Acquired Cystic Disease Mimicking Polycystic Kidney Disease in a Long Term CAPD Patient

Acquired cystic disease of the kidney (ACDK) is a condition of unknown etiology occurring in long term dialysis patients. In most cases the cysts are small, although cysts as large as 5.0 cm in diameter have been described (I). We report the case of a very long-term CAPD patient in whom ACDK was so dramatic it resembled severe polycystic kidney disease.

A 36-year-old man developed urinary abnormalities at the age of 9. There was no family history of renal disease or unexplained early deaths. A renal biopsy in 1966 demonstrated interstitial and periglomerular fibrosis. Ninety percent of the glomeruli were completely fibrosed and hyalinized. A diagnosis of chronic glomerulonephritis was made. The patient progressed to end-stage renal disease (ESRD) and was started on CAPD in 1981. An ultrasound performed at that time showed the right kidney to be small with an abnormal echo pattern, compatible with chronic renal disease. No comment was made about the left kidney. However, a repeat ultrasound in 1982 showed the right kidney to be 7.5 cm in length and the left kidney to be 5.7 cm in length. Both kidneys were reported to have increased echogenicity.

The patient continued on CAPD until 1993 when he developed peritonitis, which did not resolve with antibiotics. Because of continuing abdominal discomfort a CT scan of the abdomen was performed (Figure 1). The kidneys were now massively enlarged and filled with cysts of various sizes, resembling advanced polycystic kidney disease.

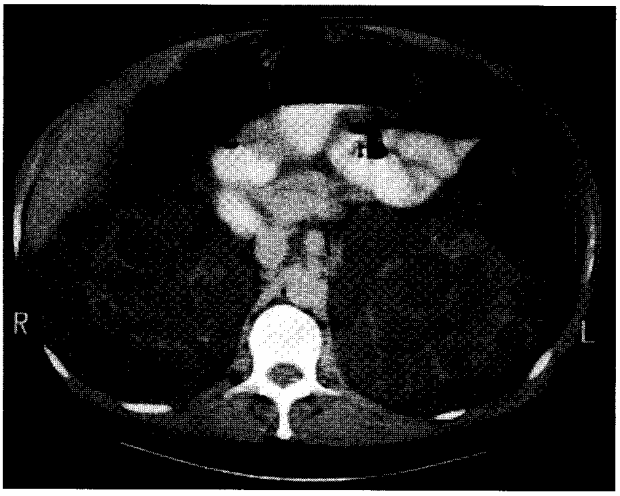

Figure 1 — Abdominal CT scan of the patient taken after 11 years of CAPD. Both kidneys are massively enlarged and virtually replaced by multiple large and small cysts.

DISCUSSION

Acquired cystic disease was initially described in hemodialysis patients, and was originally thought to be unique to this modality. However, this complication has since been reported in patients with renal failure who have never undergone dialysis and in patients who have received only peritoneal dialysis (2,3).

Acquired cystic disease of the kidney has been reported in approximately 200 CAPD patients (4). The etiology is unknown. although it is postulated that a retained uremic toxin acts as ¿ growth or proliferative factor and stimulates cystic transformation in the kidney (5). The prevalence of ACDK in peritoneal dialysis patients ranges from 3% to 100% with a mean prevalence of 41% (4). The variability is likely the result of the method used to diagnose this condition, i.e., ultrasound versus CT scan versus *past martem* examination.

Similar to patients with autosomal dominant polycystic kidney disease (ADPCKD), the cysts in ACDK carry the potential for malignant transformation, infection, and hemorrhage. The prevalence of renal neoplasm depends on the method of detection. A recent review noted a prevalence of 1.3% for renal malignancy in a population with ACDK. which was twice as great as the risk in dialysis patients without cystic transformation (6,7). Only rarely are these neoplasms metastatic (7,8). While there have been reports of hemorrhage into the cysts of peritoneal dialysis patients with ACDK, these occur less often than in hemodialysis patients because of the absence of regular anticoagulation (9, 10).

In summary, we present a young man in whom ACDK developed over 11 years of peritoneal dialysis. During this time, the kidneys transformed from bilaterally small, echogenic structures into massively enlarged cystic kidneys that looked identical to polycystic kidney disease. This case emphasizes that long-term peritoneal dialysis patients are susceptible to cystic transformation and, furthermore, the acquired cysts can be very large and multiple and mimic adult polycystic kidney disease.

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