

Percutaneous Nephroscopic Resection of Renal Pelvic Fibroepithelial Polyp

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Benign fibroepithelial polyps of the renal pelvis are extremely rare, and are frequently mistaken for transitional cell carcinoma. Diagnosis is usually made following nephrectomy or nephroureterectomy for an assumed malignancy of the renal pelvis. We report a 56-year-old female with a right renal pelvic fibroepithelial polyp successfully treated by percutaneous nephroscopic resection. [*J Chin Med Assoc* 2006;69(8):393–395]

Key Words: fibroepithelial polyps, percutaneous nephroscopic resection, renal pelvis, transitional cell carcinoma

Introduction

Tumors in the area of the renal pelvis are most commonly malignant, and the standard therapy for such lesions is usually nephroureterectomy.¹ However, rare benign tumors such as fibroepithelial polyp do occur in this region of the urinary tract; thus, a more conservative form of therapy is indicated for such lesions in order to preserve the kidney. We report a patient with a right renal pelvic fibroepithelial polyp successfully treated with a minimally invasive technique, percutaneous nephroscopic resection.

Case Report

A 56-year-old female presented with intermittent right flank pain and gross hematuria for 2 weeks. Past medical history was unremarkable and physical examination revealed a healthy woman with knocking pain over the right costovertebral angle region. An excretory urogram (IVU) (Figure 1) and computed tomography (CT) scan of the abdomen (Figure 2) demonstrated a round intraluminal filling defect, approximately 12 mm in diameter, with a well-defined margin in the right renal pelvis. Washing cytology of the urine from the right renal pelvis was performed and was negative for malignancy. A cold cup biopsy of the tumor was



Figure 1. Excretory urogram showed a round intraluminal filling defect with well-defined margin over the right renal pelvis, associated with mild degrees of pelvicaliectasis.

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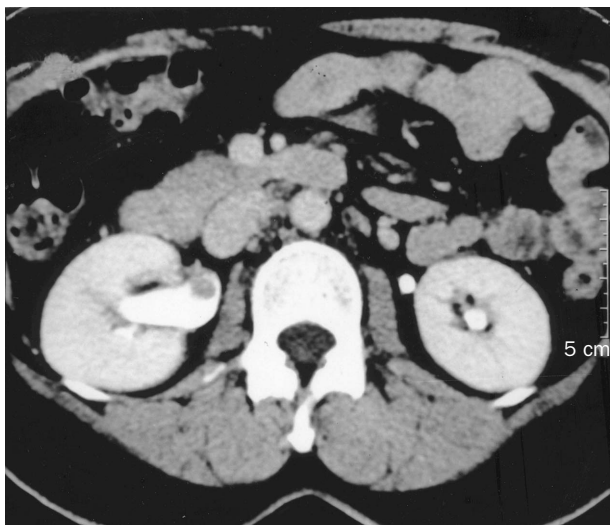


Figure 2. Computed tomography of the abdomen with contrast showed an intraluminal soft tissue nodule, about 1.2 mm in diameter with mild hydronephrosis, in the right renal pelvis.

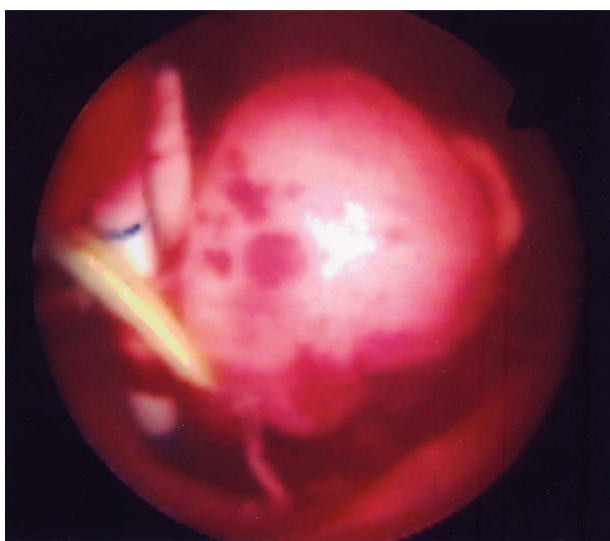


Figure 3. A smooth polypoid lesion seen through the resectoscope over the right kidney, with the guide wire traversing the ureteropelvic junction.

done through a retrograde ureteroscopy, and the pathology report confirmed that the lesion was benign and highly suggestive of a fibroepithelial polyp.

Under the diagnosis of a possible benign lesion, the patient underwent percutaneous nephroscopic resection of the right renal pelvis polyp. The percutaneous nephrostomy puncture of the right kidney was performed under C-arm fluoroscopy guided by the radiologist. The tract was then dilated with Amplatz dilators to 26 Fr, and a 24 Fr resectoscope (Karl-Storz resectoscope) was inserted through the Amplatz sheath and

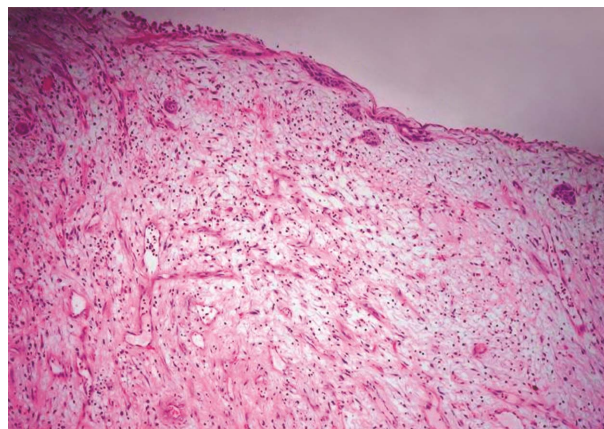


Figure 4. Polypoid fibrovascular stroma lined by denuded urothelium with partial squamous metaplasia, with no evidence of malignancy. Highly suggestive of fibroepithelial polyp. (Hematoxylin & eosin, 100 \times .)

the lesion was resected. A smooth polypoid lesion seen through the resectoscope is depicted in Figure 3. After the resection, the ureteropelvic junction appeared to be nonobstructed with a normal contour.

Postoperatively, a 20 Fr nephrostomy tube was inserted for indwelling drainage. The postoperative course of the patient was unremarkable and she was discharged 2 days after surgery. The nephrostomy tube was removed at our clinic on the 5th postoperative day. Pathologic study confirmed a benign fibroepithelial polyp with fibrovascular stroma lined by denuded urothelium, with no evidence of malignancy (Figure 4). At 6 months' follow-up, an IVU examination showed no recurrence of the lesion.

Discussion

Renal pelvic tumors are relatively uncommon, and most of them are malignant. Benign fibroepithelial polyps are extremely rare, with no more than 40 cases documented in the literature. They are considered the most common benign mesodermal tumors of the urinary tract.¹⁻⁴ Other rare mesodermal tumors include fibromas, leiomyomas, granulomas, lymphangiomas, neurofibromas, hemangiomas, and endometriomas.²⁻⁵ Fibroepithelial polyps are usually composed of a fibrous core covered with normal transitional epithelium.^{3,6} They are usually smooth, well marginated and cylindrical, sessile, or even frondlike.^{2,3} Till now, the etiology remains unclear, with congenital, irritative, infectious, obstructive, hormonal imbalances, and traumatic causes having been proposed.^{1-3,5} Patients with benign fibroepithelial polyps are typically young adults with

an average age of 40 years, presenting with intermittent flank pain (79%) and hematuria (50%).²⁻⁴ The renal pelvic polyp has a female preponderance (79%) and occurs more commonly on the right side (70%), while the ureteral polyp occurs more commonly in males, with a slight predilection for the proximal ureter on the left side (70%).^{3,4}

Because of the overlapping clinical presentation and radiologic findings, it becomes a challenge to differentiate fibroepithelial polyp from blood clots, radiolucent calculus, and neoplasm.² Abdominal non-contrast CT scan is performed to evaluate calculi, and urine cytology is routinely done to evaluate malignancy. However, these polyps are covered with normal urothelium; hence, urine cytology is often of limited use in distinguishing them from malignancy.^{2,5} Because most tumors in this region of the urinary tract are usually malignant, establishing correct preoperative diagnosis is often crucial. These benign lesions are commonly mistaken for transitional cell carcinoma (TCC), and frequently result in unnecessary nephroureterectomy.²

Recent studies of benign fibroepithelial polyps reported features to distinguish them from TCC. Features included are age, configuration, and location. Benign fibroepithelial polyps are commonly present in the younger population as smooth, often mobile, polypoid masses in the upper ureter or renal pelvis, while TCC is usually found in the bladder or lower ureter as a fixed, irregular filling defect in the older age group.² In the past, treatment of fibroepithelial polyps of the renal pelvis consisted of open nephroureterectomy or simple excision with reanastomosis. In the modern era of endourology, more conservative form of treatment for these benign polyps is being considered to preserve the affected kidney. With the latest technologies, preoperative diagnosis of benign fibroepithelial polyp is no longer impossible and difficult. Accurate preoperative diagnosis can be made with ureterorenoscopy, for it not only allows direct visualization of the tumor, but also aids in the biopsy of the lesion for histopathologic identification.⁵ Hence, definitive treatment with more minimally invasive methods

such as percutaneous nephroscopic resection can now be performed. Periodic IVU during postoperative follow-up is essential because recurrence of these fibroepithelial polyps has been described after apparent complete percutaneous nephroscopic resection.^{2,4}

Conclusion

Renal pelvic fibroepithelial polyp is a rare mesodermal tumor frequently mistaken for TCC, which has led to many unnecessary nephroureterectomies in the past. With new advances in endourologic surgery, definitive preoperative diagnosis of these benign polyps can be made with ureterorenoscopic cold cup biopsy. Hence, treatment with a minimally invasive nephron-sparing procedure can be achieved. Although these polyps are considered benign, recurrence has been reported after an apparent complete percutaneous nephroscopic resection; thus, periodic IVU examination during follow-up is essential to detect any early recurrence.

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