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Images in Urology

Fibroepithelial Polyp Mimicking a Renal Pelvis Tumor

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SHOULD ALL UPPER URINARY TRACT MASSES ON IMAGING BE SUSPECTED FOR MALIGNANCY?

A 42-year-old female presented with abdominal pain that had developed 1 month previously. She had been diagnosed as having right hydronephrosis with a renal pelvic mass and ureteral mass on an abdominopelvic computed tomography (CT) scan at a local clinic. She was referred to Chonnam National Hwasun Hospital for further evaluation. Her medical history was unremarkable; the physical examination of her external genitalia and the results of blood examinations were normal. Urinalysis revealed microscopic hematuria (1 to 4 red blood cells/high-power field) but no history of gross hematuria. An abdominopelvic CT scan showed a heterogeneous enhancing mass on the right pelvocalyx and upper ureter with hydronephrosis (Fig. 1A). Retrograde pyelography revealed a smooth filling defect from the upper ureter to the renal pelvis (Fig. 1B). The result of urine cytology of the right ureter was benign atypia. Under suspicion of an upper urinary tract urothelial carcinoma, diagnostic ureteroscopy and nephroureterectomy with bladder cuff excision was planned. With the patient under general anesthesia, an 8 Fr rigid ureteroscope was advanced into the right ureter and an elongated mass was identified at the mid ureter. A small portion of tumor tissue was obtained by use of biopsy forceps for frozen biopsy. Biopsy was suggested for a benign lesion such as fibroepithelial polyp. According to the frozen biopsy report,

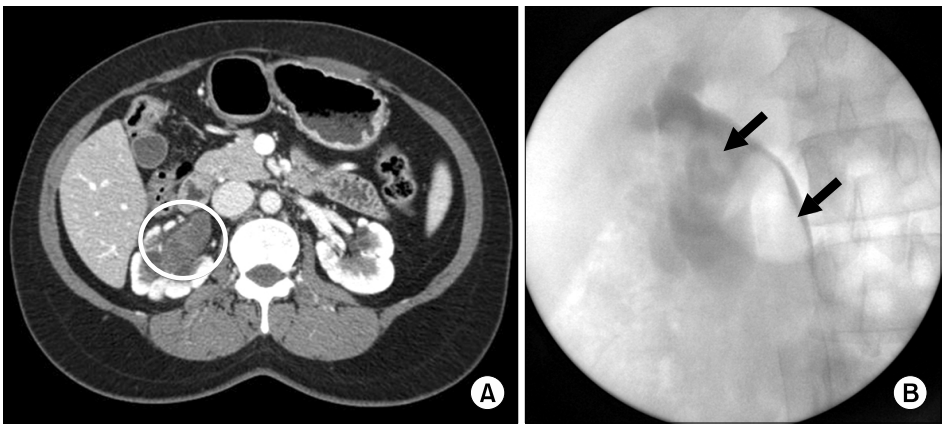

FIG. 1. Abdominopelvic computed tomography (CT) scan showed a heterogeneous enhancing mass on the right pelvocalyx and upper ureter with hydronephrosis (circle) (A); retrograde pyelography revealed a smooth filling defect from the upper ureter to the renal pelvis (arrows) (B).

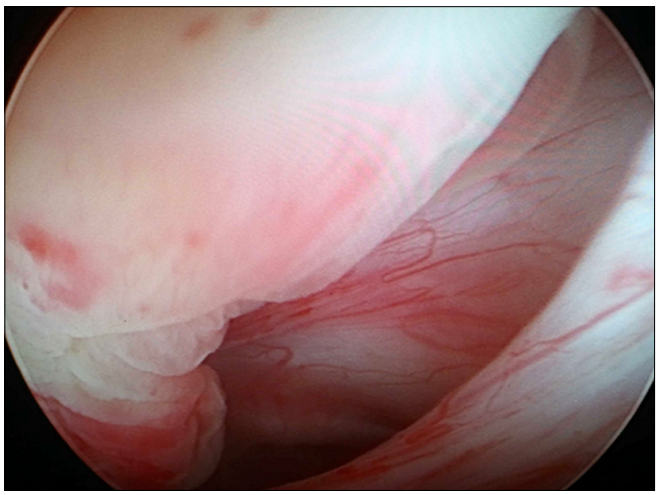

FIG. 2. Nephroscopic view: the polypoid mass originated from the upper calyx and filled the renal pelvis and upper ureter.

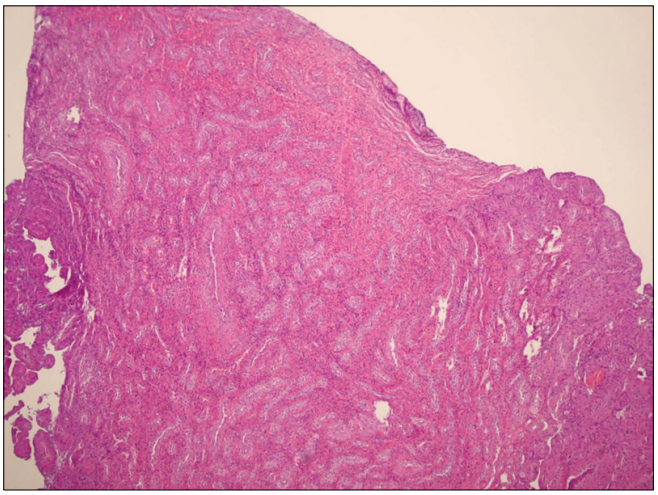

FIG. 3. Densely arranged vascular structures were found in the central area. Some surface epithelium remained in both lateral areas (H&E, ×20).

the surgical plan was changed from nephroureterectomy to percutaneous renal pelvic tumor excision. Under the nephroscopic view, the polypoid mass originated from the upper calyx and filled the renal pelvis and upper ureter (Fig. 2). The mass was removed by using a Holmium laser. An open-ended ureteral catheter was inserted in an antegrade fashion after the completion of surgery. The pathological findings were consistent with a fibroepithelial polyp (Fig. 3).

THE DIAGNOSIS: FIBROEPITHELIAL POLYP MIMICKING UROTHELIAL CARCINOMA

An upper urinary tract tumor can be defined as any neoplastic growth that affects the lining of the urinary tract from the calyces to the distal ureter. Fibroepithelial polyps in the upper urinary tract are rare benign neoplasms [1] and can occur at every age, especially in the third to fourth decades of life [2]. Males are 1.5 times more likely to be affected than females. The majority of these polyps are found at the ureteropelvic junction. Signs and symptoms usually associated with ureteral obstruction include flank pain and hematuria; thus, fibroepithelial polyps are often considered as urothelial cell carcinoma. Although fibroepithelial polyps have a characteristic appearance as a tan or pink, singular or multiple frond polyp on a common stalk, clinical differentiation between fibroepithelial polyps and a malignant ureteral tumor is difficult, and pathologic confirmation is essential [3]. Because of the rarity of the disease and difficult differential diagnosis from urothelial carcinoma, the management of fibroepithelial polyps consists of nephroureterectomy for presumed malignancy as well as ureterotomy, dismembered pyeloplasty, ureteroureterostomy, or ureteroneocystostomy. Ureteroscopic management by laser, which avoids unnecessary nephroureterectomy, is a nephron-sparing approach that is often associated with low rates of surgical morbidity and pain but may not achieve complete excision. Incomplete resection of the polyp, including the base, may result in tumor recurrence after surgery [4]. A recent retrospective study reported experience with the management of fibroepithelial polyps with a review of the contemporary literature [2]. In that report, urolithiasis, ureteropelvic junction obstruction, ureteral stenting, and recurrent urinary tract infection were associated with fibroepithelial polyps that were small (mean, 2 cm), and most cases were managed by endoscopic surgery without recurrence.

In the present case, the patient had a symptom (abdominal pain) with a large (about 6 cm) renal pelvis and ureter filling defect on CT; thus, we first suspected an upper urinary tract urothelial carcinoma. An upper urinary tract filling defect on imaging is a diagnostic challenge for urologists. The differentiation between a malignant tumor and benign disease is particularly important because local resection is the treatment of choice for the latter. The technical advances achieved in the realm of endoscopic equipment have made the flexible and rigid ureteroscope a key part of the evaluation of upper urinary tract tumors. Diagnostic accuracy can be improved from approximately 75% with excretory or retrograde urography alone to 85% to 90% when it is combined with ureteroscopy [5]. Although the risks of tumor seeding, extravasations, and dissemination have been reported with ureteroscopy [6], this phenomenon appears to be uncommon and should not preclude its use [7]. In conclusion, we believe that the current report may help clinicians who have encountered an upper urinary tract mass considered to be an upper urinary tract urothelial carcinoma to avoid performing unnecessary nephroureterectomy through diagnostic ureteroscopy.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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