Case Report / Olgu Sunumu
doi: 10.18678/dtfd.1438679

Duzce Med J, 2024;26(2):175-178
Düzce Tıp Fak Derg, 2024;26(2):175-178

A Rare Cause of Macroscopic Hematuria: Ureteral Fibroepithelial Polyp: A Case Report

Makroskopik Hematürinin Nadir Bir Nedeni: Üreteral Fibroepitelyal Polip: Bir Olgu Sunumu

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ABSTRACT

Fibroepithelial polyps are rare, benign, non-epithelial tumors of the urinary system. They can occur throughout the entire urinary system, including the renal pelvis, ureter, bladder, and urethra, which are lined with urothelium. These polyps originate from the stromal structure, formed by the combination of mesodermal and urothelial cells. The most common clinical complaint of patients with fibroepithelial polyps is unilateral flank pain. In some cases, this pain may be accompanied by hematuria, dysuria, and pollakiuria, which are irritative lower urinary tract symptoms. In this case report, a case of a giant ureteral fibroepithelial polyp in a patient who was admitted to our clinic with macroscopic hematuria and left flank pain was presented. Following the diagnosis of a giant polyp in the left ureter, we treated the patient with endoscopic ablation using a Holmium-YAG laser device under ureteroscopy guidance.
Keywords: Hematuria; fibroepithelial; ureteroscopy.

ÖZ

Fibroepitelyal polipler üriner sistemin oldukça nadir görülen, iyi huylu, epitelyal olmayan tümörleridir. Böbrek pelvisi, üreter, mesane ve üretra da dahil olmak üzere üroepitelyum ile döşeli, üriner sistemin tamamında ortaya çıkabilirler. Mezodermal ve üroepitelyal hücrelerin birleşiminden oluşan stromal yapıdan köken alırlar. Fibroepitelyal polipli hastaların kliniğe en sık başvuru şikayeti tek taraflı yan ağrısıdır. Bazı durumlarda yan ağrısına hematüri, dizüri, pollaküri gibi irritatif alt üriner sistem semptomları da eşlik edebilir. Bu olgu sunumunda, makroskopik hematüri ve sol yan ağrısı şikayetleri ile kliniğimize başvuran bir hastada dev üreter fibroepitelyal polip sunulmuştur. Sol üreterde dev polip tanısı konulan hastaya üreteroskopi eşliğinde Holmium-YAG lazer cihazı kullanılarak endoskopik ablasyon uygulandı.
Anahtar kelimeler: Hematüri; fibroepitelyal; üreteroskopi.

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Received / Geliş Tarihi : 18.02.2024
Accepted / Kabul Tarihi : 19.07.2024
Available Online / Çevrimiçi Yayın Tarihi : 14.08.2024

INTRODUCTION

Fibroepithelial polyps (FEPs) are rare, benign, nonepithelial tumors of the urinary system. They originate from the stroma composed of mesodermal and transitional epithelial cells. While the majority of FEPs are located in the ureter (most commonly in the proximal ureter), approximately 15% are found in the renal pelvis, and they are less commonly observed in the urethra and bladder (1). They tend to be unilaterally located, with left-ureteral involvement being twice as common as right-sided involvement (2). In cases where a radiolucent filling defect originating from the proximal ureter is observed on intravenous urography (IVU) or retrograde ureterography

and the cytology is negative, FEP should be suspected (3). Currently, IVU and retrograde ureterography, which are imaging methods for the diagnosis of FEP, have been replaced by computed tomography (CT) urography with technological developments. Since FEPs typically occur in the ureteropelvic junction (UPJ), most cases can be followed up with a diagnosis of congenital UPJ obstruction, which is a cause of hydronephrosis in childhood (4). With this case, we aimed to examine a 44-year-old female patient with left ureteral FEP, which is considered an extremely rare cause of macroscopic hematuria and left flank pain, both clinically, radiologically, and histopathologically. Additionally, we aimed to contribute to the literature by successfully treating patients through endoscopic ablation using a Holmium-YAG laser.

CASE REPORT

A 44-year-old female patient presented to our clinic with complaints of macroscopic hematuria and left flank pain. Physical examination revealed tenderness at the left costovertebral angle, but no other pathological findings were detected. Laboratory investigations revealed >400 erythrocytes per field in the microscopic examination of complete urinalysis, while leukocytes and nitrites were negative. Kidney function parameters were within the normal reference range. Ultrasound examination revealed mild dilation of the collecting systems in the left kidney. To elucidate the etiology of the patient's hematuria and left flank pain, a CT urography examination was performed. On CT urography, the right urinary tract and right kidney were observed to be normal. The left kidney was also normal; no stones were detected in the left ureter. Images of the pyelographic phase revealed a tubulonodular hypodense lesion, approximately 80 mm in length, in the proximal section of the left ureter, causing no significant ureteral expansion or partial filling of the lumen. Contrast material passing into the ureter was observed at the periphery of the lesion. The ureter was normal in width both proximal and distal to the segment containing the lesion; no dilation was observed in the collecting system of the left kidney. Due to the lack of geometric configuration and size of the lesion, density measurements could not be performed, and it was not clear whether the lesion was solid. Given the patient's macroscopic hematuria, it was considered that the lesion in the ureter could be associated with a solid lesion that partially fills the lumen (Figure 1). Cystoscopy was performed on the patient under general anesthesia and no pathological findings were found except for hematuric jet flow coming from the left ureteral orifice. Therefore, a diagnostic ureterorenoscopy was performed on the patient. At the level of the left proximal ureter, a pedunculated polypoid mass approximately 7 cm in length, almost completely obstructing the lumen, was observed (Figure 2). The base of the polypoid mass was ablated with a Holmium-YAG laser and separated from the ureteral wall. Subsequently, using foreign body forceps, all tissue was removed in a single piece and sent to the pathology laboratory for definitive diagnosis. The excision material macroscopically appeared tubular with all surfaces covered with mucosa and a pedunculated structure resembling a stalk at the surgical margin (Figure 3). Then, a 4.8Fr 26 cm pigtail catheter was placed in the patient's left ureter. No complications were encountered. Histopathological examination of the excised sections revealed chronic inflammatory cells, fibroblasts, and congested vascular structures in the loose, edematous stroma at the center of the lesion. The surface of the lesion was lined with urothelial epithelium (Figure 4). No mitotic figures were observed in the epithelium. The lesion did not show continuity at the surgical margin. Immunohistochemical studies revealed no significant increase in proliferative activity with Ki-67 in the urothelial epithelium or lesion stroma. Urothelial cells with umbrella cells were observed with cytokeratin 20. In conclusion, the lesion was reported as a FEP.

In the patient's follow-up ultrasound the third postoperative week after the removal of the pigtail catheter, no hydronephrosis was observed. No pathological findings were found in the blood and urine tests and control urinary system ultrasound of the patient,

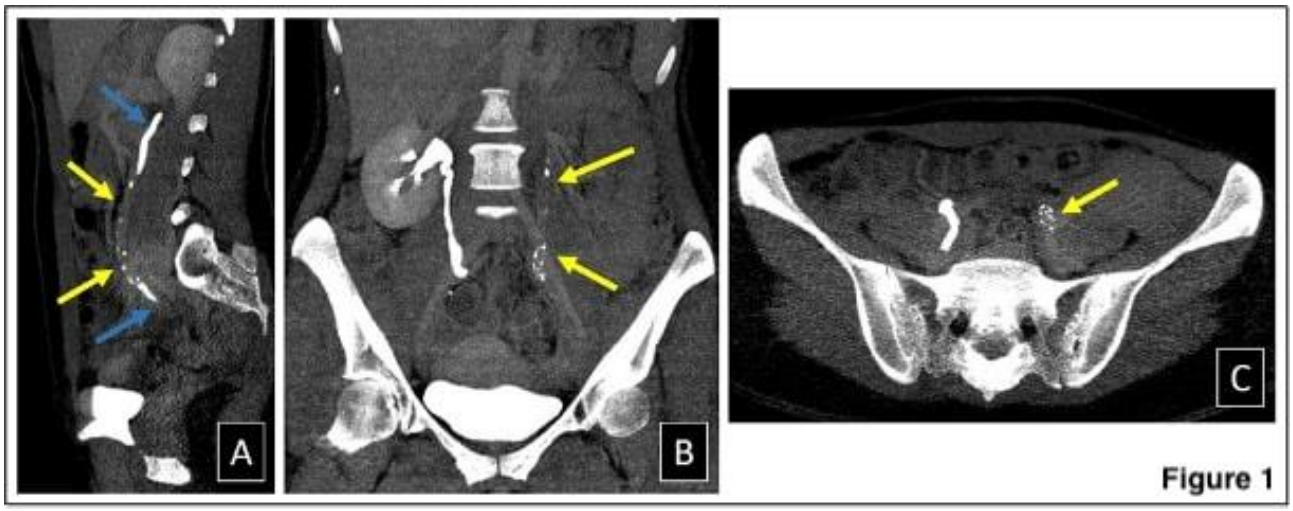

Figure 1. A) Sagittal, **B)** coronal, and **C)** transverse plane maximum intensity projection images of the pyelographic phase of the computed tomography urography examination, a hypodense lesion partially filling the lumen along the segment in the left ureter (yellow arrows) is observed, the ureter segments proximal and distal to this segment are of normal width (blue arrows)

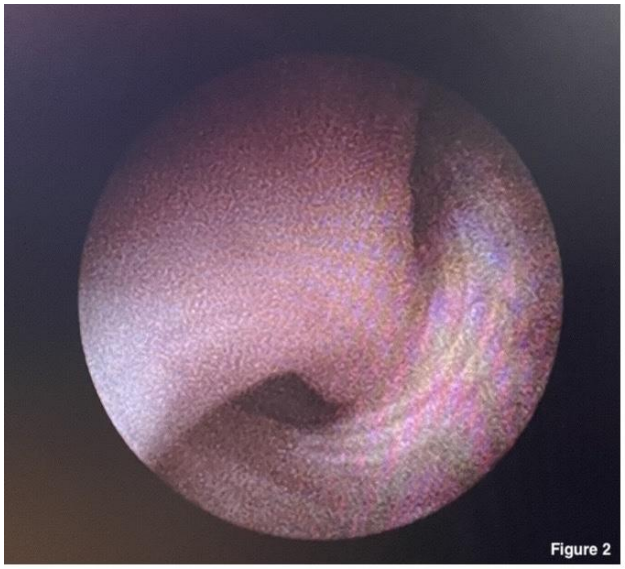

Figure 2. Image of the FEP in the lumen of the left ureter

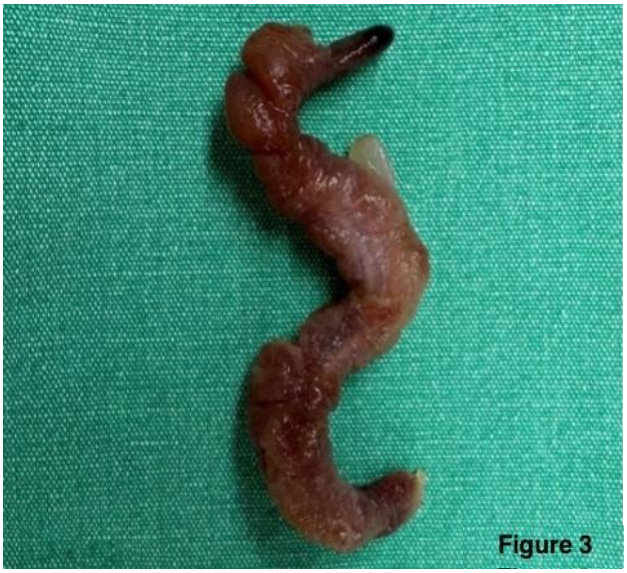

Figure 3. Macroscopic view of the excision material

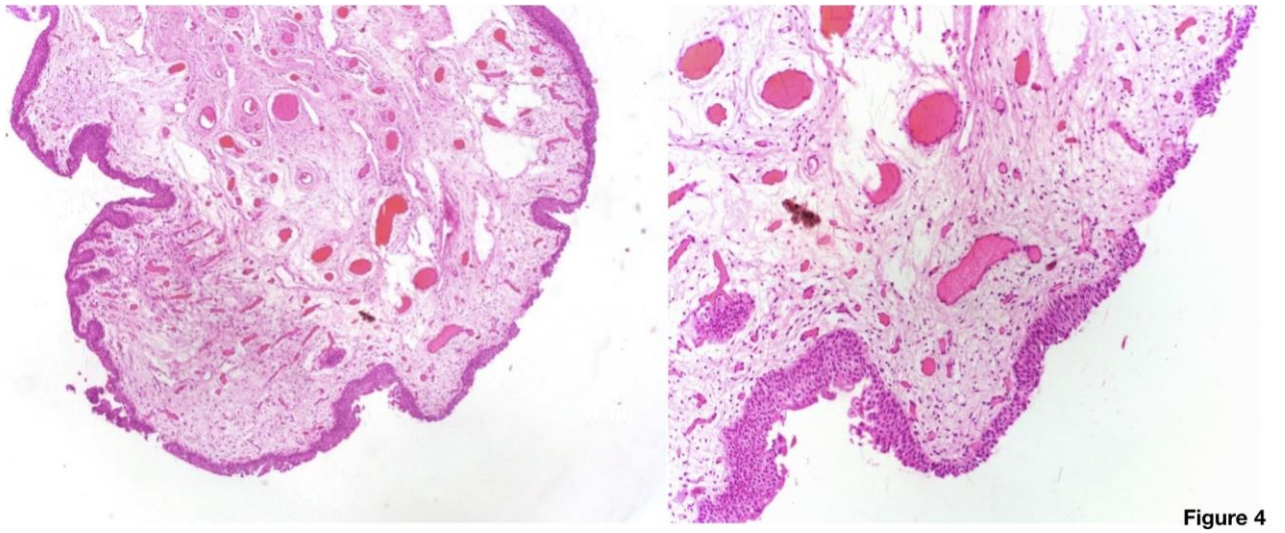

Figure 4. The urothelial epithelial lining on the surface and a central fibrovascular core structure were observed (H&E, x40)

who achieved control in the third month. Verbal and written consent was obtained from the patients for the study.

DISCUSSION

Among FEPs, the majority are benign mesodermal tumors originating from the ureter. Histologically, FEPs are composed of structures with a surface covered by normal uroepithelium and a loose fibrovascular stroma (5). Although classified as benign hamartomas due to their histological structure, cases with accompanying malignant and cystic degeneration have been reported in the literature (6,7). The most common presentations for patients with FEP are colicky flank pain (79%) and hematuria (50%), while symptoms such as dysuria, pollakiuria, and pyuria may also be present (8). In the past, open surgical methods were used for the treatment of FEPs. However, currently, minimally invasive methods such as percutaneous, ureterorenoscopic, and laparoscopic techniques are employed. Currently, the most commonly used treatment modality for FEPs is ureterorenoscopic ablation with a Holmium-YAG laser, and most studies highlight this method (9,10). Another minimally invasive approach is the percutaneous antegrade approach, which is preferred especially for polyp ablations in the proximal ureter and renal pelvis (5). The laparoscopic method is crucial for the treatment of polyps that are too large to be completely excised with endoscopic treatment and has replaced open surgical excision (6). Childs et al. (5) applied open surgical procedures to the first 10 out of 22 patients in their study, while they performed ureterorenoscopic ablation in 11 other patients and percutaneous ablation in 1 patient. They reported that they achieved complete treatment success with endoscopic methods as well. Sun et al. (10) showed that large FEPs with an average size of 11 cm can be treated with ureterorenoscopic ablation by applying this procedure to all 5 patients. Kijvikai et al. (6) treated a 17 cm fibroepithelial polyp via laparoscopic excision. There are differences of opinion regarding preoperative biopsy in the literature. While Childs et al. (5) argued in their study that biopsy is mandatory because differentiation from

urothelial carcinoma cannot be made with radiological imaging or ureterorenoscopic view, Sun et al. (10) reported that biopsy is not necessary in patients with a typical appearance of FEPs, and after frozen examination in case of suspicion, ablation can be performed. In our case, due to the typical appearance of FEPs in the radiological and endoscopic images, the tumor was completely excised by applying the Holmium-YAG laser ablation procedure. Laser ablation was applied to the base of the polypoid mass. Studies have shown that the depth of long FEPs may be short, and long FEPs can be treated with ablation at this point (5,10).

At the 3-month postoperative follow-up, urinalysis, hemogram, biochemical parameters, and urinary system ultrasound were performed, and no pathological findings were detected.

In conclusion, FEPs can be successfully treated by applying Holmium-YAG laser ablation through ureterorenoscopy, which is a minimally invasive method.

Informed Consent: Written informed consent was obtained from the patient for publication and accompanying images.

Conflict of Interest: None declared by the authors.

Financial Disclosure: None declared by the authors.

Acknowledgments: None declared by the authors.

Author Contributions: Idea/Concept: AN; Design: HED; Data Collection/Processing: AN, HED, ATD, YYK, HHY; Analysis/Interpretation: YYK, HHY; Literature Review: AN, ATD, HHY; Drafting/Writing: AN, ATD, HHY; Critical Review: HED, YYK.

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