Gross left-sided hydronephrosis in a renal transplant recipient

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Case report

A 58-year-old woman was admitted from the transplant clinic with a 2 month history of nausea, vomiting and early satiety, increasing left flank discomfort and backache.

She had reached end-stage renal failure 7 years earlier when a renal biopsy showed her to have globally sclerosed glomeruli and a scarred interstitium of unknown origin. She commenced continuous ambulatory peritoneal dialysis and received a cadaveric renal transplant 3 months later in 1990. The graft functioned immediately but she had an episode of biopsy-proven pyelonephritis on the tenth day. She then developed a urinary leak and was shown, by antegrade pyelography, to have a ureteric fistula communicating with the skin, and subsequently necrosis of the ureter and lower pole of transplant kidney. The lower pole of the kidney was removed and a pyeloureterostomy was carried out, with mobilization of the left native ureter and anastomosis to the graft pelvis, without native nephrectomy. The hydronephrosis has again gradually re-accumulated, but not sufficiently so as to resolve [1,2]. The procedure corrected her urinary leak, and on discharge her creatinine was 130 μmol/l. She had remained well on cyclosporin, azathioprine and prednisolone but with gradual deterioration in graft function to a creatinine of 250 μmol/l in mid-1997.

On this admission she was found to have a large mass in the left hypochondrium extending down into the pelvis. CT scan (Figure 1) demonstrated a large fluid-filled mass arising from the left native kidney, consistent with a hydronephrosis. The surrounding bowel was compressed away from the mass. The retroperitoneal midline structures were shifted to the right, and the hydronephrosis descended down to the level of the fifth lumbar vertebra. A pigtail catheter was inserted, which drained over 4500 ml of fluid in the next 24 h. Her clinical signs resolved, and a week later (Figure 2) a repeat CT scan showed complete resolution of the hydronephrosis.

Discussion

A left-sided native hydronephrosis secondary to ligation of the ureter is an unusual complication of an infrequently required surgical procedure in transplantation. This patient had residual renal function and a good urine output at the time of her transplant. The subsequent ureteric surgery led to an iatrogenic obstructive uropathy in a still-functioning native left kidney. The hydronephrosis must have accumulated rapidly at first, and then more slowly as intra-pelvic pressures rose, with eventual destruction of functioning renal tissue. She presented with symptoms of impaired gastric emptying, in this case secondary to compression by her mass. With drainage, she had complete resolution of her symptoms. The hydronephrosis has again gradually re-accumulated, but not sufficiently so as to cause symptoms.

A study of 23 patients from London undergoing this procedure, again without native nephrectomy, was reported in 1991 [3]. All patients did well, with no complications reported on leaving the native kidney in situ. No information on residual renal function or time on dialysis was given. Thus, hydronephrosis can occur in native kidneys that still have some function.

References

Fig. 1. CT scan showing large fluid filled mass arising from left kidney. Note compression of surrounding bowel.

Fig. 2. Repeat CT scan showing resolution of the hydronephrosis. The nephrostomy tube is visible in the renal pelvis.