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SINGLE SYSTEM BILATERAL URETEROCOELES PRESENTING WITH LOWER URINARY TRACT SYMPTOMS IN AN ADOLESCENT MALE: A CASE REPORT

Urology

Dr Aakash Adhikari M. Ch Urology Pdt, Regional Institute Of Medical Sciences Imphal, Manipur
Dr Pratik Sharan M. Ch Urology Pdt, Regional Institute Of Medical Sciences Imphal, Manipur
Dr Somarendra Khumukcham Associate Professor, Regional Institute Of Medical Sciences Imphal, Manipur

ABSTRACT

Introduction: Ureterocoele is a well-known paediatric urological condition population but remains a diagnostic challenge in adult population and represent cystic dilatation of distal ureteric segment. We present a case of an adolescent male with recurrent UTI and Lower urinary tract symptoms (LUTS) secondary to bilateral ureterocoeles with single system which was successfully treated endoscopically. **Case Presentation:** A 15-year-old male presented with recurrent UTI and LUTS for last 3 months. USG KUB showed bilateral ureterocoele with no obstructive findings. CT-urogram confirmed bilateral single-system and right intra-vesical ureterocoele without any hydroureteronephrosis. Patient went transurethral incision of bilateral ureterocoeles using Bugbee electrode. At follow-up visit, patient was asymptomatic with normal voiding pattern with no clinic-imaging signs of UTI. **Discussion:** Ureterocoele is often diagnosed in the antenatal or by post-natal period. In adults, the diagnosis is usually made incidentally due to recurrent urinary tract infections and intermittent flank pain secondary to hydronephrosis. Whereas paediatric ureterocoeles are often associated with duplicated collecting systems in non-orthotopic positions; adult ureterocoeles are mainly reported in unilateral single systems in intravesical orthotopic positions and often as an isolated abnormality. Moreover, bilateral ureterocoeles are seen in 10% cases. CONCLUSION: Adult patients with LUTS must be evaluated by proper imaging, and a suspicion of lower urinary tract anomaly like ureterocoele should be kept in mind while evaluating.

KEYWORDS

Bilateral ureterocoele, adult patients, Single system

INTRODUCTION

Ureterocoele is a well-known paediatric urological condition population but remains a diagnostic challenge in adult population. **Ureterocoele** represent abnormal congenital dilatation of the distal-most portion of the ureter; and it may either be extra-vesical or remain entirely inside the bladder i.e. intra-vesical. Associated urinary tract abnormality especially duplex system is frequently present.

Its prevalence ranges between 1/500 to 1/4000 patients with a wide variety of clinical presentations [1] We present a case of a 15-year-old male patient with recurrent UTI and Lower urinary tract symptoms (LUTS) secondary to bilateral ureterocoeles with single system which was successfully treated endoscopically. This case finds its uniqueness due to its bilateral presentation with a single pelvi-collecting system. Also, in majority, ureterocoeles are associated with ectopic ureters and in a minority of cases (specially in adults) ureterocoeles are seen as an isolated abnormality.

Case Presentation

A 15-year-old male presented to our OPD with LUTS (frequency and urgency) for last 3 months. He also had history of recurrent UTI last year for which he was treated conservatively without any imaging studies.

No antenatal evidence of hydronephrosis. On physical examination, there were no relevant findings except for mild tenderness on deep palpation at suprapubic region. Routine examination of urine showed pH-5.5, Pus cells 6-8/hpf, Epithelial cells 5-7/hpf and oxalate crystals. Urine culture showed presence of E. Coli $>10^5$ CFU/ml; sensitive to nitrofurantoin/ fluroquinolones/ piperacillin-Tz/aminoglycosides/ cefoperazone-sulbactum/carbapenems. Routine investigation of blood including KFT was normal.

USG KUB- Bilateral ureterocoele (Rt=16x12 mm; Lt=15x10mm); Bilateral renal microliths (3mm in both the middle calices) No evidence of any hydroureteronephrosis.

To rule out duplex system, a triphasic CT-urogram was performed and it confirmed bilateral single-system and right intra-vesical ureterocoele of 15x10 mm; Bilateral excretion of both kidneys were normal. No urolithiasis or hydroureteronephrosis was found.

Patient underwent Transurethral incision of bilateral ureterocoeles. On cystoscopy, bilateral VUJ was not identified, and bilateral intra-vesical ureterocoele was identified (right being larger than the left). Rhythmic ballooning of ureterocoeles was noted with gush of urine jet passing with each contraction. Trigone was inflamed.

Using Bugbee electrode, transurethral incision of bilateral ureterocoele done. Ureteral stent was not placed, and a 16 Fr Foley catheter was put.

Patient had an uneventful post-operative period, and Foley catheter was removed on postop day-1; and patient was discharged on 2nd post-operative day with oral levofloxacin for 5 days.

At 3rd week follow-up visit, patient was completely asymptomatic with normal voiding pattern and renal function.

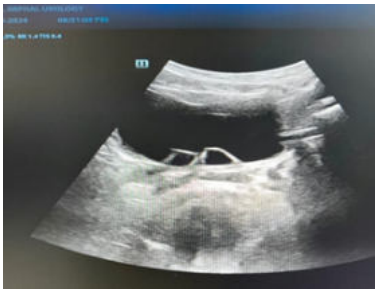

Fig.1: USG showing intra-vesical cystic structure at the site of both VUJ, that were expanding and contracting.

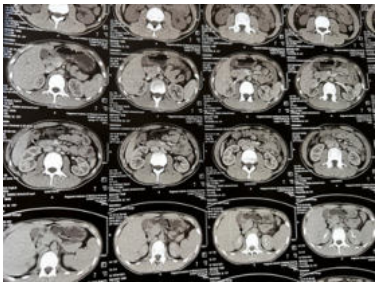

Fig.2: CT urogram showed normal PCS anatomy of both the kidneys with no evidence of hydroureteronephrosis or any scarring and feats of reactive pyeloureterititis.

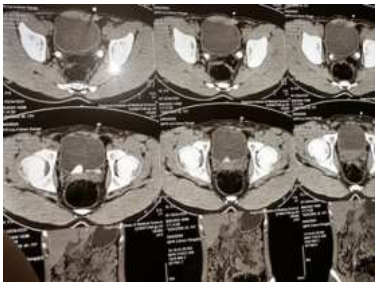

Fig.3: Axial view of CT urogram showing right intravesical cystic dilatation of intramural ureter suggesting of right intravesical ureterocoele.

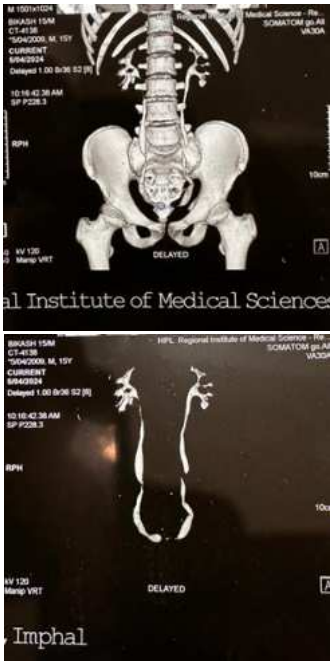

Fig. 4 and 5: Delayed phase of CT urogram showed only right ureterocoele, although film taken at a particular time frame had not shown intramural part of left ureter properly.

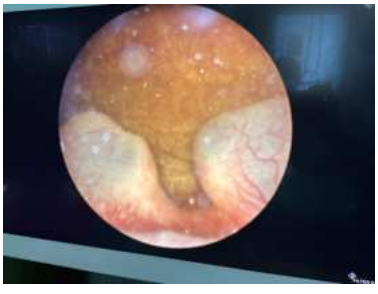

Fig.6: Cystoscopy showing bilateral intravesical ureterocoele with simultaneous expansion and contraction with gush of urine.

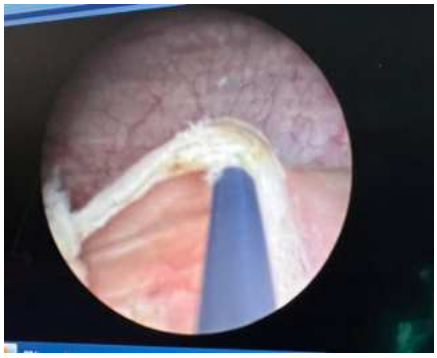

Fig. 7: Incision of ureterocoele done using a Bugbee electrode with any ureteral stent.

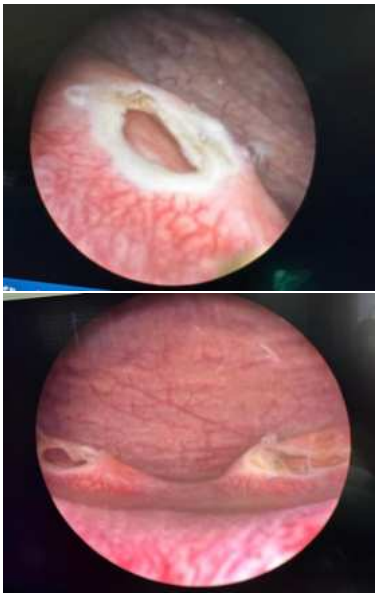

Fig. 8 and 9: Appearance of VUJ after incision. Note visualisation of posterior wall of intramural ureter can be seen through neo-VUJ.

DISCUSSION

Ureterocoele is a well-known entity among paediatric urologic population but remains a challenge in the adult population. Based on autopsy studies, its prevalence in the adult population ranges between 1/500 and 1/4000[1]

Ureterocoele is often diagnosed in the antenatal period by ultrasound, while in the postnatal period, it is usually diagnosed after evaluation of patients presenting with recurrent febrile urinary tract infection in the first month after birth [2]. In adults, the diagnosis is usually made incidentally due to recurrent urinary tract infections and intermittent flank pain secondary to hydronephrosis.

Whereas paediatric ureterocoeles are often associated with duplicated collecting systems in non-orthotopic positions; adult ureterocoeles are mainly reported in unilateral single systems in intravesical orthotopic positions and often as an isolated abnormality [1,2] In adults, the mean age of presentation ranges from the third to the fifth decade. Females are 4-7 times more commonly affected than males. Bilateral ureterocoeles are seen in 10% of cases only [3]

The most accepted theory is a failure in the Chwalla membrane regression, a membrane between the urogenital sinus and the developing ureteral bud [4].

Presenting symptoms vary greatly but urinary tract infections remain the most common [2] It can range from frequent UTI, pyelonephritis, obstructive voiding symptoms, retention, failure to thrive in paediatric population, haematuria, cyclic abdominal pain, urolithiasis; and may complicate as permanent renal dysfunction, non-functional moiety and even urosepsis.

Ureterocoeles can either be intravesical/ simple (25%, mostly adult) occurring at the normal VUJ, or extravesical/ ectopic (75%, mostly paediatric and associated with duplex system) occur ectopically low and medial, near bladder neck/urethra.

Treatment options vary but most favour a low transverse smiling incision with Collin's knife.[5] Recently, Holium and KTP lasers have also been used.[6]

Other approaches such as simple puncture or endoscopic unroofing with the resectoscope have also been described. Literature available have reported rate of developing postoperative vesicoureteral reflux (VUR) in 0-33% patients and most cases resolved spontaneously at 6 months of follow-up [7], hence reinforcing the need to investigate adult VUR only in symptomatic post-operative patients. In our patient's case, we opted for a transurethral unroofing technique as the ureterocoele had been prolapsing and causing urinary retention. A "smiling" incision was not performed since excess remnant tissue

associated with the low transverse "smiling" incision has been reported to prolapse, requiring a second procedure [8]

Here we have presented a case of isolated bilateral ureterocoele with single system in an adolescent male presenting with LUTS. In our case, the patient underwent transurethral incision and unroofing of both ureterocoeles without placement of any ureteral stent.

CONCLUSION

Any adult patients presenting with LUTS must be evaluated by proper imaging. Suspicion of lower urinary tract anomaly like ureterocoele must be kept in mind when evaluating patients with LUTS and recurrent UTI. Exclusion of duplex system must be done before planning of definitive management.

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