Ureterocele Causing Recurrent Urinary Tract Infection: A Case Report

Authors:- Dr Sanaullah Khan

Physician , Subdistrict Hospital , Basmat . Dist Hingoli

Abstract

We report a case of a 45-year-old male with recurrent urinary tract infections secondary to a left ureterocele, illustrating the clinical implications of this congenital anomaly. Despite recurrent symptoms managed with antibiotics, definitive diagnosis was achieved through ultrasound and CT urography, which confirmed the ureterocele. The management involved antibiotic therapy and surgical intervention by endoscopic puncture, leading to symptom resolution and prevention of further infections. This case highlights the importance of considering ureterocele in the differential diagnosis of recurrent UTIs, particularly when initial management fails to provide lasting relief.

Keywords:- Ureterocele, Recurrent urinary tract infection, Diagnostic Imaging, Endoscopic surgical procedures

Access this Journal Online

Quick Response Code

Website: www.ijomcr.net

Email:ijomcr@gmail.com

INTRODUCTION

Ureterocele is a congenital anomaly of the distal ureter that presents as a cystic dilation of the distal submucosal ureter within the bladder.[1] This condition can impair urine drainage from the upper urinary tract, leading to urinary stasis and subsequent complications such as infection, stone formation, and hydronephrosis. Ureterocele has a variable clinical presentation ranging from asymptomatic cases discovered incidentally to severe urinary tract obstruction.[2]

Corresponding Author:
Dr Sanaullah Khan
Physician , Subdistrict Hospital , Basmat . Dist Hingoli

The incidence of ureterocele is approximately 1 in 500 to 1 in 12,000 births, with a higher predilection in females and Caucasians. This condition can be associated with other urinary tract anomalies, including duplex collecting systems.[3] Ureteroceles are often classified based on their location and extent; they can be orthotopic (within the bladder) or ectopic (extending into the urethra), and simple or ectopic, depending on whether they involve a single ureteral orifice or a duplex system.[4]

Clinically, patients with ureterocele can present with a spectrum of symptoms such as flank pain, dysuria, frequent urination, and urinary tract infections (UTIs), which are recurrent in nature as seen in our case. The diagnosis is primarily made through imaging techniques such as ultrasound, which may show a cystic mass within the bladder, and confirmed with further imaging like intravenous pyelography (IVP) or CT urography. An important diagnostic finding in ureterocele includes the "cobra head" sign observed during cystourethrography, representing the prolapsed ureterocele within the bladder.[5]

In the context of our case, the patient's recurrent urinary tract infections highlight a common yet significant clinical consequence of ureteroceles due to the associated urinary stasis and incomplete bladder emptying.

CASE REPORT

A 45-year-old male patient with a notable medical history of recurrent UTIs presented with complaints of dysuria and lower abdominal pain. On physical examination, he was found to have suprapubic tenderness without flank pain or costovertebral angle tenderness. The patient reported these symptoms had been recurring intermittently over the last three years, with partial relief following standard antibiotic treatments.

Diagnostic work-up included a renal ultrasound that revealed a left-sided ureterocele (Figure 1).

Figure 1 :- Ultrasound of cystic structure projecting into the bladder near the normal location of the vesicouereteric junction suggestive of left sided ureterocele.

Subsequent CT urography confirmed the presence of a simple ureterocele without evidence of a duplex collecting system. The ureterocele exhibited characteristic features such as a homogenous fluid-filled mass within the bladder. Urinalysis was consistent with infection, showing pyuria and bacteriuria; urine culture isolated E. coli, common in urinary tract infections.

The management strategy involved antibiotic therapy for the acute infection, followed by surgical intervention. The patient underwent endoscopic puncture of the ureterocele, aimed at relieving obstruction and preventing further episodes of UTI. Post-operative follow-up indicated significant improvement with resolution of symptoms and no further episodes of UTI at the 6-month follow-up.

DISCUSSION

Ureterocele represents a unique challenge in urological practice due to its varied presentation and the complexities involved in its management. This case of a 45-year-old male with recurrent UTIs due to a simple, orthotopic ureterocele highlights several key aspects of the condition and emphasizes the importance of a tailored approach to management.

While ureteroceles are more commonly reported in females and often diagnosed in the pediatric population, this case underscores the relevance in adult males, an atypically represented demographic.[6] The patient's repetitive symptomatic presentation with UTIs is reflective of the natural history of untreated ureteroceles, where impaired drainage from the upper urinary tract leads to urinary stasis, providing a nidus for infection and potential stone formation. This underscores the necessity for heightened clinical suspicion in recurrent UTI cases, particularly when they are resistant to conventional treatment modalities.

The identification of a ureterocele on ultrasound followed by confirmation with CT urography in this patient was instrumental in defining the anatomy and guiding management. This aligns with current guidelines that emphasize the role of imaging in diagnosing ureteroceles. The "cobra head" sign, although not specifically identified in this case, remains a hallmark imaging finding during cystourethrography. However, evolving imaging modalities like CT urography offer detailed anatomical insights, especially in adult patients where other imaging signs may be equivocal.[8]

Management strategies for ureterocele depend on several factors including symptomatology, ureterocele type, associated anomalies, and the presence of complications like infection or renal function impairment. In the absence of duplex systems or ectopic locations, endoscopic puncture remains a favourable initial treatment choice due to its minimally invasive nature and effectiveness in relieving obstruction, as demonstrated in this patient’s satisfactory post-operative outcome.[9]

This case reinforces the efficacy of endoscopic puncture, which was followed by significant clinical improvement and resolution of recurrent infections. It is essential, however, to discuss the potential for recurrence or persistence post-procedure, which necessitates close monitoring and possibly further interventions, such as ureteral reimplantation or partial nephrectomy in cases of non-functioning upper pole moieties associated with duplex systems. [10]

Long-term follow-up in patients treated for ureterocele is crucial to assess for potential recurrence of symptoms or complications arising from the initial treatment. This patient’s follow-up at 6 months showing no recurrent UTIs is promising but highlights the need for prolonged surveillance.

CONCLUSION

This case illustrates the complex interplay between clinical presentation, diagnostic challenges, and management decisions in the treatment of ureterocele in an atypical patient demographic. It emphasizes the importance of considering ureterocele in the differential diagnosis of recurrent UTI in adults and highlights the role of tailored imaging and therapeutic strategies in optimizing outcomes. Moving forward, further studies could focus on long-term outcomes of different treatment modalities in adult patients with ureterocele, providing a broader evidence base to guide clinical decisions.

REFERENCES

1. Stephens F.D. Etiology of ureteroceles and effects of ureteroceles on the urethra. Br. J. Urol. 1968;40:483–487.
2. Sander J.C., Bilgutay A.N., Stanasel I., Oh C.J., Janzen N., Gonzales E.T. Outcomes of endoscopic incision for the treatment of ureterocele in children at a single institution. J. Urol. 2015;193:662–666. (PMC free article] [PubMed)
3. Agha R.A., Fowler A.J., Saetta A., Barai I., Rajmohan S., Orgill D.P., The SCARE Group The SCARE Statement: consensus-based surgical case report guidelines. Int. J. Surg. Part A. 2016;36(December):396.
4. Jeffrey P.W. Embryogenesis of ureteral anomalies: a unifying theory. Aust. N. Z. J. Surg. 1988;58:631–638.
5. Schultza K., Toda L.Y. Genetic basis of ureterocele. Curr. Genomics. 2016;17:62–69.
6. Shokeir A.A., Nijman R.J.M. Ureterocele: an ongoing challenge in infancy and childhood. BJU Int. 2002;90:777–783.
7. Glassberg K.I., Braren V., Duckett J.W. Suggested terminology for duplex systems, ectopic ureters and ureteroceles. Reports of the Committee on Terminology, Nomenclature and Classification. American Academy of Pediatrics. J. Urol. 1984;132:1153–1154.
8. Merlini E., Chiesa P.L. Obstructive ureterocele-an ongoing challenge. World J. Urol. 2004;22(June):107–114.

9. Coplen D., Duckett J.W. the modern approach to ureteroceles. J. Urol. 1995;153:169.
10. Murshidi M.S. Orthotopic and ectopic ureteroceles in children. Int. Urol. Nephrol. 1990;22(1):45–56.

Author Contribution:-SK: Concept Of Design; Manuscript Preparation; Revision Of Manuscript; Review Of Manuscript

How to cite This Article:-

Sanaullah Khan, **Ureterocele Causing Recurrent Urinary Tract Infection: A Case Report, Int. j. med. case reports. 2024; 5 (2): 19-22**