

Ileal Ureteral Replacement in a man with Studer Pouch

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Abstract

Use of a bowel segment for ureteral replacement is a reliable and a feasible procedure with satisfactory results. We present a patient with a complete left ureteral necrosis due to infection; with an abscess formation in the retroperitoneum after a radical cystoprostatectomy and Studer pouch operation.

Introduction

Many techniques have been described to repair a shortened ureter. This problem may be due to a tumour, retroperitoneal fibrosis or stenosis.¹ It may also develop secondary to trauma or iatrogenically.² Surgical alternatives include psoas hitch, Boari flap and transureteroureterostomy.³ Sometimes a segment of a bowel may be required to solve the problem. We present a patient with left ureteric necrosis after a radical cystoprostatectomy and Studer pouch operation done for a muscle invasive bladder cancer.

Case Report

A 65 year old man who had undergone a radical cystoprostatectomy with a creation of a Studer pouch was admitted with left hydronephrosis which developed one year after his surgery. He went into acute renal failure after the operation that lasted for eight weeks, creatinine levels between 2.5 and 3 mg/dL. During follow up urinoma was noticed below the left renal lower pole. It was drained and a nephrostomy tube was placed. After removal of the

nephrostomy tube, recurrent hydronephrosis and abscess formation was encountered in the same location. The



Figure 1: Antegrade pyelography on postoperative day 7.

nephrostomy tube was reinserted and abscess was drained percutaneously. A complete ureteropelvic obstruction was seen through antegrade pyelography. Patient was given antibiotics for about six weeks for concomitant methicilline resistant staphylococcus aureus urinary tract infection. A ureteropyeloplasty was scheduled but at the time of exploration, no ureteric tissue could be identified, despite a distended left renal pelvis ending with fibrotic tissue at its ureteric end. After the resection of a 30 cm ileal segment, proximal end was anastomosed to the distended renal pelvis whereas distal end was attached to a formally created chimney portion of the Studer pouch. Methylene blue solution was instilled through the nephrostomy tube and no signs of extravasation were noted at the time of surgery. Additionally, antegrade pyelography obtained on postoperative day 7 showed no signs of extravasation. Nephrostomy tube was then removed (Figure 1 & 2).



Figure 2: Antegrade pyelography on postoperative day 7.

Creatinine level was stabilized around 2.5 mg/dL and the patient remained disease-free for sixteen months after his last operation.

Discussion

Ileal ureteral replacement is one of the most

common procedures done for the substitution of long ureteral segment losses. This procedure can be performed either by open surgery or laparoscopically.⁴ Preoperative azotaemia is one of the risk factors for ureteral replacement and when using an intact ileum may especially cause bacterial infection, electrolyte absorption and mucous secretion. These factors may cause worsening of renal functions.^{2,5,6} Chung et al. reported three patients with worsening azotaemia who had pre-procedure serum creatinine levels greater than 2 mg/dL. Tailoring the ileum to reduce its diameter can overcome this problem. Kato et al. reported that the ileo-psoas tunnel technique is one of the options for the proximal anti-refluxing mechanism to prevent renal dysfunction.⁷ The creatinine levels in our case remained within normal limits before radical cystoprostatectomy and the creation of Studer pouch, but the creatinine levels went up to 2.5 mg/dL after creating the Studer pouch by using 60 cm. of ileum. Since our patient had a 60 cm length of ileal segment interposed within the urinary tract, we believed that using an additional ileum would not further deteriorate renal function. In accordance to our expectation, renal functions including BUN, serum creatinine and electrolyte levels remained the same after the second ileal interposition operation.

Conclusion

There are many techniques for the substitution of a shortened ureter. Ileal ureter replacement is one of the most effective techniques used for ureteral replacement. Although, pre-operative azotaemia is a common condition that may be a contraindication to this kind of surgery, it was not an absolute contraindication in our case. Ileal ureteric substitution can safely be done on patients with elevated serum creatinine levels after previous surgical procedures, where intestinal segments are interposed within the urinary tract.

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