

Radiologic findings of a traumatic urethral diverticulum with stones in an infertile male patient

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ABSTRACT

Urethral diverticulum is rarely encountered in male patients. Although postmicturition dribble, pain and infection are usually present, infertility is rarely reported in urethral diverticulum. We present a case with urethral diverticulum associated with infertility, which was diagnosed radiologically.

Key words: • urethra • diverticulum • male infertility

Urethral diverticulum is rarely encountered in male patients, and usually is acquired. Long-term urethral catheterization, infection, and trauma are the most common causes of urethral diverticulum in male patients. In 4–10% of cases, stone formation in the diverticulum has been reported. Fluoroscopic imaging and urethroscopy are useful in the diagnosis of diverticulum.

In this report, we present ultrasonography (US), retrograde urethrography, and magnetic resonance imaging (MRI) findings of a proximal urethral diverticulum with multiple stones in a male patient.

Case report

A 40-year-old man, who had been followed for infertility, presented with the complaint of lack of ejaculation during sexual intercourse. Medical history revealed perineal trauma and hematuria as the result of a fall on a metal surface when he was a child. Scrotal Doppler US examination, pelvic MRI, and retrograde urethrography were performed.

Doppler US performed in the investigation of infertility revealed a sac 6 cm in diameter, containing multiple stones, and having a posteriorly located acoustic shadow (Fig 1). To determine the relationship of the sac to the urethra, pelvic MRI and retrograde urethrography were performed. Pelvic MRI showed a 7 x 3.5 cm diverticulum in the proximal penile urethra, and multiple millimetric stones within the diverticulum (Fig. 2). Prior to scheduled surgery, retrograde urethrography confirmed MRI findings (Fig. 3).

Cystourethroscopy was performed with the patient in the lithotomy position. There was no urethral stricture distal to the diverticulum. The neck of the diverticulum was large, and multiple stones, the largest of which was 10 mm in diameter, were observed within the diverticulum. A 3-cm vertical incision was made on the perineum over the diverticulum. The walls of the diverticulum were dissected, the diverticulum was opened with a longitudinal incision, and stay sutures were placed. The stones were removed. A 20 Fr Foley catheter was inserted into the urethra, and the walls of the diverticulum were trimmed. The urethra was closed with 4.0 vicryl sutures. A Penrose drain was inserted, and skin was closed. The drain was removed on postoperative day 3, and Foley catheter was removed on postoperative day 15. The postoperative period was uneventful.

Discussion

Urethral diverticulum was first described by Watts in 1906 (1). It is rare in males, and most cases are acquired (90%). Although there is no standard classification, it can be classified as congenital or acquired, or as primary or secondary. However, classification is theoretical, and factors such as localization, size, and presence of accompanying in-

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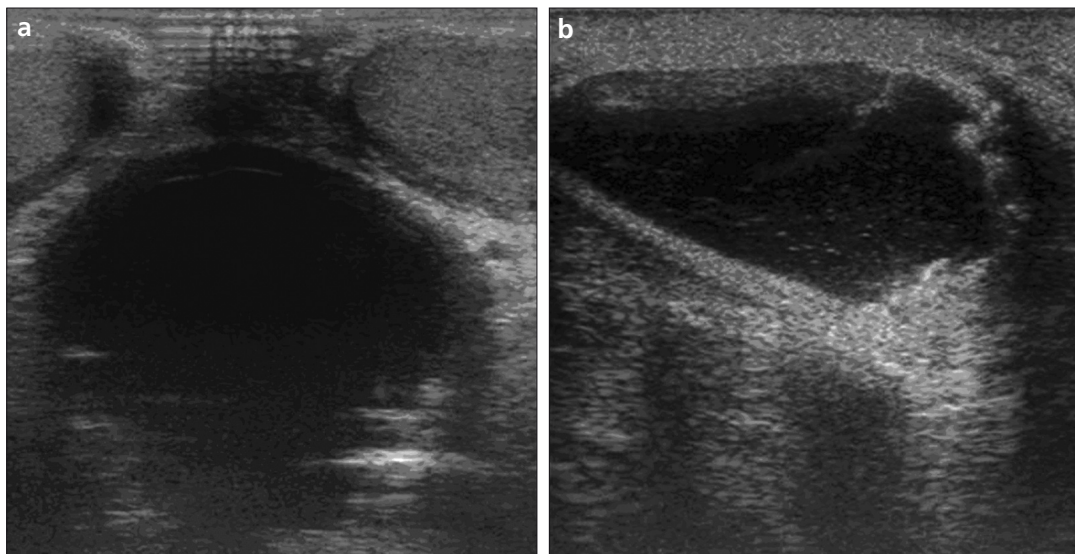


Figure 1. a, b. Ultrasonography shows a cystic lesion associated with the penile urethra.

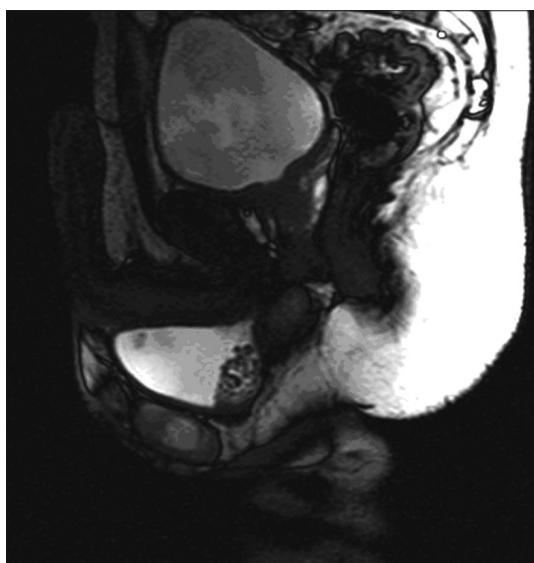


Figure 2. Sagittal T2-weighted MR image reveals a scrotal diverticulum that contains a stone.



Figure 3. Retrograde urethrography shows the urethral diverticulum.

fections are more important in the treatment of diverticula. It may cause infertility (2, 3).

The penoscrotal junction is the most common location of congenital or acquired urethral diverticulum; the diverticulum of our case was also located at this area. Infection, long-term urethral catheterization, trauma, and iatrogenic injuries are the most common etiologic factors in acquired diverticulum. In both congenital and acquired urethral diverticulum, patients usually present with pain, scrotal edema, postmicturition dribble, and susceptibility to urinary tract infections (4). In our case, the presenting complaint was infertility. It is possible that ejaculate was diverted into the

diverticular cavity, and the organic matrix formed stones in the diverticulum. Unfortunately, when our patient underwent surgical treatment for varicocele due to infertility two years ago, no intervention was performed for the diverticulum.

Cystic dilatation of Cowper's gland (syringoceles), epidermoid or epithelial inclusion cyst, and sequestration cyst should be thought in the differential diagnosis of urethral diverticulum. Dilatation of the bulbous urethra (5) is known as syringocele. Retrograde urethrography is the most valuable technique aiding in the differential diagnosis of urethral diverticulum.

In conclusion, urethral diverticulum is a rare condition in males; despite its

low incidence; however, it should be considered in the differential diagnosis in a patient with infertility.

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