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Case Report Open Access

An Unusual Condition Simulating Malignancy: A Patient with Fibroepithelial Polyp of the Renal Pelvis Covered by the Blood Clot

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Abstract

Fibroepithelial polyp of the renal pelvis is a rare cause of hematuria, and is frequently mistaken for transitional cell carcinoma. We report a 78-year-old female presented with intermittent painless gross hematuria initially suggestive of transitional cell carcinoma. CTU showed high density shadow in the right renal pelvis and proximal ureteral lumen. IVU and retrograde urograph showed a filling defect in the right renal pelvis and proximal ureter that was found to be a fibroepithelial polyp of the renal pelvis. This case demonstrates a rare cause of gross hematuria that should be considered when the imaging findings and presentation are atypical for more common etiologies of hematuria.

Keywords: Fibroepithelial polyps; Renal pelvis; Transitional cell carcinoma

Case Presentation

A 78-year-old female was admitted for two months of intermittent painless gross hematuria on October 31, 2013, without significant incentives associated with blood clots, the symptoms of hematuria gradually became severe, there were no other concomitant symptoms, such as urinary frequency, urgency, urine pain, dysuria and flank pain. The patient has a history of hypertension for 40 years, diabetes for 8 years; liver cirrhosis for more than 10 years; lacunar cerebral infarction for many years; and about 2 years ago, bladder cancer was diagnosed followed by regular bladder perfusion chemotherapy with pirarubicin for one year and regular cystoscopy every three months, no recurrence was found. Before hospitalization, repeated cystoscopy, washing cystology of urine and a computed tomography (CT) scans of the abdomen demonstrated negative for tumor. Ultrasonography showed double calyces separation, low echo in the right renal pelvis and ureter. CTU showed relatively high density shadow in the right side of the renal pelvis and calyces and proximal ureteral lumen, blood clot was considered (Figure 1). Many times of blood transfusion treatment were performed in the emergency department of our hospital, but the hematuria persisted and she was admitted for further diagnosis and treatment. Urinalysis revealed gross hematuria with red blood cell 200 Cells/μl (<25 Cells/μl). A complete blood count of red blood cell 2.21×10^{12}/L ($3.50\text{-}5.50 \times 10^{12}$/L) and hemoglobin 61 g/l (110-150 g/L) was obtained. Biochemical indicators did not show any obvious abnormality. Repeated ultrasonography showed low echo in the right renal pelvis and proximal ureter with no blood signals, the size was 4.7×2.6 cm. Intravenous urography (IVU) and retrograde urograph showed a filling defect in the right renal pelvis and proximal ureter.

After repeatedly discussion of the whole department and repeatedly communication with the family members, nephroureterectomy of the right side was suggested to try to solve the hematuria problem. Operation was performed on the 20th day of hospitalization. The right renal was cut open after nephrectomy, it was noted that the pelvis was occupied with blood clot under which was qualitative hard tissues partially extended to the upper part of the ureter. The postoperative pathological diagnosis was "right renal pelvis fibroepithelial polyp associated with hematoma and fibrosis; chronic pyelonephritis, there was bleeding in part of the malpighian tube; ureter and its end with no abnormality" (Figure 2). After the operation, the hematuria disappeared and the level of the hemoglobin rose to 103 g/L (110-150 g/L). And the recovery course of the patient was unremarkable and she was discharged 6 days after operation (Figures 1 and 2).

Discussion

Urinary tract urothelial cell carcinoma is one of the most common reasons lead to hematuria, while fibroepithelial polyp of the renal pelvis is rarely to be thought. Sometimes, it is difficult to differentiate the fibroepithelial polyp from the urinary tract urothelial cell carcinomas according to the imaging characteristics. Although many advanced urology detect techniques are available, the diagnosis of the fibroepithelial polyp of the renal pelvis preoperatively may be still confusion as showed in our case report.

Tumors that happened in the area of renal pelvis are relatively rare, and most of them are malignant. Fibroepithelial polyp is extremely uncommon benign mesenchymal tumor of the renal pelvis. It is reported that other benign lesions of the upper urinary tract include endometriomas, fibromas, leiomyomas, granulomas, neurofibromas and lymphangiomas [1,2]. Fibroepithelial polyps are mostly located in the ureter, only 15% occur in the renal pelvis, other uncommon locations include posterior urethra and bladder [3]. Most fibroepithelial polyps are found in patients 20-40 years old, but they also may occur in newborns and adults older than 70 years [4], with a male/female ration of 3:2. The one we report here is a 78-year-old woman with the polyp in the right renal pelvis.

In general, the size of the most fibroepithelial polyps is smaller than 5 cm, but larger polyps have been reported [5,6]. They can be multiple, but mostly are solitary [1]. And they are often smoothly marginated and cylindrical, sessile, or even frondlike. The size of the polyp we report here is about 4 cm, with an irregular shape covered

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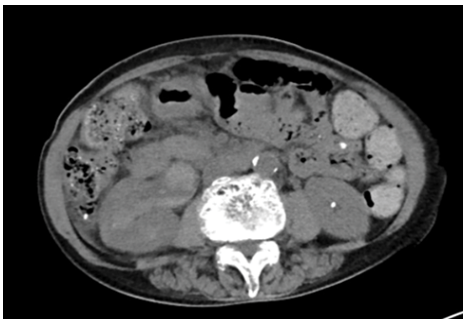

Figure 1: Computed tomography demonstrates high density shadow in the right side of the renal pelvis and calyces and proximal ureteral lumen.

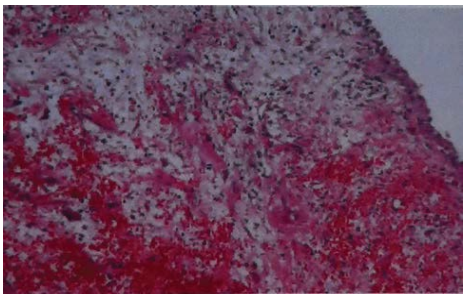

Figure 2: Microscopic appearance of the fibroepithelial polyp of the right renal pelvis associated with hematoma and fibrosis (original magnification×40).

by blood clot. Histopathologically, the fibroepithelial polyp has a core consisted of a vascular, loose, edematous stromal covered by a layer of normal transitional epithelium that may show foci of squamous metaplasia or ulceration [7,8]. Till now, the etiology remains unclear, but either congenital slow-growing lesions or lesions that develop as a result of chronic urothelial irritants, such as infection, inflammation, or obstruction having been proposed [3,9-11].

The presenting symptoms of fibroepithelial polyps are vague and non-specific, most common symptoms are gross painless hematuria and/or intermittent or recurrent flank pain. Sometimes, the pain may be severe, as in the case of torsion of the polyp, resulting in painful ischemia or infarction [12]. Urinary frequency, dysuria, and pyuria are less common findings. In children, fibroepithelial polyp may present as an uncommon cause of obstruction of the ureteropelvic junction [13]. However, some patients with fibroepithelial polyp may be asymptomatic and may not be diagnosed throughout their lives.

The preoperative diagnosis of fibroepithelial polyps is difficult even though advanced inspect methods are available. Generally speaking, on IVU, retrograde urograms or a CT scan, fibroepithelial poly may show a filling defect in ureteral or renal pelvis sassociated with or without varying degrees of hydronephrosis, its position may change between images [14,15]. It is reported that this finding combined with negative and biopsy should suspect a fibroepithelial polyp [16]. Ultrasound usually shows a solid-appearing lesion without acoustic shadow posteriorly. Other methods that are helpful to the diagnosis include endoscopic examination by a cystoureteroscope, a biopsy of the lesion with the help of biopsy forceps or resectoscope. In our case, the IVU and retrograde showed a filling defect in the right renal pelvis, but the CTU showed a nonspecific relatively high density shadow in the right side of the renal pelvis and proximal ureteral lumen, these made us confusion about the diagnosis. Biopsy of the lesion in the renal pelvis through ureteroscopy was considered, but after weigh the pros and coins, it was not suggested.

With respect of management of the fibroepithelial polyp, it varies a lot. Local coagulation by laser, polypectomy by ureteroscopy and segmental resection with ureteroureterostomy or nephroureterectomy are reported. In the past, because of the uncertainty of the diagnosis and lack of substantial literature regarding their management, most fibroepithelial polyp describe open, or occasionally, laparoscopic management. With the advent of ureteroscopes and endoscopic biopsy, endoscopic

percutaneous or ureteroscopic approach excisions or laser coagulation of the poly are popular [17,18]. Which method to choose depends on the site, size and the clinical expertise. Smaller lesions can be simply fulgurated endoscopically while larger lesions need a formal surgical excision [19]. The patient we report here received a nephroureterectomy because the hematuria persisted and the level of hemoglobin could only be maintained through intermittently blood transfusion, and most importantly we could not find out the reason of the hematuria though almost all kinds of detect methods were performed.

There are two interesting aspects of this case. On the one hand, the diagnosis of the renal pelvis fibroepithelial polyp was not considered, and in fact, the urothelial cell carcinoma was suspected based on the filling defect showed on the IVU and retrograde urograph. However, blood clot was demonstrated on the imaging of CTU, which made us confusion about the diagnosis. On the other hand, the polyp was covered by the blood clot noticed after the cut open of the right renal. In retrospect, maybe there had been a bleeding with the renal pelvis fibroepithelial polyp, then the blood coagulated and covered on its surface. This maybe the reason that made the high density shadow in the right renal pelvis showed on the CTU. Though biopsy was not performed in this case, it just illustrates the importance of the preoperative biopsy, which can help the definitely diagnosis of a renal pelvis polyp and then the unnecessary surgery procedure can be avoided.

In a word, fibroepithelial polyp of the renal pelvis is a rare cause of hematuria that should be considered when adult presents with hematuria and there is no typical evidence of the urothelial cell carcinoma. It is a challenge to make the fibroepithelial polyp diagnosed preoperatively because of the vague clinical presentation and radiologic findings. Hence, high index of clinical suspicion and refinement of similar cases are needed.

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