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Obstructed kidney secondary to a benign renal fibroepithelial polyp: A rare and interesting case

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ABSTRACT

Renal fibroepithelial polyp (FEP) is a very rare tumour and we describe a case causing acute ureteric obstruction. A 56 year old lady presented with presumed pyelonephritis and left hydronephrosis, without calculi. She was transferred to a tertiary hospital urology service where after an unsuccessful retrograde attempt at stent insertion, a nephrostomy was inserted. Subsequently, the patient underwent a ureteropyeloscopy and excision of a FEP arising from the renal pelvis. Renal FEP is a very rare cause of obstruction and was successfully managed endoscopically.

1. Introduction

Benign tumours of the renal tract are a rare group of non-epithelial, mesodermal originating neoplasms which include leiomyomas, fibromas, neurofibromas and lymphangiomas. Fibroepithelial polyp (FEP) is a benign neoplasm and in contrast to malignant transitional cell and squamous cell carcinoma, which originate from epithelium, FEP is derived from mesenchymal tissue.[1] Renal FEPs are even rarer, with less than 30 reported cases. We present a case of a renal FEP causing acute ureteric obstruction.

2. Case presentation

A 56 year old woman presented to a peripheral hospital initially managed as pyelonephritis and subsequently found to have an obstructed left kidney. Past medical history included type 1 diabetes mellitus, primary sclerosing cholangitis, ischaemic heart disease, hypercholesterolaemia and stage 3 chronic kidney disease.

She presented with two days of left flank pain and vomiting without fevers. She denied dysuria and haematuria. Vitals were unremarkable except for oxygen saturation at 94% on room air. Her abdomen was soft with left renal angle tenderness. Urinalysis demonstrated leukocyte esterase, moderate blood and negative nitrites. Blood tests demonstrated white cell count (WCC) of 25 $\times$ 10^9/L with neutrophillia, estimated Glomerular Filtration Rate (eGFR) of 25 ml/min/1.73m^2 (baseline of 40–50 ml/min/1.73m^2), serum Creatinine (Cr) of 189 micromol/L (baseline of 100–110 micromol/L).

Non-contrast Computed Tomography (CT) showed moderate left hydronephroureterosis without ureteric calculi. Subsequent renal tract ultrasound (US) scan two days later demonstrated mild left sided hydronephrosis. Contrast-enhanced CT was not conducted due to poor renal function. The admitting medical team made a presumptive diagnosis of pyelonephritis for which she was managed with an indwelling catheter and intravenous ceftriaxone. Over the next 2 days, her renal function declined to an eGFR of 13 ml/min/1.73m^2 (Serum Cr of 328 micromol/L) and she was referred to a Urology unit.

The patient underwent cystoscopy and attempted JJ stent insertion to relieve obstruction. Retrograde pyelogram demonstrated a corkscrew appearance of the mid ureter with limited contrast entering the proximal ureter and contrast extravasation. Rigid ureteroscopy to enable stent placement was attempted and demonstrated a significantly angulated mid ureter and inability to navigate proximally. A wire was unable to be passed to the renal pelvis and flexible ureteroscopy was not attempted. Ureteral washings were sent for histology and the procedure abandoned. She underwent radiologic left nephrostomy and 7-French Optimed antegrade stent insertion with staged nephrostomy removal. Renal function improved (eGFR 18 ml/min/1.73 m,[2] Cr 248 micromol/L) and she was discharged home, completing 14 days of antibiotics.

Staged left ureteropyeloscopy was performed. A polyp (Video still) was seen arising from an interpolar calyx and filling most of the renal pelvis (Video 1), and was biopsied. Histological analysis of the biopsy specimen demonstrated an inflammatory polyp without evidence of

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neoplasia, and washings were negative for high grade urothelial carcinoma.

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Retrograde endoscopic resection of the polyp occurred 4 weeks later and was noted to have a narrow vascular stalk, coiled in the renal pelvis. This was transected using a holmium laser and was extracted through a ureteral access sheath. Histologic examination confirmed a benign FEP (Fig. 1).

3. Discussion

Whilst FEPs are rare, they are the most commonly encountered benign lesions of the ureter[2] and found within the ureter or pelvi-ureteric junction (PUJ). Only a small proportion occur within the renal pelvis.[3] FEPs can pose a treatment challenge for clinicians, as they are often difficult to diagnose radiographically. Treatment options include open, endoscopic and percutaneous approaches.[1,3] Furthermore, there is no clear consensus regarding follow up.[1,4] This case highlights the diagnostic challenge of a renal pelvis FEP radiographically and describes successful endoscopic resection.

FEPs most commonly present in adults between ages 30 to 40[1]. A recent literature review of 131 cases of FEP by Ludwig et al. (2015) suggests female predominance (55.9%) and aetiology is uncertain. Developmental defects, slow growing congenital lesions as well as acquired causes such as chronic irritation secondary to infection, inflammation, calculi or obstruction have been hypothesised.[1,3]

Patients with symptomatic FEPs usually present with flank pain and/or haematuria.[1] Radiographic diagnosis is difficult as the patients are often assumed to have passed a stone. The most commonly described finding on post-contrast imaging is of a smooth filling defect for FEPs in the ureter or PUJ.[2] Renal pelvis polyps have been described as appearing multiple or frond-like on intravenous pyeloureterogram (IVP).[2] The use of urine cytology is debated, however consensus suggests that cytology is of limited use as FEPs are covered by normal urothelium.[2] Endoscopic evaluation is required to distinguish FEPs from other urinary tract tumours. In this case, CT and US identified obstruction but not the cause, urine cytology was negative, no obvious filling defect was evident on RGP, and the lesion was only seen on direct visualisation.

Treatment for FEP is largely driven by symptomatology and include open, endoscopic and percutaneous surgical approaches.[1] Open surgical approaches include polypectomy via ureterotomy, partial ureterectomy and nephroureterectomy.[1] Rates of endoscopic resection have markedly increased since 2000, likely due to advances in endoscopic equipment.[5] Lam et al. (2003) have described a percutaneous approach for resection of FEPs where they arose from the renal pelvis or the stalk could not be reached ureteroscopically. They report that this approach allows for direct visualisation of the polyp and facilitates removal with ease.

There remains no clear consensus regarding follow-up recommendations post excision of FEP.[3] Whilst there is consensus on the benign nature of FEPs, complications such as ureteric calculi, ureteric stenosis and recurrence have been described.[1] Some studies have recommended close surveillance with yearly IVP as well as check ureteroscopy.[4]

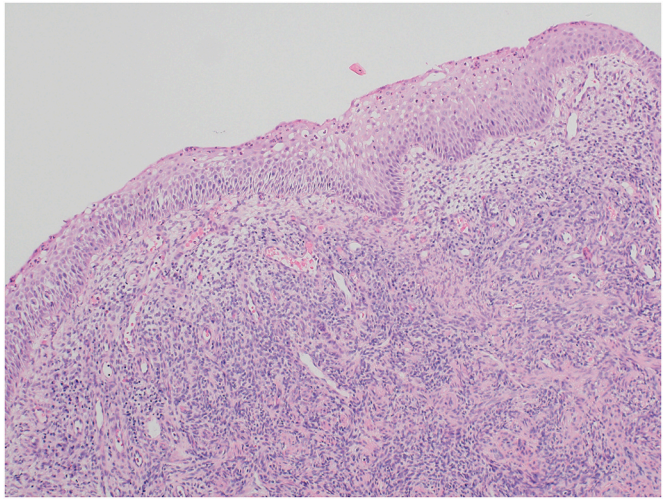

Fig. 1. Microscopic view of FEP.

Ludwig et al. (2015) have recommended CT IVP after 3 months and US after 1 year to detect late complications. In this case, US 3 months postoperatively revealed no recurrence in and she remains well 12 months later.

4. Conclusion

Renal FEP is a rare benign neoplasm and an unusual cause of renal obstruction. We have presented a case of a 56 year old lady with an obstructed kidney which required percutaneous decompression. Successful endoscopic resection and histological analysis confirmed FEP. Our case adds to the body of evidence of successful endoscopic management of FEP.

Declaration of competing interest

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References

1. Ludwig DJ, Buddingh KT, Kums JJ, et al. Treatment and outcome of fibroepithelial ureteral polyps: a systematic literature review. *Canadian Urological Association Journal. Canadian Urological Association*. 2015:E631–E637. https://doi.org/10.5489/cuaj.2878.
2. Turunc T, Kuzgunbay B, Canpolat T. Ureteral fibroepithelial polyps with calculi: a case series. *J Med Case Rep*. 2008;2:280. https://doi.org/10.1186/1752-1947-2-280.
3. Williams T, Wagner B, Corse W, et al. Fibroepithelial polyps of the urinary tract. *Abdom Imag*. 2002;27:217–221. https://doi.org/10.1007/s00261-001-0066-z.
4. Sun Y, Xu C, Wen X, et al. Is endoscopic management suitable for long ureteral fibroepithelial polyps? *J Endourol*. 2008;1459:1462. https://doi.org/10.1089/end.2008.0060. July.
5. Lam JS, Bingham JB, Gupta M. Endoscopic treatment of fibroepithelial polyps of the renal pelvis and ureter. *Urology*. 2003;62(5):810–813. https://doi.org/10.1016/S0090-4295(03)00691-5. ISSN 0090-4295.