


Transureteroureterostomy for non-urolologic pelvic malignancy: A case report

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Abstract

The involvement of the ureter from a pelvic mass requires meticulous handling after resection of the invaded segment. The type of ureteral reconstruction depends on the location of the tumor and the length of the residual ureteral segment. Further, the type of reconstructive technique is also decisive in the patient's life quality. We report a case with recurrent recto-sigmoid cancer whose tumor mass also invades the left ureter.

Keywords: Pelvic mass; ureter; ureterostomy; transureteroureterostomy

INTRODUCTION

Surgery for pelvic malignancies including primary or recurrent colorectal cancer, ovarian cancer, and retroperitoneal tumor is usually often difficult when surrounded structures such as ureter, bladder and sexual organs genitals are involved. To perform curative surgery with negative tumor margins, resection of the invaded ureter is sometimes mandatory. Uretero-ureterostomy, ureteroneocystostomy, ureterosigmoidostomy, ureterostomy with an ileal conduit, and transureteroureterostomy (TUU) are several options for reconstruction (1,2). The type of ureteral reconstruction depends on the location of the tumor and the length of the residual ureteral segment (3,4). We report a case with recurrent recto-sigmoid cancer whose tumor mass invades the left ureter.

CASE REPORT

A 41-years-old male patient was admitted with complaints of abdominal distention and rectal bleeding 12 months ago. Colonoscopy detected a rectal mass beginning at the seventh cm from the anal verge. The rectal mass obstructed the lumen and did not allow to passage of the colonoscope. Abdominal computerized tomography

revealed a rectal mass 6cm in size and mild dilatation in small bowel segments due to tumor obstruction. It was decided to perform surgery and the patient underwent low anterior resection. The patient's postoperative course was uneventful and he was discharged on the 6th postoperative day. Histo-pathological examination revealed well-differentiated adenocarcinoma invading the serosa with negative proximal and distal surgical margins. Three of 25 resected lymph nodes were positive. The patient received adjuvant chemotherapy, Six months later. The patient was placed on adjuvant chemotherapy. However, on the sixth postoperative month, a recurrent rectal tumor invading the left ureter occurred and he was referred from medical oncology for surgery. with a recurrent rectal tumor that also invades the left ureter (Figure 1). After the tumor council meeting, it was concluded to surgery. During the operation, the tumor mass was resected with re-low anterior resection. However, the distal part of the left ureter was un-block resected within the specimen. The remained part of the left ureter was too short for an ureteroneocystostomy. Thus, we decided to perform TUU. After creating a retroperitoneal tunnel, the left ureter was passed through this tunnel. Following a

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Double J stent placement into the ureter, an end-to-side anastomosis using 4/0 absorbable interrupted sutures was created (Figure 2). The patient's postoperative course was uneventful and he was discharged on the 7th postoperative day. The histopathological exam revealed recurrent adenocarcinoma with negative tumor margins. Six weeks later, an ascending urethrogram was performed which showed no leak or a stricture formation at the TUU anastomosis. Thus, the Double J stent was removed (Figure 3). The patient receives now chemotherapy and is under follow-up. The patient is now in the 6th postoperative month and continues to receive chemotherapy. His urea and creatinine levels are within normal limits.

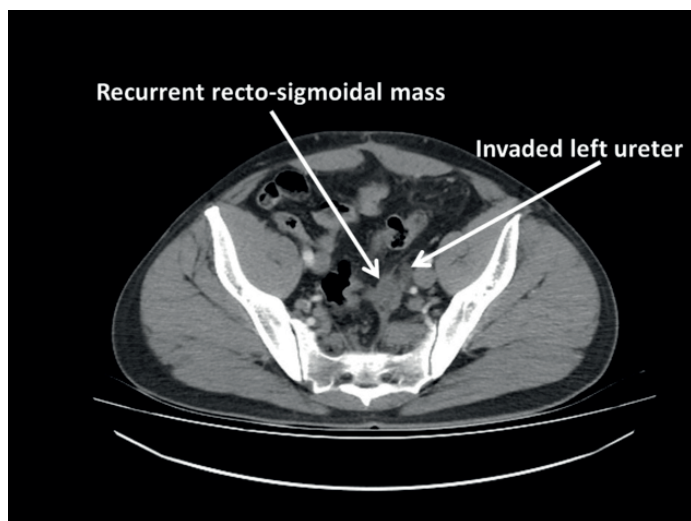


Figure 1. CT image of invaded left ureter in a patient with recurrent rektum adenocarcinoma after surgery

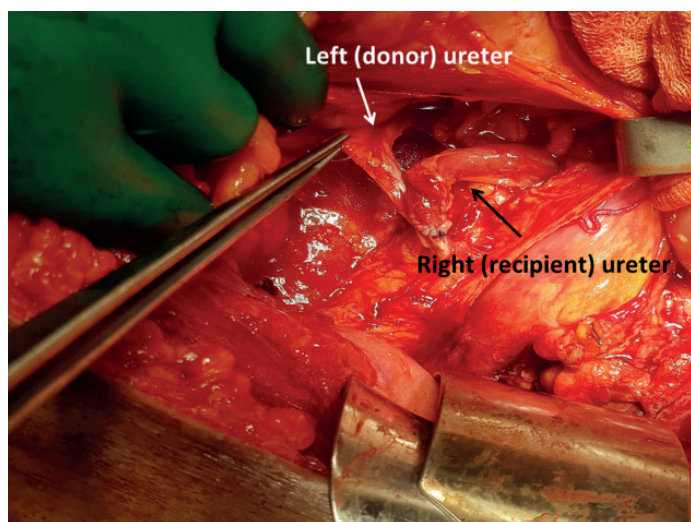


Figure 2. Peroperative image of transureteroureterostomy applied from distal left ureter to right ureter



Figure 3. Urethrogram image of the patient with transureteroureterostomy

DISCUSSION

The ureter is a retroperitoneal organ that carries urine from kidney towards the bladder. Involvement of the ureter from a pelvic mass requires meticulous handling during surgery. After resection of the invaded ureteral segment, The type of reconstructive technique is also decisive in the patient's life quality. The type of reconstructive technique following resection of the ureteral segment invaded by the mass, will also determine patient's quality of life. When the ureteral defect is minimal, end-to-end ureteroureterostomy is the treatment of choice. Prior to closure of the anastomosis, a stent is placed into the ureter to prevent the development of a possible anastomotic stricture with the ... be perf anastomotic reconstruction should be performed over a ureteral catheter. However, in most instances, end-to-end ureteroureterostomy is not appropriate due to long ureteral defects (5). Further, invasion by tumor into the bladder wall or a thickened bladder wall secondary to preoperative radiotherapy are precluding factors for end-to-end ureteroureterostomy.

In the case of a short segmented residual ureter, creating an ileal conduit and ureteroileal anastomosis is over a permanent urostomy for ensuring the quality of life in terms of providing a better life quality of life. However, it should be kept in mind that hyperchloremic metabolic acidosis -secondary to reabsorption of urine- is a common problem after this intervention (6).

Transureteroureterostomy TUU is an effective alternative option. However, the most questionnaire of this surgical method is whether it will cause renal dysfunction in

both donor and recipient kidney. Possible risk factors for deterioration in renal function are urine leak from the anastomosis and/or hydronephrosis due to anastomotic stricture in the long term (7). It's recommended to perform the ureteral anastomosis over a ureteral catheter place a stent (Double J stent) into ureter before creating the TUU. The stent can be removed 4 to 6 weeks after the procedure later if when anastomotic leak and stricture formation are excluded by an ascending urethrogram. Further, a side-to-end TUU is usually preferred to side-to-side TUU for reducing the risk of stenosis and maintaining long term patency. Another important point is the avoidance of extreme mobilization of the donor ureter which has the potential risk of impairment of the blood supply to the ureter. An ischemic ureter can lead to urine leak or with subsequent stricture formation in long term. Mobilizing the recipient ureter should also be meticulously handled. First, the blood supply should not be deteriorated during mobilization. Secondly, the inferior mesenteric artery should not compress the recipient ureter. To avoid this possible undesired situation, a retroperitoneal tunnel is created across the midline which also prevents angulation or twisting of the ureter and provides a tension-free anastomosis. The anastomosis should be performed with 4/0 or 5/0 absorbable interrupted sutures (8). Studies have shown that TUU is a safe procedure with a low complication rate (9,10). Pisters et al. (7), evaluated in their retrospective study the glomerular filtration rate (GFR) in patients who underwent TUU after multi-organ resection with TUU. In the absence of recurrent cancer, none of the patients developed hydro-uretero-nephrosis. Further, GFR did not significantly change suggesting that long term renal function is could be can be maintained with TUU.

CONCLUSION

Transureteroureterostomy TUU is a safe and effective surgical procedure for ureteral reconstruction with good long term results. It also provides a better quality of life than an ureterostomy. However, it should be avoided from TUU in the presence of a bladder invasion by tumor or thickened bladder wall secondary to preoperative radiotherapy.

Conflict of interest : The authors declare that they have no competing interest.

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Informed Consent: Additional informed consent was obtained from the patient's wife since the patient is dead.

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