Ureteral fibroepithelial polyp: A diagnostic challenge

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ABSTRACT

Ureteral fibroepithelial polyps (UFP) are relatively rare, benign tumors. A total of 236 total cases were documented between 1932 and 2013. Notably, imaging studies, including computerized tomography (CT) and magnetic resonance imaging (MRI) are often negative. This report details a case of a patient with a UFP who presented with hematuria. CT suggested a possible 1.8 cm mass, but subsequent MRI was negative. Cystoscopy showed a polyp that prolapsed out of the left ureter and into the bladder with peristalsis. The patient subsequently underwent retrograde ureteroscopy and holmium laser excision of the polyp.

1. Introduction

Ureteral fibroepithelial polyps (UFP) are relatively rare, benign tumors. A total of 236 total cases were documented between 1932 and 2013.1 However, diagnosis of UFP has gradually increased over the last two decades, likely as a result of improved access to investigative endoscopic methods.

Here we present a case of a patient with negative imaging and a UFP diagnosed upon cystoscopy.

2. Case presentation

A 61-year-old female presented to the urology clinic after noticing blood after wiping herself following voiding. The patient stated she had a history of smoking marijuana for several years. The patient had no history of kidney stones or urinary tract infections. Urinalysis confirmed the presence of red blood cells. Urine cytology was negative. Initial computerized tomography (CT) with and without intravenous contrast suggested a possible 1.8 cm mass or cystic lesion in the upper pole of the left kidney. A subsequent magnetic resonance imaging (MRI) with and without gadolinium contrast was performed, which did not reveal any mass in either kidney or hydronephrosis. MRI also did not reveal any other renal or abdominal abnormality. It should be noted that the scan was performed in an open setting as the patient had severe claustrophobia.

Subsequent cystoscopy revealed no evidence of tumor, stones, or diverticula in the bladder. The right ureteral orifice was regular in shape, but wide open. The left ureteral orifice was normal. Upon peristalsis of the right ureter, a large polyp prolapsed several centimeters out of the ureteral orifice (Fig. 1) before retracting back into the ureter. Continuous observation showed the polyp prolapsed and retracted with each peristaltic wave.

The patient was told options, consented, and brought to the operating room. Ureteroscopy of the right ureter revealed what appeared to be two pedunculated polyps, each approximately 2–4 cm in length. The pedicles were located at the junction of the mid and distal ureter. Contrast injection showed a slightly dilated collecting system, but no other filling defects.

The patient was counseled appropriately, and it was decided that the patient would undergo holmium laser excision and removal of the polyps. Ureteroscopy showed that what had been previously identified as two separate polyps were in fact a single branching polyp of about 10 cm in length. No other polyps or abnormalities were noted. Retrograde pyelogram showed no other filling defects. A 365 μm holmium laser was used to fulgurate the base of the stalk and ureteroscopic biopsy forceps were used to extract the polyp (Fig. 2). A guidewire was passed into the right ureter, and a 7 French 24 cm ureteral stent was placed.

The stent was removed after a few weeks, and the patient reported no complications and complete resolution of her hematuria.

Histological analysis showed a polypoid lesion composed of fibrovascular stroma. Some areas showed marked edema of the stroma. Predominant lymphocytes and scattered siderophages were seen. The polyp was covered with benign urothelium with focal small invaginations into the underlying stroma. No mitoses were noted, and...
there was no significant atypia or evidence for malignancy (Fig. 3).

3. Discussion

UFPs typically occur at the ureteropelvic junction and the proximal ureter.\(^2\) Reportedly, UFPs may vary in size from 0.6 to 12 cm.\(^3\) Larger polyps may extend into the bladder cavity. Recently, Sun et al. documented a large UFP that protruded from the urethra of a 37-year-old woman.\(^4\) Symptomatically, UFPs typically present with hematuria or colicky back/flank pain. Other symptoms can include suprapubic discomfort, urinary frequency, and dysuria. Histologically, UFPs are composed of vascular fibrous stroma covered with a urothelium lining.\(^3\)

As in our case, diagnostic imaging - including CT and MRI - is often unreliable for detection of UFPs. However, retrograde pyelography will typically show a smooth filling defect.\(^5\) The mainstay of diagnosis is retrograde ureteroscopy, which typically reveals a grossly visible smooth polyp. Prior to ureteroscopic resection, treatment of UFP would involve open exploration of the ureter, a cumbersome procedure with a high complication and mortality rate.

4. Conclusion

UFPs are relatively rare, benign tumors that can present an unusual diagnostic challenge as imaging studies including CT and MRI can present with negative findings. In patients with symptomatic presentation and negative imaging, a high degree of suspicion should be maintained. Retrograde pyelography and ureteroscopy can be used to accurately diagnose and treat occurrences with relative ease.

References

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Fig. 1. Polyp prolapsing from the left ureter as seen on cystoscopy.

Fig. 2. Ureteral fibroepithelial polyp specimen following resection and extraction.

Fig. 3. Specimen histology consisting of fibrovascular stroma covered with benign urothelium.