuberculous pyelonephritis’ may require more clinicopathological correlations; however, awareness of the possibility of pseudotuberculous pyelonephritis associated with nephrolithiasis and recurrent chronic pyelonephritis should alert the physician to diagnose tuberculosis more cautiously, and therefore avoid treating a patient who is often on numerous other medications, with antituberculous therapy, which has its own potential side-effects.

1Department of Internal Medicine  
2Department of Urology  
3Department of Pathology  
Chonnam National University  
Medical School  
Kwangju  
Korea


Fig. 1. Abdominal computed tomography showing renal stone in right kidney and irregularly thickened cyst walls with enhancement in left kidney (arrow) suggesting infected cysts (A), and light microscopic appearance of caseating granuloma (B). (HE × 40).