

Case Report

Huge ureteral fibroepithelial polyp resected under ureteroscopy: a case report

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Abstract: A 33-year-old woman with a complaint of gross hematuria was referred to our hospital for further examination and treatment. Cystoscopy and computed tomography (CT) urography identified a huge, nonpapillary mass at least 9 cm in length protruding from the left ureteral orifice. The mass was mobile, and appeared to arise from the left mid-ureter. First, we confirmed that the tumor was benign by endoscopic biopsy. Then, the huge ureteral polyp was excised intact with ureteroscopy under general anesthesia and a muscle relaxant to prevent an obturator nerve reflex. Pathological examination revealed that the tumor was a fibroepithelial polyp. Ureteroscopic resection of this huge polyp was safe and minimally invasive, and protective of renal function. There was no evidence of polyp recurrence or perioperative complication during 1 year postoperatively.

Keywords: Ureteral tumor, fibroepithelial polyp, endoscopic surgery

Introduction

Primary ureteral tumors are relatively rare, and can be classified as having epithelial or mesodermal origin. Ureteral epithelial tumors are mainly urothelial carcinomas, and mesodermal tumors are represented by ureteral fibroepithelial polyps (UFPs). Few UFPs are more than 5 cm in diameter. Therefore, the adequate treatment and follow-up for such UFPs remain unclear. The symptoms of UFPs depend on tumor size and location, but are nonspecific, with hematuria, flank pain, and lower urinary tract symptoms (LUTS). Some cases are difficult to differentiate from malignant disease, especially when ureteral tumors are large. However, the treatment for benign UFPs should be less invasive than that involving open surgery for malignant disease; thus, ureteroscopic excision has been widely used for such tumors. Based on our case presenting with a huge tumor, we reviewed the literature on UFPs in adult patients.

Case report

A 33-year-old woman was admitted to another hospital with asymptomatic gross hematuria

and was found to have a mass of the left mid-ureter on CT. She was then referred to our hospital for further examination and treatment. There was no significant personal or family history. The results of physical examination and routine blood tests were normal, but urine cytology was equivocal. Cystoscopy showed a mobile, polypoid mass protruding from the left ureteral orifice (**Figure 1**). CT showed a filling defect and a mass about 9.0 cm diameter in the left mid-ureter, causing a mild hydroureter (**Figure 2**). Ureteroscopy showed a pedunculated tumor arising from the mid-ureter, and biopsy was performed. Histology confirmed a ureteral polyp without malignant cells, and the patient was referred to an expert endoscopic surgeon. The polyp was excised by ureteroscopic electrosurgery under general anesthesia with a muscle relaxant to avoid an obturator nerve reflex; a safety guide wire was not used, to avoid electrical conduction. An indwelling ureteral stent was placed for 11 days after the operation to prevent stricture. Pathological examination revealed an edematous tumor 9.0×1.0 cm in size, with a smooth surface; the final diagnosis was a UFP without malignant cells (**Figure 3**). There was no evidence of polyp recurrence

Huge ureteral fibroepithelial polyp



Figure 1. Cystoscopy shows a pedunculated tumor protruding from the left ureteral orifice.

or perioperative complications during 1 year postoperatively.

Discussion

Primary ureteral neoplasms are relatively rare in adults, and are commonly malignant. Only one-fifth are benign, and UFPs are the most common type. UFPs are benign mesodermal tumors, composed of a core of fibrovascular stroma with overlying normal transitional epithelium [1]. The etiology of UFPs is unclear, although a congenital origin due to a developmental anomaly, or an acquired origin caused by exposure to chronic urothelial irritants such as stones, infection, obstruction, or trauma, has been suggested [2, 3]. UFPs may primarily be seen in males, because ureteral polyps accompanying urolithiasis have been found in some cases [4, 5]. In previous reports, most cases occurred between the second and fourth decades of life, and about half were located in the proximal ureter [5, 6]. The clinical symptoms vary according to lesion location in the ureter. The most common presenting symptoms are flank pain and hematuria. Some cases present with hydronephrosis secondary to ureteral obstruction. When polyps are located at the distal ureter, patients may present with



Figure 2. Computed tomography shows a filling defect (►) extending from the left mid-ureter to the bladder, with a mild hydroureter.

LUTS such as frequency and dysuria. The mean diameter of UFPs is reportedly less than 5 cm; however, larger polyps may extend into the bladder cavity and are difficult to distinguish from bladder tumors [7-9]. We experienced a case of a huge tumor of the mid-ureter, measuring about 9 cm in length, presenting with gross hematuria in a young woman.

Urothelial cell carcinomas arising from UFPs are rare, and only a few cases have been reported [5, 10, 11]. In preoperative radiographic evaluation, ureteral polyps are difficult to distinguish from ureteral carcinomas and radiolucent calculi. Although the risk of malignant transformation of UFPs is very low, pathological examination with ureteroscopy or transurethral biopsy is essential.

There is no standard treatment of UFPs due to their rarity; however, the priority of treatment

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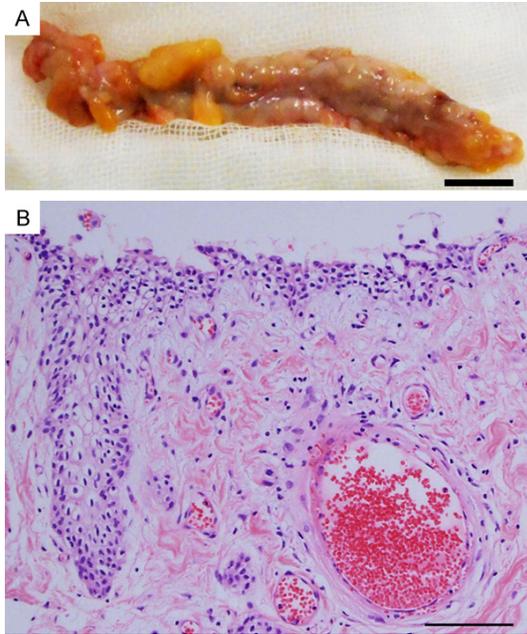


Figure 3. Gross appearance (A: Scale bar, 1 cm) and hematoxylin and eosin stains (B: Scale bar, 100 μ m) of the tumor show a ureteral fibroepithelial polyp, composed of congestive and edematous fibrovascular stroma, with overlying normal transitional epithelium, and no malignant cells.

should be complete excision by minimally invasive surgery to protect renal function. Nonetheless, if patients already have decreased renal function with severe hydronephrosis, or present with a huge polyp, open or laparoscopic surgery should be considered [12-15]. The current literature indicates that less invasive endoscopic procedures including percutaneous or ureteroscopic excision are suitable treatment options for relatively large UFPs [7, 15-17]. However, when polyps of the lower or middle ureter are resected using electrocautery under ureteroscopy, we should be careful to avoid an obturator nerve reflex because the nerve runs anterior/lateral to the lower ureter and inferior/lateral to the bladder wall [18]. Therefore, prevention strategies include selective obturator nerve block, muscle relaxation, and reduction in the intensity of the resector device by using a diode and holmium: YAG laser, with conversion to saline irrigation [15, 19, 20].

The perioperative outcome and appropriate follow-up regimen remain unclear. According to a systematic review of the literature on UFPs in 131 adult patients [19], the postoperative outcome in 57 available patients was complaint

free (93.0%), recurrent or remnant stones (3.5%), ureteral stricture (1.8%), and recurrent polyp (1.8%). Most perioperative complications occurred within 1 year, and 1 case of urolithiasis occurred after 3 years; thus, the study suggested follow-up imaging with CT intravenous urography after 3 months, and ultrasound after 1 year to detect late complications.

The present report focused on UFPs in adults; however, UFPs are also occasionally found in the pediatric population. Preoperative diagnosis and treatment of UFPs in children are more challenging than in adults because of the small lumen of the ureter [21, 22]. Considering age, performance status, symptoms, tumor location, tumor recurrence, and malignant potential, determination of the appropriate management of UFPs requires accumulation of more cases.

Conclusion

We report the successful resection of a huge UFP by ureteroscopy in a young woman. Fortunately, she had no evidence of recurrence or late complications during 1 year of postoperative follow-up. Effective and minimally invasive endoscopic surgery should be standardized for UFPs; however, an endoscopic expert should be available for perioperative management of any complications and adequate follow-up.

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Disclosure of conflict of interest

None.

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