

Original Research Article

A Case of Ureterocoele with Cobra Head Sign

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Abstract: A 20-year-old male with a history of fever, lower abdominal pain and haematuria since 2 weeks. He complained of failure to void completely, dysuria which aggravated since 1 week. Provisional diagnosis given by clinicians was urinary tract infection and suggested ultrasonography examination of abdomen. Ultrasonography examination and contrast enhanced CT revealed features consistent with ureterocoele with cobra head sign.

Keywords: Cobra head, ureterocoele, vesicoureteric junction, hydroureteronephrosis, urinary tract infection, lower abdominal pain.

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INTRODUCTION

A 20-year-old male with a history of fever, lower abdominal pain and haematuria since 2 weeks. He complained of failure to void completely, dysuria which aggravated since 1 week. Provisional diagnosis given by clinicians was urinary tract infection and suggested ultrasonography examination of abdomen. Ultrasonography examination and contrast enhanced CT revealed features consistent with ureterocoele with cobra head sign. Here we present a case of ureterocoele with cobra head sign

EXPERIMENTAL SECTION

Ultrasonography examination at the level of urinary bladder showed a cystic structure projecting into the bladder, from location of the right vesicoureteric junction (VUJ). Ultrasonography of the right kidney showed dilatation of the renal pelvis, calyceal system and ureter representing hydroureteronephrosis.

Contrast enhanced CT of the pelvis (delayed phase, axial view) showed a cystic structure

(representing cobra head) within the bladder with lumen separated from the contrast-filled bladder -filled bladder.

RESULTS AND DISCUSSION

The term ureterocoele refers to the congenital saccular dilatation of the terminal ureter induced from the persistence or incomplete dissolution of Chawalla's membrane with a resulting ureter meatal obstruction [1-4].

The anomaly can be detected at a very early stage by perinatal screening or, if the obstruction is minimal and without symptoms, it can be found in older children or adults.

The most common symptoms are: urinary tract infection, failure to thrive, abdominal pain, haematuria.

In adulthood, inflammation, kidney stones or cancer might cause an obstruction and dilatation of ureter, mimicking an ureterocoele; this condition is named pseudoureterocoele or acquired form [5].

The incidence of ureteroceles is approximately 1 in every 4,000 children, prevalent in females and on the left side; however in 10% of cases it is bilateral and its size varies from a few mm to several cm [6].

According to the renal collecting system, associated (unique or dual) ureteroceles are classified in single or duplex, both can be intra or extravascular. Based on the normal or abnormal urethral insertion they are classified into orthotopic or ectopic [6].

Generally, ectopic ureterocele is linked with a duplex collecting system, while an orthotopic ureterocele is associated with a simplex collecting system, which is usually found in adults.

Imaging techniques are crucial to identify this condition and all imaging modalities are able to recognize it. Traditionally, urography was used to evaluate the urinary tract and to detect ureteral lesions. A ureterocele can be visualised with a characteristic aspect (cobra-head sign or spring onion) caused by a radiolucent halo produced by the ureterocele's wall inside the bladder filled with contrast media [7]. Because of technology progresses, urography has been largely replaced by CT and echography.

In echography, a ureterocele is visualised as a cyst-like intravesical mass, near the margin of trigone and contiguous with a dilated ureter. The wall of the ureterocele is thin and echogenic and its base is usually narrow.

Enhanced CT and MRI may be helpful to better outline urinary tract anatomy, especially to recognize duplicated renal systems, the degree of hydronephrosis, the cortical thickness and the functional ability of the kidneys to excrete contrast material [3].

Surgical intervention is needed to relieve obstruction and preserve the renal function, to prevent infection or reflux.

Transurethral puncture/incision is most often enough to solve simpler cases; open procedures are reserved for more complex types and include partial/total nephrectomy, ureterectomy and bladder reconstruction [8, 9].

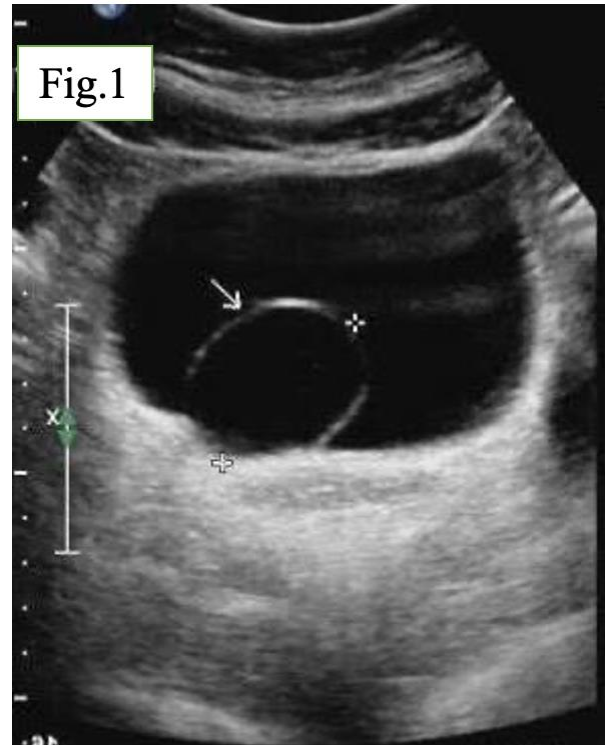


Fig-1: Ultrasonography at the level of urinary bladder shows a cystic structure projecting into the bladder, from location of the right vesicoureteric junction (VUJ)

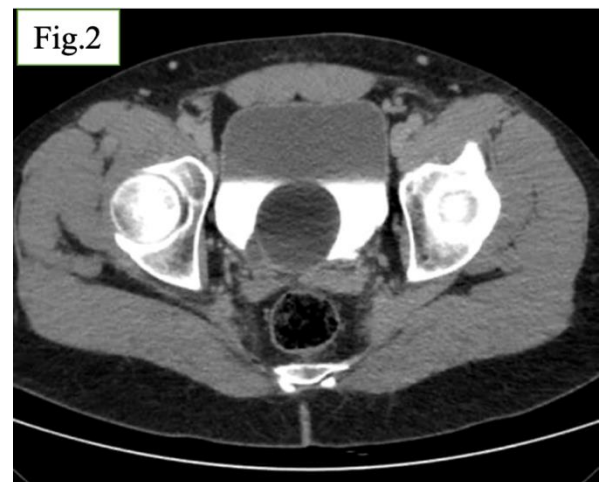


Fig-2: Contrast enhanced CT of the pelvis (delayed phase, axial view) shows a cystic structure (representing cobra head) within the bladder with lumen separated from the contrast-filled bladder



Fig-3: Ultrasonography of the right kidney shows dilatation of the renal pelvis, calyceal system and ureter representing hydronephrosis

CONCLUSION

Here we present a case of ureteroceles with cobra head sign.

REFERENCES

1. Berrocal, T., López-Pereira, P., Arjonilla, A., & Gutiérrez, J. (2002). Anomalies of the distal ureter, bladder, and urethra in children: embryologic,

- radiologic, and pathologic features. *Radiographics*, 22(5), 1139-1164.
2. Peters, C. A., & Schluskel, R. N. Cathy Mendelsohn Ectopic ureter, ureterocele and other anomalies of the ureter. *Campbell-Walsh Urology*. 10th edi 3235-66.
3. Potenta, S. E., D'Agostino, R., Sternberg, K. M., Tatsumi, K., & Perusse, K. (2015). CT urography for evaluation of the ureter. *Radiographics*, 35(3), 709-726.
4. Chwalla, R. (1927). The process of formation of cystic dilatation of the vesical end of the ureter and of diverticula at the ureteral ostium. *Urol Cutan Rev*, 31, 499-504.
5. Hanna, M. K. (1995). Pseudoureterocele: potential for misdiagnosis of an ectopic ureter as a ureterocele. *Br J Urol*, 76(3), 412.
6. Bruézière, J. (1992). Ureteroceles. *Ann Uro (Paris)*, 26(4), 202-211.
7. Chavhan, G. B. (2002). The cobra head sign. *Radiology*, 225(3), 781-782.
8. Gander, R., Asensio, M., Royo, G. F., & Lloret, J. (2016). Evaluation of the initial treatment of ureteroceles. *Urology*, 89, 113-117.
9. Derisavifard, S., Motamedinia, P., Okeke, Z., & Smith, A. (2015). Diagnosis and Management of a Prolapsing Intravesical Ureterocele in a Man. *Journal of endourology case reports*, 1(1), 9-10.

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