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An adult ureterocele complicated by a large stone: A case report

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ABSTRACT

INTRODUCTION: Ureterocele is a cystic dilatation of the lower part of the ureter. It is a congenital anomaly that is associated with other anomalies such as a duplicated system, and other diseases. It poses a great challenge owing to its numerous types and clinical presentations. Its incidence is 1 in every 4000 individuals. One of its presentations in the adult population is the presence of a stone, usually a solitary stone, inside the ureterocele.

CASE PRESENTATION: We are reporting a case of an adult ureterocele complicated by a large calculus; managed endoscopically with transurethral deroofing of the ureterocele followed by cystolitholapaxy. A literature review was also conducted.

DISCUSSION: The pathogenesis of ureteroceles is not well understood, however many proposed mechanisms exist with the incomplete dissolution of chwalla membrane being the most accepted one. The type of ureterocele and age at presentation will help guide the appropriate investigation and management, nevertheless certain goals of treatment should apply to all cases. Adult ureterocele is usually clinically silent but it may co-exist with other conditions such as a ureteral calculus and in these conditions it can be managed endoscopically.

CONCLUSION: Ureteroceles complicated by stones can be effectively managed with endoscopic resection or incision of the ureterocele coupled with stone removal, however long term follow up is required to monitor for hydronephrosis and iatrogenic vesicoureteric reflux.

1. Introduction

Ureterocele is a congenital abnormality with a cystic dilatation of the lower part of the ureter, often associated with other anomalies like a stenotic ureteric orifice or a duplicated system along with other clinical sequelae. They could lead to various effects with regard to obstruction, reflux, continence, and renal function [1]. Ureteroceles may be intravesical (orthotopic) or extravesical (ectopic) [2]. It occurs in 1 out of 4000 individuals and it is 4 times more common in females than in males. It remains a challenge in terms of diagnosis and treatment due to its variable types and clinical presentations [1]. We are reporting a case of a left intravesical ureterocele and a calculus within the ureterocele in an adult patient who was treated with transurethral deroofing followed by cystolitholapaxy and stone removal. This work has been reported in line with the SCARE criteria [3].

2. Case report

A 58-year-old male patient with hypertension and non-insulin-dependent diabetes mellitus, who presented to our academic institute complaining of mild intermittent left flank pain for 1 year, recently associated with few episodes of gross hematuria and dysuria but no other complaints. He has no previous surgical history. Laboratory investigation showed Hg 12 gm/dl, creatinine 1.1 mg/dl, normal coagulation profile, uric acid 8.1 mg/dl, urinalysis on admission showed few white blood cells but no red blood cells or bacteria. Abdominal x-ray showed semi radiopaque stone in the area of the bladder and another semi radiopaque stone in right kidney (Fig. 1). Urinary tract computerized tomography (CT) scan without contrast showed a large stone at the left vesicoureteric junction measured 2.5 × 2 cm in cross-section with marked left hydroureteronephrosis. It also showed a right staghorn stone filling the right renal pelvis and lower calyces measuring 2.7 × 3.2 cm causing moderate right hydronephrosis (Figs. 2 and 3). Urinary tract ultrasound showed the ureterocele and the stone within (Fig. 4). On the next day the patient underwent endoscopic operation under general anesthesia. The patient was put in lithotomy position, a 22F cystoscope was introduced into the bladder, the right ureteric orifice was identified and a large left intravesical ureterocele was

Abbreviations: CT, Computerized Tomography; US, UltraSound; UTIs, Urinary Tract Infections; IVU, IntraVenous Urography.

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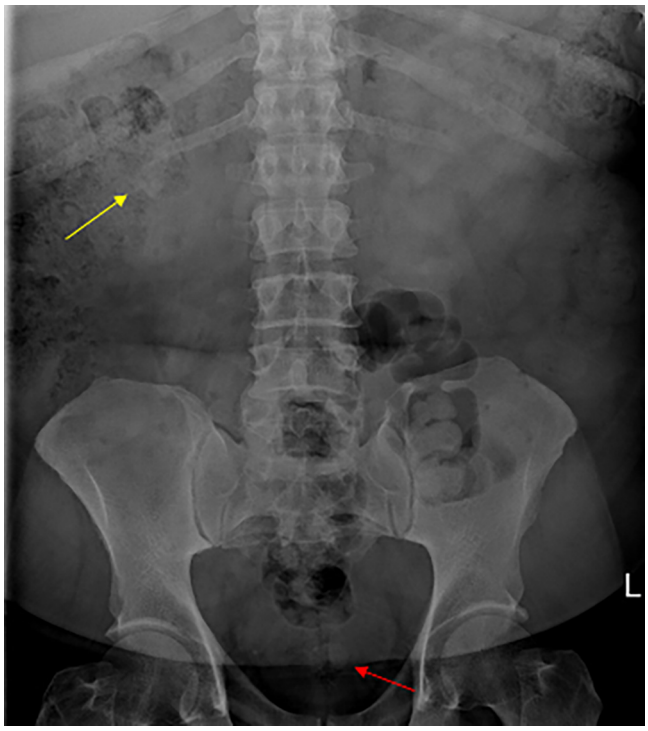

Fig. 1. Left vesicoureteral junction stone and the right staghorn stone.

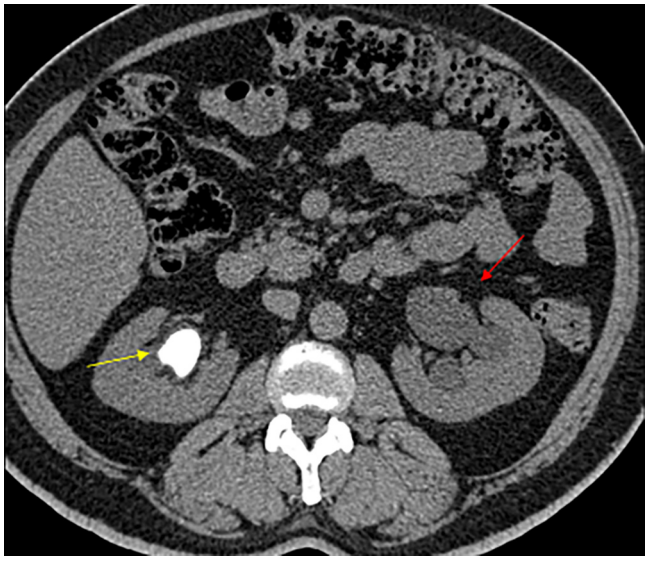

Fig 2. Left-sided moderate hydronephrosis and the right-sided staghorn.

seen with no apparent left ureteric orifice noticed which goes with the fact that most intravesical ureteroceles have stenotic orifices (Figs. 5 and 6), then a 24F resectoscope was inserted, deroofing of the ureterocele with cutting current was performed and the stone was visualized and nudged with the loop into the bladder (Figs. 7–10). Cystolitholapaxy was performed at the same session and stone fragments were removed (Figs. 11 and 12). The operation was concluded with insertion of a 3-way 20F Foley catheter and irrigation was started. The Foley catheter was removed the next day and postoperative abdominal x-ray and urinary tract CT scan without contrast showed no residual stone fragments in the bladder (Figs. 13 and 14).

Repeat renal and bladder US done at about three months postoperatively showed stable mild left hydronephrosis (Figs. 15 and 16).

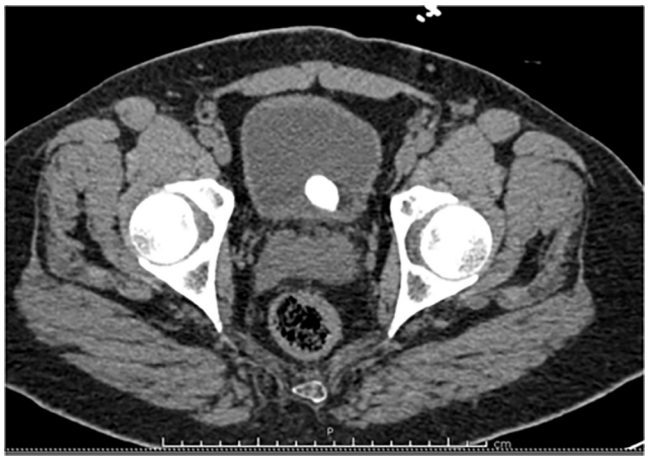

Fig. 3. Left sided 2.3 × 2 cm left vesicoureteric stone.

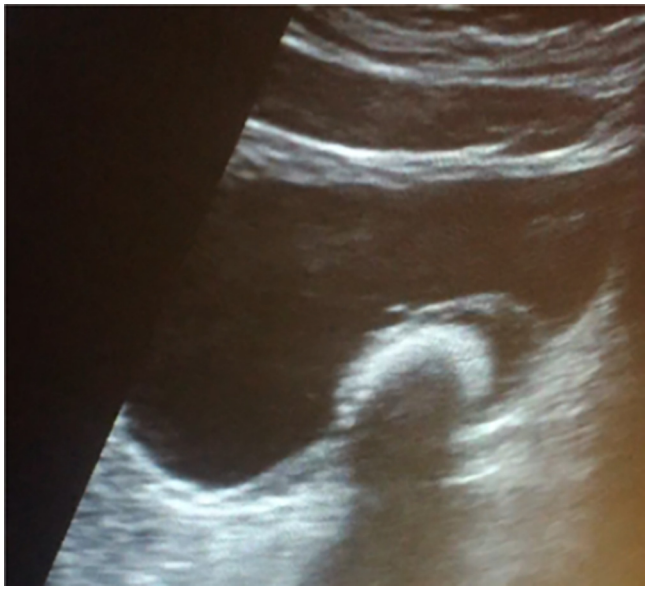

Fig 4. Bladder ultrasound showing the ureterocele and the stone inside.

Serum creatinine has been within normal range. We are planning to repeat renal US at 6 and 12 months. We are also planning to do micturating cystourethrogram at about 12 months postoperatively to check for any evidence of vesicoureteral reflux.

3. Discussion

Ureterocele is a cystic dilation of the distal aspect of the ureter that is located either within the bladder or spanning the bladder neck and urethra [2]. It is a developmental anomaly and while its pathogenesis is unknown, several theories have been proposed, however the most accepted mechanism is failure in regression of the Chwalla membrane which is a membrane between the urogenital sinus and the developing ureteral bud [4].

The incidence of ureteroceles is 1:4000 individuals, occurring 4 times more in females with a slight predominance on the left side and 10% of the cases being bilateral [5].

Ureteroceles have diverse presentations ranging from life-threatening sepsis, renal failure, recurrent urinary tract infections (UTIs), to no symptoms at all being detected incidentally or by antenatal ultrasonography [6]. These variable presentations are a reflection of the numerous types of ureteroceles, hence there are multiple classification systems such as the Stephens classification