



Retroperitoneoscopic proximal ureter resection and ureteroureterostomy as an alternative management for upper tract urothelial carcinoma: A case report

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ABSTRACT

Radical nephroureterectomy (RNU) with bladder cuff removal is the treatment of choice for upper tract urothelial carcinoma (UTUC). Partial ureterectomy (PU) with ureteroureterostomy in this case has shown a good result. We herein report an elderly woman with adenocarcinoma colon complaining gross intermittent hematuria and solid ureteral mass on NCCT. Patient declined RNU, so we performed PU with ureteroureterostomy. Histology examination showed high-grade infiltrating urothelial carcinoma with negative margin. Four cycles of Gemcitabine and cisplatin were given. Routine follow up and evaluation were done without any mass progression. PU and ureteroureterostomy with adjuvant chemotherapy are an alternative procedure for UTUC.

1. Introduction

Upper tract urothelial carcinoma (UTUC) accounts for 5–10% of urothelial carcinomas and are two to four times more likely to be invasive at diagnosis compared with a tumor of the urinary bladder, and the prognosis of UTUC is poorer compared with kidney cancer or bladder cancer.¹ As a result, the recommended treatment is radical nephroureterectomy (RNU) with the removal of the ipsilateral bladder cuff.

Partial ureterectomy can be considered in selected patients (e.g., solitary kidney, renal insufficiency, bilateral disease, decline RNU) with high grade and invasive tumors without compromising survival. When offering kidney sparing surgery, patients need to be willing to undergo meticulous and stringent surveillance follow-up with repeat cystoscopy, ureteroscopy, upper urinary tract imaging, and urine cytology.² We report a case with right proximal ureter tumor pT3N0M0 treated with right retroperitoneoscopic proximal ureterectomy and ureteroureterostomy.

2. Case presentation

A 62-year-old woman came with a chief complaint of gross intermittent hematuria for 6 months. Patient with a history of adenocarcinoma of ascending colon post hemicolectomy 10 years ago followed by 3 months of oral chemotherapy (Xeloda). The patient previously underwent URS and biopsy with histopathological result of adenocarcinoma. On physical examination, neither right flank pain nor palpable mass was found on palpation. Laboratory, non-contrast abdominal CT scan (Fig. 1) and chest X-Ray were performed, and no metastasis was found. The patient was diagnosed with the right proximal ureter tumor cT2N0M0.

Right URS evaluation, right retroperitoneoscopic proximal ureterectomy, and ureteroureterostomy in lithotomy position were performed because the patient declined RNU. She was afraid of having a solitary kidney despite her histopathological URS biopsy showing adenocarcinoma.

Initially, URS with RPG was performed, which showed filling defect at the level L2-L3. URS also confirmed an intraluminal mass in right ureter at the same location (L2-L3). Then, we proceeded to retroperitoneoscopic surgery. Incision was made one thumb breadth below

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12th rib to insert 11 mm trocar. Fascia was bluntly penetrated with Kelly clamp into retroperitoneal cavity, which was released with retroperitoneal balloon afterwards. Two incisions were created to insert 11-mm port and 5-mm port. Both hydronephrosis of right kidney and enlargement of the right proximal ureter with size 4 cm were found (Fig. 2). Ureter were clipped and excised proximally and distally from the mass. Insertion of 6-Fr DJ stent and right ureteral anastomosis with interrupted suture were performed following tumor resection. NGT was left in posterior right kidney before stitching of entry site. Subsequent histological examination showed tumor infiltration into the muscle layer and periureteric fat with transitional, papillary, and solid pattern, which was consistent with infiltrating urothelial carcinoma, high-grade pT3 with negative margin.

The patient was then treated with adjuvant chemotherapy 4 cycles of gemcitabine and carboplatin for 2 months. One month later, the patient came with a contrast abdominal CT scan that showed a mass in the right proximal ureter. URS evaluation showed an intraluminal papillary mass in right ureter level L3, which later displayed granulation tissue without any sign of malignancy in mass biopsy (Fig. 3). Right RPG in the following 4 months showed there was no stenosis or filling defect in the right ureter, which prompted removal of right DJ stent. Contrast CT-Scan of abdomen 1 year after surgery showed that the size of ureter mass wasn't changed. Subsequent URS evaluation and mass biopsy showed no sign of malignancies. Right DJ stent was performed 5 months later due to right moderate hydronephrosis. Routine consultation and DJ stent evaluation was performed every 3 months.

3. Discussion

Urothelial carcinomas are the fourth most common tumors in

developed countries, with Asian patients commonly presents with more advanced and higher-grade disease.³ They can be located in the lower (bladder and urethra) or the upper (pyelocaliceal cavities and ureter) urinary tract. In this case report, our patient was an Asian with upper tract urothelial cancer (UTUC), suggestive of hereditary-type UTUC based on patient's age and history of adenocarcinoma of the colon, one of Lynch-spectrum cancer. Immunohistochemistry analysis with germ-line DNA sequencing is needed to detect dysfunctional germ-line mutation in this patient.

The diagnosis of UTUC may be incidental or related to the evaluation of symptoms that are generally limited. The only symptom presented in our patient was hematuria, so we performed CT scan and URS evaluation with biopsy to ensure the diagnosis. Hydronephrosis, which was found in this patient, was associated with advanced disease.

Kidney-sparing surgery is the preferred treatment for low-risk UTUC as it reduces the morbidity associated with radical surgery without compromising oncological outcomes and kidney function.⁴ It can also be considered in select patients with serious renal insufficiency or solitary kidney. Open RNU with bladder cuff excision is the standard for high-risk UTUC, regardless of tumor location. Resection of the distal ureter and its orifice is performed because there is a considerable risk of tumor recurrence in this area. In our patient, renal sparing surgery by doing uretero-ureterostomy was done because of patient preferences, and the histopathological result from URS biopsy was adenocarcinoma.

We gave 4 cycles of gemcitabine and cisplatin as adjuvant chemotherapy for 2 months to this patient. This is based on the recent RCT conducted in the UK that demonstrated that delivery of adjuvant chemotherapy could reduce the risk of recurrence by more than 50% compared to surgery alone with similar effects were also found in another study in Japan.⁵ A good result in this patient could be achieved

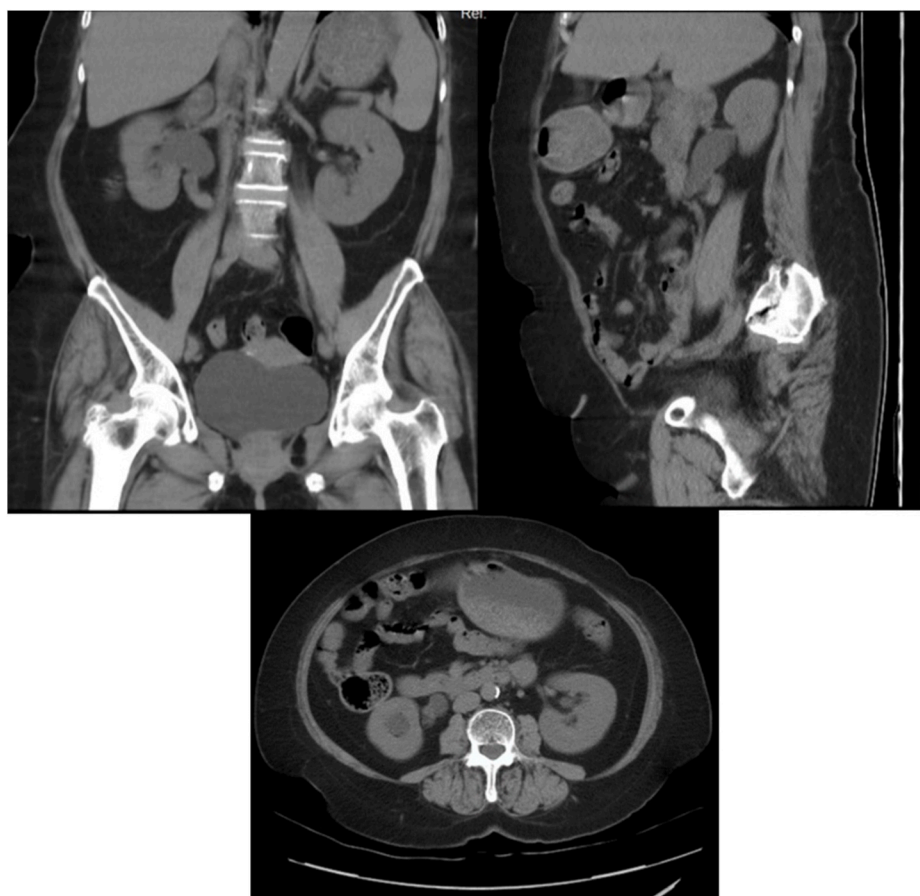


Fig. 1. Non contrast Abdominal CT. Right hydronephrosis and hydroureter with solid homogenous mass in right proximal ureter with size 20x10x10 mm.

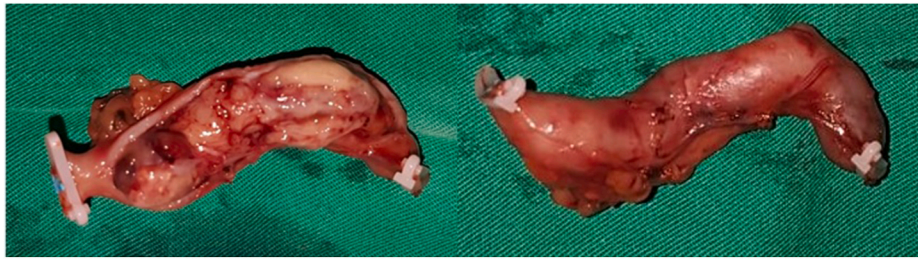


Fig. 2. Intraoperative photograph. Enlargement of the right proximal ureter.

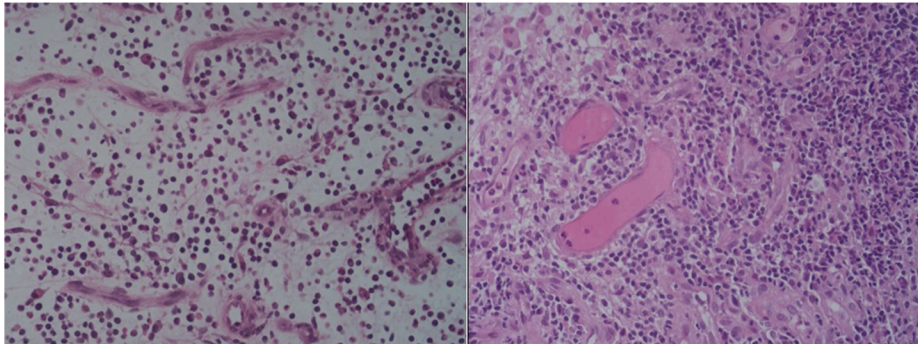


Fig. 3. Biopsy after surgery. Biopsy 3 months (left) and 1 year after surgery (right) showed connective tissue with acute and chronic inflammatory cells, without malignancies.

because of the early detection of disease and the excellent operation technique. Adjuvant chemotherapy and close follow-up also contribute to this patient's survival.

4. Conclusion

UTUC is a rare condition with a poor prognosis. Renal sparing surgery using proximal ureterectomy and ureteroureterostomy with adjuvant chemotherapy might be an alternative procedure for patients with UTUC. Multimodality treatment is needed to achieve a good result, and further follow-up is required to evaluate whether this choice of treatment could improve patient outcomes.

Declaration of competing interest

There is no conflict of interest in this paperwork.

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