CASE REPORT

Urethral diverticulum as a sequela of unrepaired penile fracture

Gregory R. Hanson, MD, J. Brantley Thrasher, MD

Department of Urology, University of Kansas Hospital, Kansas City, Kansas, USA

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Urethral diverticula are sac like dilations of the urethra and are classified as either congenital or acquired. While diverticula are commonly seen in female patients, they are rarely seen in men. The most common etiologies of male acquired diverticula include urethral trauma, stricture, abscess or post-hypospadias repair. We report a case of an acquired urethral diverticula secondary to unrepaired penile fracture and urethral injury and review the literature on the topic.

Key Words: urethral injury, diverticulum, penile fracture

Case report

A 53-year old male presented to urological attention for evaluation of urinary difficulty. Three years prior to evaluation, the patient experienced a penile fracture during intercourse. He was unable to void and a temporary suprapubic tube was placed. No radiographic or surgical intervention was undertaken at the time. Since his injury, the patient had increasing symptoms of urine welling up in his ventral urethra that necessitated manual pressure to express urine after voiding.

Physical examination revealed a circumcised phallus with a fluid filled bulge on the ventral aspect of his penis approximately 1 cm in diameter. An ultrasound revealed a 1.9 cm rent in the midportion of the urethra with a fluid collection in the penile shaft and corpus spongiosum. A retrograde urethrogram was obtained, Figure 1, showing a diverticulum measuring 4 cm x 1.5 cm approximately 4 cm from the urethral meatus. Cystoscopy revealed a large-mouth diverticulum with strictures at each end.

The patient underwent surgical repair. The diverticulum was isolated at its opening to the urethra, Figure 2. Ultimately this was transected revealing a 1.5 cm urethral defect. A vascularized pedicle flap of penile skin was tailored into position. A foley catheter was placed at the conclusion of the case. The patient was discharged home the next day and the catheter was removed at 3 weeks. He has since had resolution of his symptoms and reports his erectile function to be satisfactory for intercourse.

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Address correspondence to Dr. J. Brantley Thrasher, Department of Urology, MS 3016, University of Kansas Hospital, 3901 Rainbow Blvd, Kansas City, Kansas 66160 USA

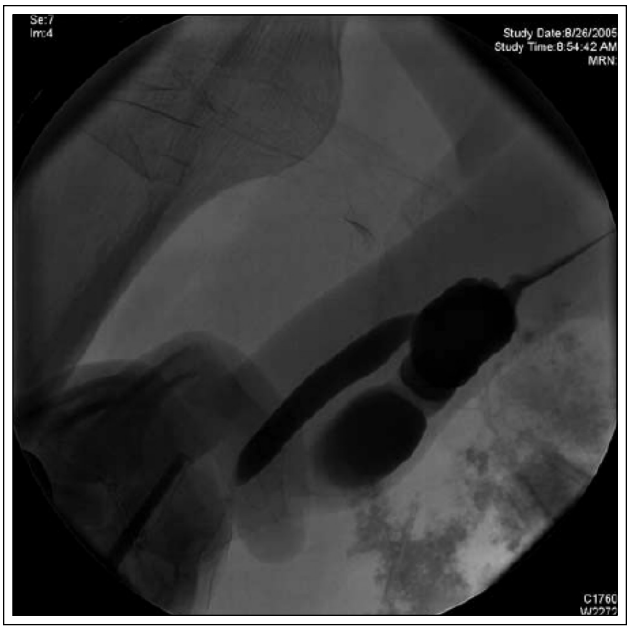

Figure 1. Retrograde urethrogram of urethral diverticulum.

Discussion

Male urethral diverticula are uncommon. A review of the literature shows that approximately 90% of urethral diverticula in men are acquired.[1] The most common etiology includes distal obstruction, trauma from penile clamps, false passage from instrumentation, urethral stricture, pelvic fracture or post-hypospadias repair.[2,3] In this patient, the etiology was of an undiagnosed and unrepaired urethral trauma secondary to penile fracture during intercourse.

The most common presenting symptoms are either a fluctuant mass of the perineum or ventral wall, peri-urethral abscess, recurrent urinary infections, post-void dribbling and dysuria.

As the diverticular walls are devoid of muscle fibers, these saculations can expand to large sizes. In this patient, the sac measured over 4 cm in length. A retrograde urethrogram is often diagnostic while cystoscopy often adds information as well.

Treatment of these lesions is surgical in nature and should address any concomitant urethral stricture or pathology present. Great care should be taken to ensure that the urethral lumen is not compromised. For large mouth defects, a flap should be used to ensure urethral caliber and adequate vascular supply.

This case also emphasizes the importance of early and appropriate intervention for penile fractures. In the literature, up to 38% of patients who experience a traumatic penile fracture also have a concomitant urethral injury.[4] A retrograde urethrogram is indicated in evaluation of these injuries. A degloving of the penis with repair of any corporal injury and evaluation of the urethra is the most common surgical approach. Patients who undergo surgical intervention typically have improved outcomes compared to those who are managed conservatively.[5]

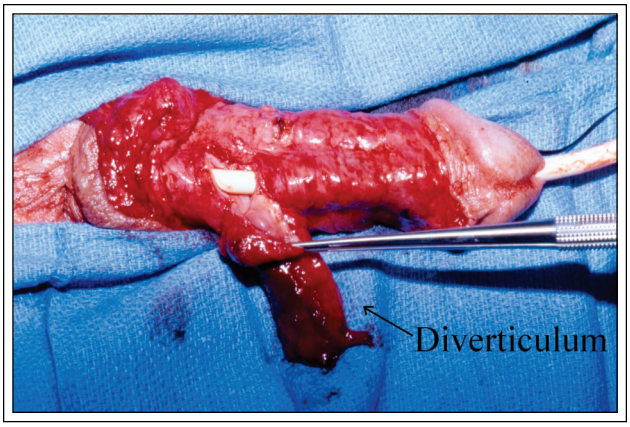

Figure 2. Urethral diverticulum with opening exposed.

This patient had complete resolution of his symptoms with no further voiding complaints. This patient was able to maintain adequate erectile function after injury with no evidence curvature. □

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