

Prolapse of a single-system ureterocele causing urinary retention in an adult woman

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Received: 16 September 2012 / Accepted: 29 December 2012 / Published online: 16 February 2013
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Abstract A 41-year-old woman presented with pelvic pain and a bulge from her urethra. On physical examination, she was noted to have a mucosal bulge from her urethra that intermittently squirmed urine. Further imaging showed single systems on both sides, no stones, and mild left-sided hydroureteronephrosis with a ureterocele. The ureterocele was endoscopically incised and excised, resolving her symptoms.

Keywords Ureterocele · Prolapse · Urinary retention

Case report

A 41-year-old G3P3 woman presented to the clinic with pelvic pain and complaints of a bulge protruding from her urethra. She had a history of stress urinary incontinence and stage 2 cystocele for which she had undergone an anterior colporrhaphy and midurethral synthetic sling approximately 1 year ago. Over the past year, she had noted a pea-sized bulge from her urethra. Initially, it had been reducible, but since then it had grown in size and was more difficult to reduce; when it was out, she was unable to void. She had started to have intermittent gross hematuria with dysuria. She had been recently diagnosed with pyelonephritis and treated with ciprofloxacin, with good results. Her past medical and surgical history is significant for stress headaches, bilateral tubal ligation, and uterine ablation, as well as prolapse repair and sling. Physical examination was significant for palpable submucosal mesh under the distal vaginal

wall, but no evidence of extrusion. A urethral mass was noted prolapsing out of the meatus with a small opening squirting urine (Fig. 1a). After reduction of the mass, office cystoscopy was performed demonstrating a large left ureterocele. A CT urogram was performed to evaluate the upper tracts; it was significant for mild left hydroureteronephrosis with a left ureterocele (Fig. 2). She underwent transurethral endoscopic incision of the ureterocele with improvement in her symptoms and no difficulty or pain with voiding. However, on her postoperative visit, she was noted to have a flap of tissue coming from her urethra, which was excised cystoscopically (Fig. 1b, 1c). To date, she has had improvement in her pain, dysuria and no further infections.

Discussion

Ureteroceles are cystic dilations of the distal ureter. The exact mechanism of formation has not been completely defined, but it is thought that ureteroceles form because of defective ureteral maturation. There is a female predominance and it is most present during childhood with urinary tract infections or may be noted on prenatal imaging. Most are often associated with a duplicated system, ectopic ureter, vesico-ureteral reflux or ureteral obstruction. Ninety percent of ectopic ureteroceles are associated with the upper moiety of a duplex collecting system and the remainder are associated with a single system. In the simplest classification, ureteroceles are classified as intravesical or extravesical. When diagnosed in adulthood, they are often intravesical, rarely cause obstruction, and are typically associated with a single system from a normal appearing kidney [1].

Prolapse of a ureterocele has been previously reported in both the pediatric and adult populations [2–4], but remains

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Fig. 1 **a** Prolapsed ureterocele seen coming out of the urethra with a squirt of urine (arrow). **b** Remnant of the ureterocele seen coming out of the urethra post-endoscopic incision. **c** Ureterocele sac seen emanating from the urethra

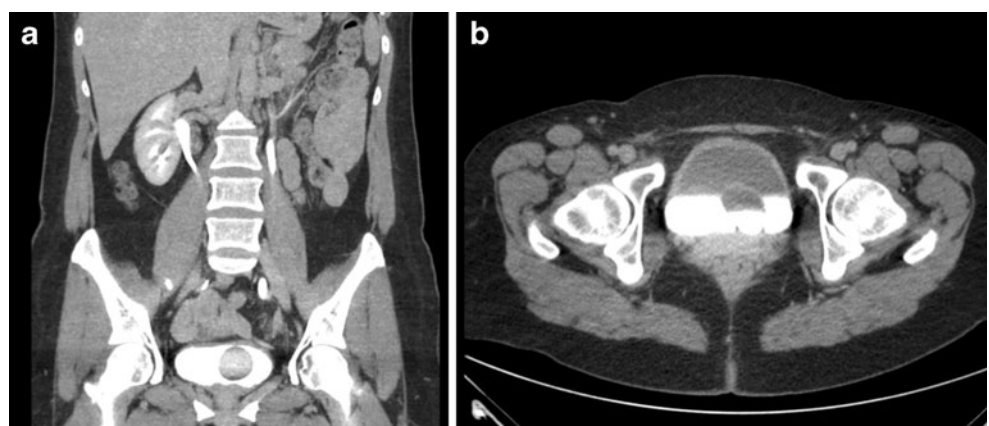


an uncommon initial presentation. In the adult population, management should be driven by symptoms and renal function. If the kidney is nonfunctioning, nephrectomy with completion ureterectomy is recommended. In asymptomatic patients without recurrent infections and normal renal function, it is reasonable to observe. Owing to stasis of urine and an atonic ureter, stones are more likely to form in the ureterocele; however, this is more common in men. These patients generally present with back pain. Recommended treatment in these cases is endoscopic incision and laser fragmentation of the stones. Incision of a ureterocele can theoretically result in vesico-ureteral reflux (VUR), but, in the series reported, none of the patients

developed VUR and treatment was well-tolerated [2, 5]. Depending on its size, endoscopic excision of actual ureterocele tissue may be required after trans-urethral incision as the decompressed ureterocele membrane may prolapse through the urethra, resulting in urinary symptoms, dysuria or irritation.

Pelvic pain after urogynecological surgery can be due to a variety of causes and physical examination is important to determine the exact etiology. Asymptomatic ureteroceles in the adult population are uncommon and prolapse through the urethra is even rarer. Treatment should be based on symptoms and renal function and consists of trans-urethral incision and excision if needed.

Fig. 2 **a** CT urogram, excretory phase showing mild left hydronephrosis and the ureterocele. **b** Axial view showing the ureterocele in the bladder



Conflict of interest None.

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