CASE REPORT

UROLOGICAL ONCOLOGY

Benign fibroepithelial polyp of the ureter

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Benign tumors of the ureter are rare and most often appear in the form of fibroepithelial polyps [1]. Fibroepithelial polyps represent from 2 to 6% of all benign tumors of the urinary tract [2]. The Authors report on two cases of fibroepithelial polyps of the ureter, which they treated between 1993–2009. One case was presented by acute urinary retention and gross hematuria. In the second case, hematuria and flank pain were observed. The first case was treated with open surgery and partial resection of the ureter, the second was treated endoscopically when the base of the polyp was well identified.

Key Words: fibroepithelial neoplasms ‹› ureteral neoplasms ‹› ureteral obstruction

INTRODUCTION

Fibroepithelial polyps are benign tumors of mesodermal origin. This group of tumors includes also angiomatous polyps, leiomyomas, hemangiomas, neurofibromas, lymphangiomas, granulomas and endometriomas [3, 4, 5].

Fibroepithelial polyps are more commonly found in the ureteropelvic junction or upper ureter [3, 5], but may occur in the renal pelvis [6]. In contrast to polyps in children, fibroepithelial polyps are commonly located in the posterior urethra [7]. Most of the lesions are solitary, but there has been a report of multiple fibroepithelial polyps affecting the pelvis and ureter [2].

Data on predilection of these tumors in literature differ. Nowak et al. states that they are more common in women than in men and are unilateral [6], while others find more fibroepithelial polyps in young men [5, 8]. They tend to occur in adults between 20 and 40 years of age [3], but may arise in children [6] and have even been reported in neonates [9].

The etiologic factors of these tumors are still unknown. Such factors as allergy, trauma, exogenous carcinogens, and hormonal imbalance have been proposed as causative agents [6]. Some authors believe they have a congenital origin due to their anomalous development [1] or irritation due to calculous disease [10].

Presenting symptoms are hematuria and/or nonspecific flank pain [3, 6, 7]. Pain may be intermittent because of partial obstruction and may sometimes be associated with symptoms suggesting urinary tract infection [7].

Preoperative radiologic diagnosis of fibroepithelial polyp is difficult. The first imaging method should be a CT scan. In the 1990's, the commonly used IVP also showed the typical smooth filling defect [3]. Ultrasonography and computed tomography can rule out radiolucent calculi [6]. Radiologically they show as a sharp smooth filling defect on CT scan [11]. Cytological examination of urine is not beneficial in diagnosis of these entities, because of normal overlying transitional cell epithelium [3]. Mistaking these tumors for transitional cell carcinomas may result in an unnecessary nephro–ureterectomy. Therefore, when preoperative diagnosis is not certain, peri–operative biopsy must be performed and frozen sections

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have to be examined [3]. In the appropriate clinical setting, fibroepithelial polyps should be considered in the differential diagnosis, which will affect surgical treatment [8].

Review of the literature indicates that these tumors vary in size from 0.6 to 12 cm in greatest dimension. Typically they are solid and firm with an intact mucosal surface [6]. On histological examination, the fibroepithelial polyps are characterized by loose vascular, edematous, fibrous stroma with overlying benign transitional epithelium [6]. The central edematous stromal stalk often contains collagen, smooth muscle fibers, fibroblasts, and occasional acute and chronic inflammatory cells [4].

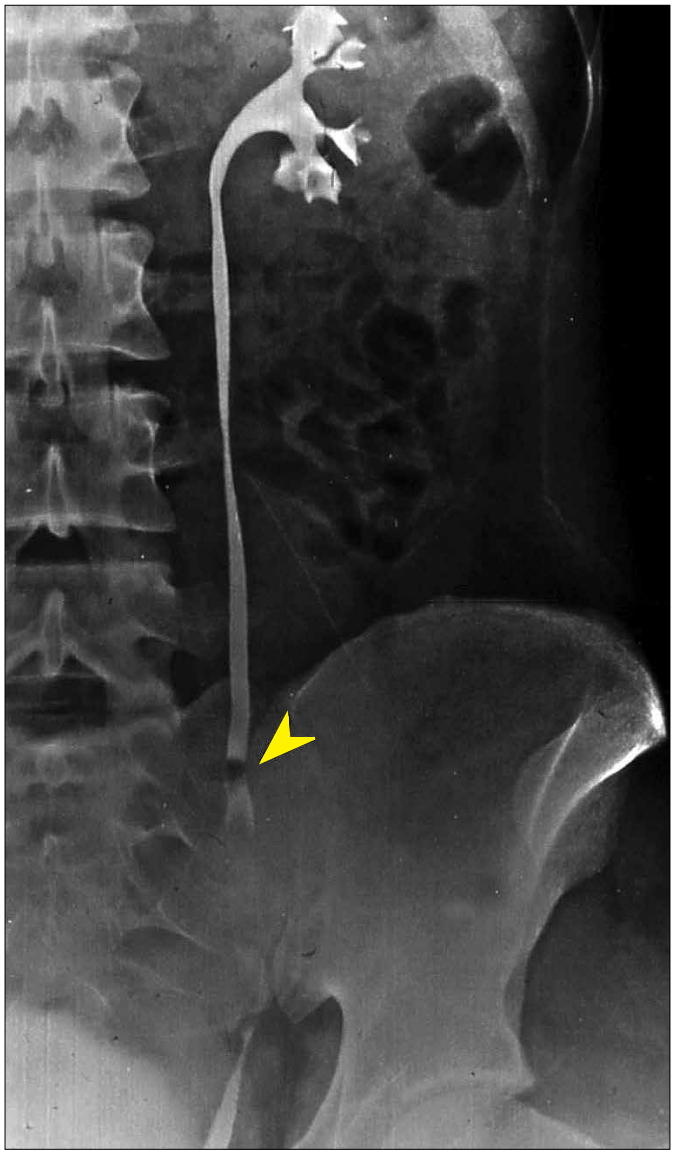

Figure 1. *Retrograde ureteropyelography showing fibroepithelial polyp – filling defect of the ureter.*

CASE REPORTS

Patient 1

A 24–year–old female was admitted with symptoms of acute urinary retention – with the feeling of a blocked urethra. Acute retention was anticipated by macroscopic hematuria. The patient's past medical history was known for pyelonephritis during pregnancy. She delivered her baby by Cesarean section one year ago. She lived in Central Africa between the ages of two and eight years. Physical examination revealed a polyp protruding from the external urethral meatus. When touching this polyp, the patient complained of pain in her left flank. Further examination included IVP, cystoscopy with retrograde ureteropyelography (Fig. 1). IVP showed ureter duplex on left side. The lower renal segment of the ureter was found to have a filiform defect that reached the bladder and urethra. The base of the polyp was at the level of the ureter crossing the iliac vessels. Cystoscopy verified the finding on IVP. Open surgery was performed with peri–operative histology. Resection of 2 cm of ureter with ureteroctomy was performed and double J stent was inserted during surgery. Histological examination verified a polyp containing a loose fibrous tissue with the presence of vessels in an area of chronic inflammatory celulisation. The surface was lined with well–differentiated urothelium. The postoperative process was complicated by peritoneal signs on the 5th postoperative day; revision surgery revealed only mesenterial lymphadenopathy and an appendectomy was performed. The rest of the hospital stay was without any complications. Follow–up at 4–years was without recurrence of the polyp. The patient was recently lost to follow–up.

Patient 2

A 30–year–old female was referred to us with sudden onset of acute abdominal pain in left flank. Her past medical history was not significant; she had one child delivered by normal vaginal delivery. One week before her referral to us she was treated by her general practitioner for symptoms of low urinary tract infection. Ultrasound revealed mild hydronephrosis on the left side, but were otherwise negative. Plain X–ray showed suspected concrement in distal part of left ureter. Laboratory findings were without abnormalities. Due to recurrent renal colic pain, cystoscopy with retrograde uretero–pyelography was performed, which proceeded to ureteroscopy. X–ray using contrast dye did not show any significant pathology and ureteroscopy was complicated by bleeding, which obscured the view. The procedure ended by insertion

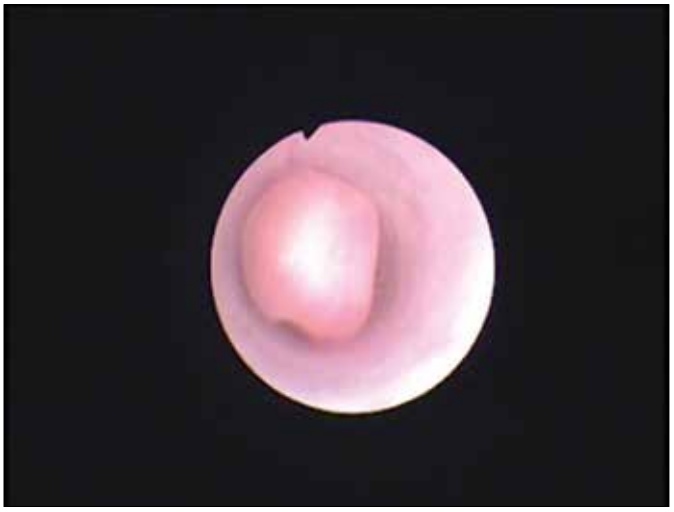

Figure 2. *Ureteroscopy – apex of the polyp.*

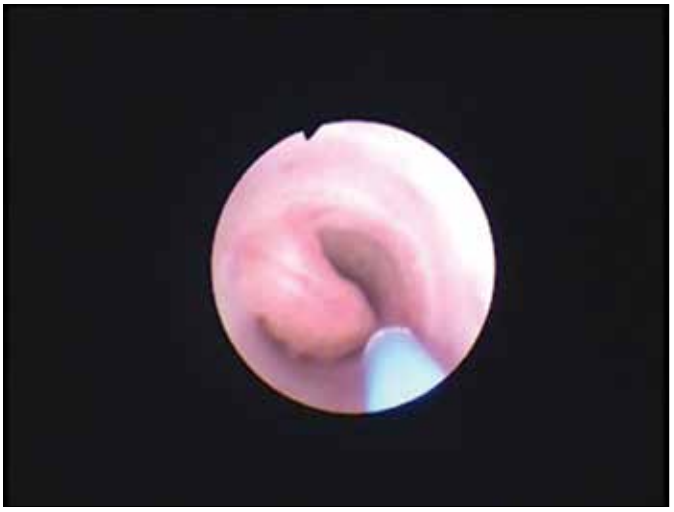

Figure 3. *Ureteroscopy – base of the polyp.*

of a stent. The patient was readmitted for a second step ureteroscopy to rule out a stone as a most probable cause of her symptoms. Ureteroscopy revealed a polypoid mass, which was floating up and down in the lumen of the ureter (Figure 2, 3). It had a narrow base. The polyp was resected by electrocautery and extracted from the ureter (Figure 4). A double J stent was inserted and left for three weeks. Histology again verified a polyp containing a loose fibrous tissue with the presence of vessels together with chronic inflammatory celulisation. The surface was lined with well–differentiated urothelium (Figure 5). Ureteroscopy was performed following removal of the stent with findings of smooth urothelium of ureter without any scaring in the lumen of the ureter. Her follow up is 1–year without any clinical symptoms.

Figure 4. *Specimen of the polyp after resection via ureteroscopy.*

DISCUSSION

Benign polyps of the ureter are rare, but can possibly cause flank pain, hematuria, and urinary retention. Although IVP has been a sufficient imaging method in the past because of its typical X– ray character of a smooth filling defect (Figure 1), the current imaging method of choice is multidetector computed tomography. Direct visualization by ureteroscopy can also be sufficient to make the diagnosis (Patient 2). Typically we observe negative cytology. It is important to think about this entity to avoid unnecessary nephroureterectomy. The treatment of each patient should be planned individually. Endoscopy techniques seem to be the optimal form of management when the lesion is small enough and the base is identifiable [6], but once any doubts exist, open surgery with frozen section and eventually partial ureter resection is advisable.

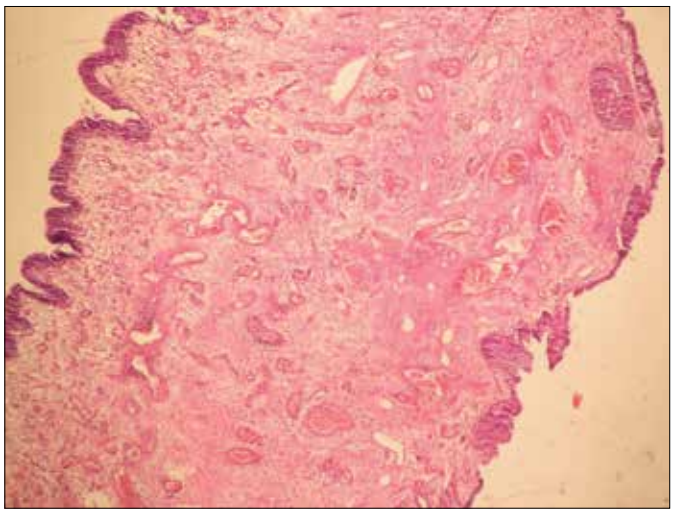

Figure 5. *Histology of a fibroepithelial polyp.*

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