Cobra Head Sign

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BRIEF HISTORY

A 24 year-old Taiwanese woman presented at our urology outpatient clinic with dysuria, hematuria and suprapubic pain for one week. Urinalysis showed pyuria and marked hematuria. The presence of red blood cells persisted after treatment with an effective oral antibiotic. Excretory urography demonstrated the cobra head sign (Fig. 1), which is characterized by a bulbous dilatation of the distal end of the left ureter together with a surrounding radiolucent halo. Transurethral surgery was advised, however, the patient declined and has been followed since at the outpatient clinic.

COMMENT

The cobra head sign is classically seen when a unilateral intravesical ureterocele is present. This type of ureterocele is also termed orthotopic, since it arises from a ureter with a normal insertion into the trigone. The definitive etiology of the ureterocele remains unclear.

Ureteroceles could be classified as intravesical or ectopic [1,2]. Intravesical ureteroceles can be unilateral or bilateral. They are usually diagnosed in adults; hence, they are also called adult-type ureteroceles. They occur more often in women than in men [3]. Ureteroceles are usually considered congenital because one of the causes is a narrowed ureteral orifice. However, not all unilateral ureteroceles are congenital; inflammation, infectious disease or trauma may result in fibrosis and cause the development of the ureterocele. Most intravesical ureteroceles are incidental findings in asymptomatic adults. When large, ureteroceles can cause obstruction of the bladder neck, together with obstruction of the ipsilateral ureter. This can results in an increased formation of calculus and complicated urinary tract infection, which is what occurred in our case.

Ectopic ureteroceles are almost always seen in association with duplex ureters and arise from the upper-pole of the ureter; these are usually diagnosed in childhood. The orifice is often stenotic, which results in an obstructed and often non-functioning system. However, though the cobra head sign is classic for an intravesical ureterocele, only about half of such cases will show this sign when an imaging study is carried out [4]. In conclusion, the cobra head sign can be used to establish a diagnosis of an ureterocele.

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Fig. 1. Excretory urogram obtained 15 minutes after the administration of intravenous contrast material demonstrates the bulbous dilatation of the distal end of the left ureter, which is surrounded by radiolucent halo.