Upsala J Med Sci 90: 115–118, 1985

Management of Hydronephrosis in a Kidney Transplant Patient

Case report

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ABSTRACT

A case of hydronephrosis in a transplanted kidney is described. The condition was corrected at emergency operation performed because of complication during insertion of a nephropyelostomy catheter. A pyeloplastic technique was used to solve the problem.

INTRODUCTION

Urologic complications after renal transplantation have occurred in all published series (1,2). Emergency surgery frequently has been required to save the kidney and the patient (3). Necrosis of the ureter and leakage of urine are most common, but late ureteral stenosis leading to hydronephrosis of the transplanted kidney is not unusual (3). Corrective surgery has consisted mostly of new anastomosis to the bladder or ureteropelvic anastomosis to the patient's own ureter. In the case here presented, another pyeloplasty technique proved to be most suitable for correcting ureteropelvic obstruction.

CASE REPORT

A 56-year-old man with uraemia due to chronic glomerulonephritis received a cadaver kidney transplant in May 1983. Kidney function began 8 days postoperatively and the serum creatinine fell to 200 μmol/l. In the early postoperative period there was slight suspicion of urinary obstruction which, however, was contradicted by antegrade pyelography. During the following months the serum creatinine values slowly rose and, despite antibiotic prophylaxis, a persistent urinary infection appeared.

Two months after transplantation an intravenous pyelography disclosed gross hydronephrosis with no filling of the ureter (Fig. 1). Percutaneous nephropyelostomy was tried in an attempt to relieve the condition, but during this

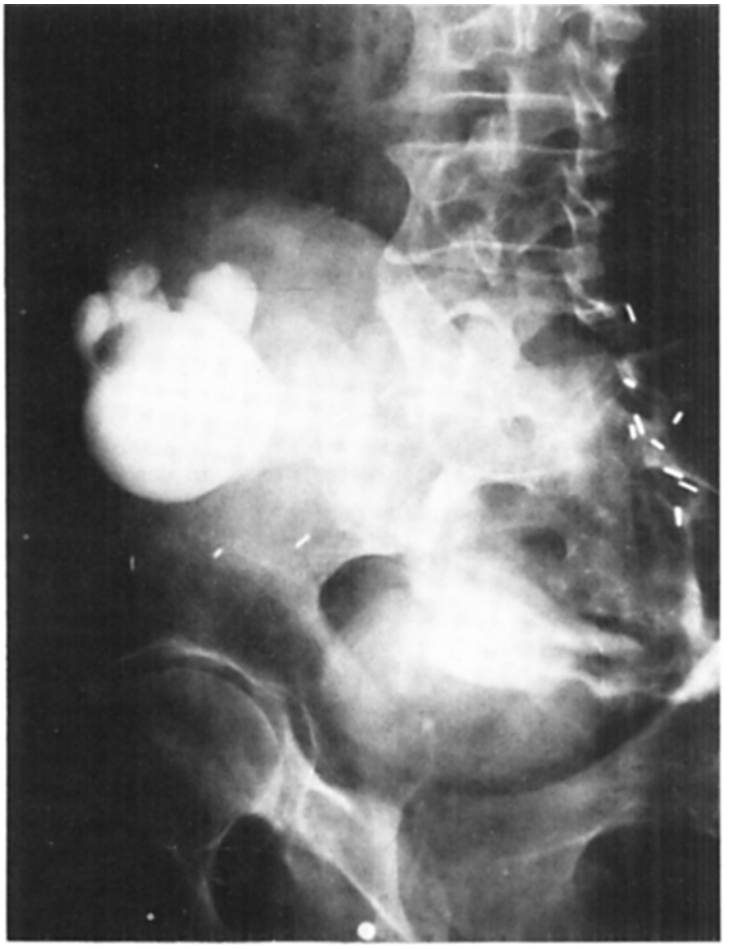

Fig. 1. Intravenous pyelography showing the hydronephrosis

procedure perforation of the peritoneum occurred and contrast medium and urine escaped into the peritoneal cavity. The patient experienced sharp abdominal pain and after about two hours showed signs of sepsis. Garamicin and cortisone were given and the patient was immediately taken to the operating room.

Surgical exploration revealed typical ureteropelvic obstruction with high insertion of the ureter in the pelvis and a fibrotic ring at the ureteropelvic junction. The appearance was that of classic true hydronephrosis. With careful dissection and a non-dismembered pyeloplasty technique ad modum von Lichtenberg (4), the arterial supply to the renal pelvis and the ureter could be preserved and a broad junction created between these structures (Fig. 2). The postoperative course was uncomplicated and the patient was fit to leave hospital 20 days

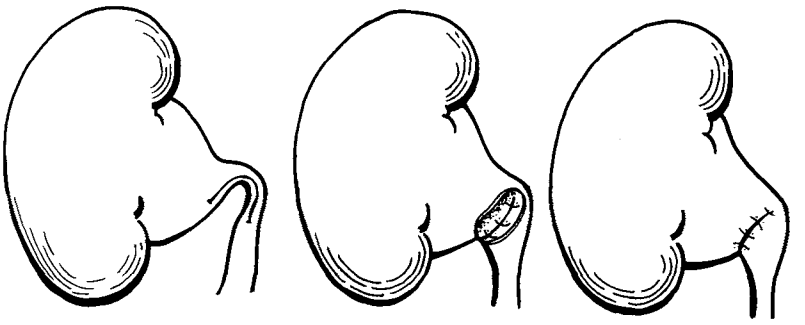

Fig. 2. Schematic presentation of the hydronephrosis, the plastic operation and the anatomic result

after the operation. The serum creatinine was 490 µmol/l at the time of operation and 220 at the time of discharge. During a 12-month observation period there have been no signs of recurrent hydronephrosis (Fig. 3) and the serum creatinine is still about 200 µmol/l.

DISCUSSION

All kidneys used at our transplantation centre are carefully inspected before use. Although in this case there was no suspicion of primary hydronephrosis during the transplantation procedure, obstruction may be extremely difficult to recognize when the renal pelvis is empty. We believe that in this case a functional obstruction led to incompetence in the polyuric phase after kidney transplantation. The blood supply to the ureter comes from the renal artery. A conventional Hynes-Anderson pyeloplasty could therefore have been highly dangerous or even contraindicated. In suitable cases a non-dismembered technique may be used to relieve ureteropelvic obstruction. It is a relatively minor procedure in a serious acute situation.

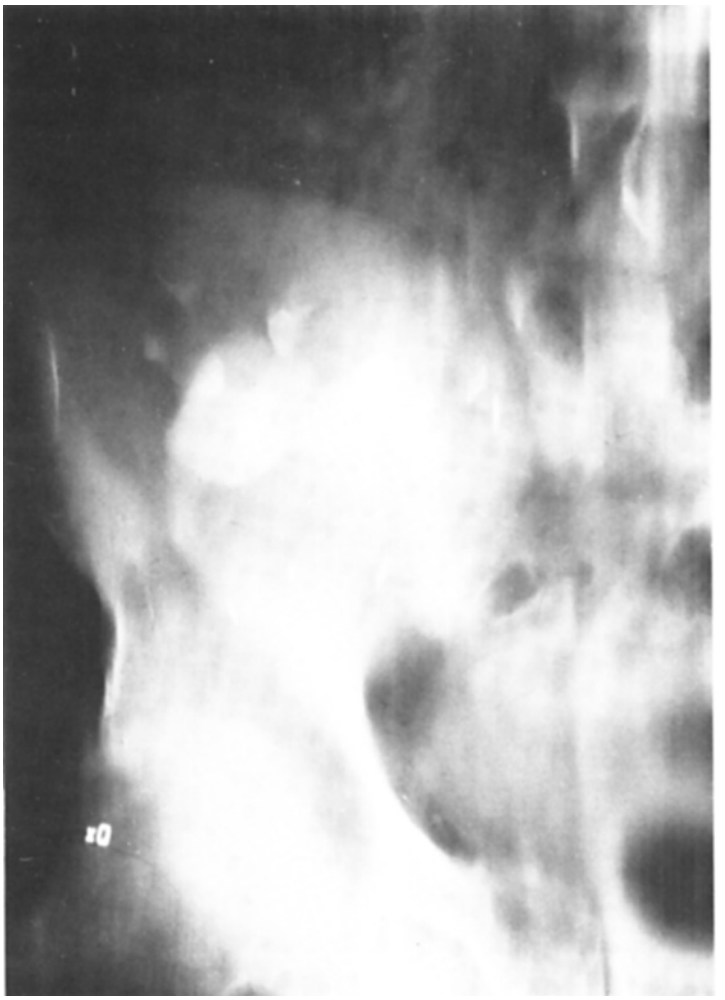

Fig. 3. Follow-up urography - no signs of obstruction

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