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Autotransplantation of a Kidney Due to Retroperitoneal Fibrosis

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Key Words: Renal autotransplantation, retroperitoneal fibrosis.

Renal autotransplantation offers specific advantages in severe renal trauma, extensive ureteral loss and complicated renovascular disease. This approach has become the treatment in each of these conditions, including the option to perform extracorporeal repair of the kidney if necessary. While renovascular disease is presently the most common indication for autotransplantation, this remains an excellent method of treatment for patients with extensive ureteral loss (1). We herein report a case of ureteral obstruction due to retroperitoneal fibrosis, managed successfully by renal autotransplantation.

Case Report

A 28-year-old man with a history of Ulcerative colitis was operated on due to an acute abdomen in an emergency hospital. On exploratory laparotomy, he was found to have multiple perforations on the right side of the colon and he underwent a right hemicolectomy. After the operation in the early period, he experienced no complications. Four months after his discharge from the hospital the patient was readmitted with pain and swelling on the right flank. The USG showed severe hydronephrosis of the right kidney. In addition, intravenous pyelograms (IVP) showed high-grade hydronephrosis due to ureteral obstruction (Figure 1). The right kidney and ureter were explored immediately. Right ureterolysis, placement of the ureter in the peritoneal sheet and right nephrostomy tube insertion were performed. A biopsy of the surrounding scar tissue revealed retroperitoneal fibrosis. After three weeks, IVP again revealed ureteral obstruction. He was readmitted



Figure 1. The preoperative IVP of the patient shows high-grade right ureteral obstruction from extrinsic compression.

for possible autotransplantation. An angiogram showed a single right renal artery. During the operation, because of prior surgical dissection, the kidney was approached through a thoraco-abdominal incision and mobilized with its surrounding Gerota's fascia. The renal artery was carefully dissected and the vein was removed with a small portion of the caval vein patch. The kidney was removed and cooled with eurocollins solution prior to reimplantation. While the flank incision was being closed, the kidney was prepared extracorporeally. The patient

was then placed in the supine position and a right lower quadrant curvilinear incision was made. The right kidney was autotransplanted into the ipsilateral iliac fossa. The renal artery was anastomosed end-to-side to the right external iliac artery, and the renal vein to the external iliac vein. Urinary continuity was restored by a direct splinted anastomosis of the proximal ureter to the bladder and a 5F, 12 cm stent was left in the ureter. Three weeks later the stent was removed cystoscopically. The postoperative course was uneventful, and an isotope renal scan demonstrated excellent perfusion and function of the autotransplant. IVP at 3 months showed good function of the transplanted kidney in the right iliac fossa.

Renal autotransplantation was performed successfully for the first time in 1963 on a patient with severe ureteral damage (2). Bodie et al. reported the long-term results in 23 patients who underwent renal autotransplantation for extensive ureteral injuries, and were followed up for up to 14 years (3). Subsequently, this procedure has been employed in the treatment of various urologic disorders, including renal artery disease, severe ureteral injury and renal malignancies. However, there has been a reluctance to perform autotransplantation in patients with retroperitoneal fibrosis, since the fibrotic process often produces ureteral obstruction and consequent renal failure. Idiopathic retroperitoneal fibrosis occurs predominantly in men and results in some form of renal failure in 75% of patients (4). A wide variety of inflammatory, infective and neoplastic conditions can result in the secondary form and it is essential to look carefully for an underlying neoplastic

condition in all cases (5). The classic triad of medial deviation of ureters, ureteral narrowing at L4-5 and proximal hydronephrosis is usually seen in high-dose IVP (6). The preoperative evaluation of these patients should also include a computerized tomography scan to determine the extent of retroperitoneal and pelvic fibrosis, and inferior venacavography to document pelvic venous drainage (7). Although ureterolysis is generally effective, ureteral injury or reobstruction have occurred in some patients. Sometimes insufficient ureteral length problems may arise when re-exploration is necessitated by recurrent ureteral obstruction (8). While renal autotransplantation is more technically complicated in such cases, it can, nonetheless, be performed successfully even with complete occlusion of the inferior vena cava (9).

To our knowledge, to date 15 patients who underwent successful renal autotransplantation for retroperitoneal fibrosis have been reported in the English Language literature. Some authors have also advocated corticosteroids for adjunctive therapy in the idiopathic form (9). In conclusion, we believe that renal autotransplantation should be viewed as the treatment of choice for patients with complicated retroperitoneal fibrosis.

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