Photo Clinic

Cobra-Head Stone in Single-System Ureterocele

Dear Editor,

A 46-year-old woman presented to the Urology Clinic, Department of Urology, Hitit University Çorum Training and Research Hospital, Çorum, Turkey, with right-flank pain of 4 months' duration. The patient's medical history was unremarkable. Plain radiography of the kidney, ureter, and bladder demonstrated ureteral stones in the right distal location (figure 1). Intravenous urography showed ureteral stones with the characteristic appearance of a cobra head (figure 2). Computed tomography confirmed the distal ureteral stones, 5 and 11 mm in size (figure 3). The patient was treated with endoscopic ureterocele

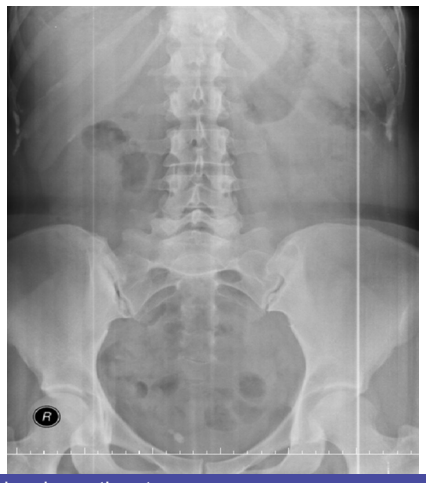

Figure 1: Kidney ureter bladder radiography shows the stones.

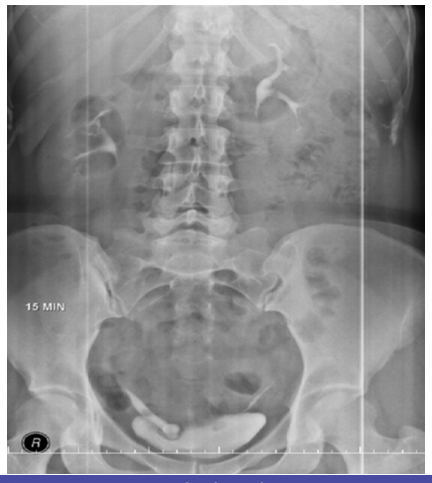

Figure 2: Cobra-head stone is shown in intravenous urography imaging.

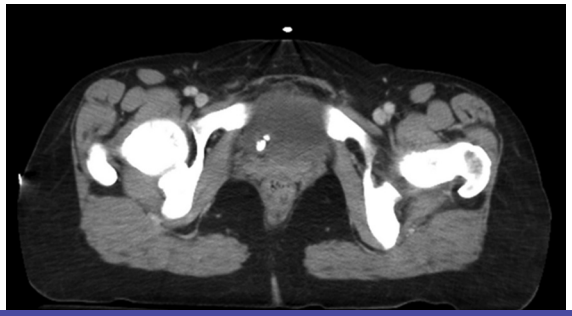

Figure 3: Computed tomography imaging reveals distal ureteral stones.hdoi.

incision and stone extraction. At 3 months postoperatively, she had no urinary system-related complaints. A signed consent form was obtained from the patient.

A ureterocele is a submucosal part dilatation of the ureter in the intramural area.[1] Although they can present in a single system, ureteroceles are more commonly seen in the duplex urinary system. The clinical presentations of ureteroceles are urinary tract infections causing upper-pole destructions and renal scarring in the duplex system. Classic ectopic ureteroceles in children are associated with duplex renal collecting systems. Intravesical ureteroceles are commonly seen in asymptomatic adults and are usually associated with a single ureter which normally inserts into the urinary bladder trigone. Single-system ureteroceles may be unilateral or bilateral.[2] The overall incidence of calculi in ureteroceles is about 4% to 39%.[3] The main causes of calculi are the dysfunction of ureteral motility and urinary stasis. The other risk factors for stone formation are ureteral atony, occlusion, family history, and urinary tract infection.[1]

Ultrasound and intravenous pyelograms have diagnostic efficacy in 50% to 70% of the cases.[1] In ultrasound imaging, irregular and edematous walls and adequate openings of the ureterocele can be detected by radiologists. The characteristic snake-like or cobra-head image can be detected in the plain radiography with contrast of the kidney, ureter, and bladder.[4] When a ureterocele is opacified with the contrast material, it tends to mimic the cobra-head sign protruding into the bladder lumen.[2] This imaging sign can be also detected in magnetic resonance urography and computed tomography urography. In pediatric patients, the diagnosis is made by antenatal ultrasonography.[5]

The most common treatment option for an ureterocele is transurethral incision and the removal of the stones in adults.[1] The excision of the ureterocele can be performed with open or endoscopic surgery. This surgical choice has minimal risk of iatrogenic vesicoureteral reflux and other complications associated with surgery. In pediatric patients, endoscopic incision, upper-pole heminephrectomy, and partial upper ureterectomy are alternative treatments.[5]

Conflict of Interest: None declared.

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