Urethral diverticulum presenting as a scrotal mass in a paraplegic male: Report of a case and review of the literature

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KEY WORDS

paraplegia ◗ retrograde urethrography ◗ mass ◗ urethral diverticulum

ABSTRACT

Male urethral diverticula are rare and can be congenital or acquired. We report a case of acquired urethral diverticulum presenting as a scrotal mass in a paraplegic male. On physical examination, the scrotal mass mimicked a primary intrascrotal lesion. However, on retrograde urethrography, the correct diagnosis was made. The patient had a small incontinent spastic bladder with a history of prolonged catheterization. Eventually, the urethral diverticulum was excised including the affected segment of bulbous urethra. Pathologic examination revealed the diverticulum wall lined by granulation and chronic inflammatory tissue.

INTRODUCTION

A urethral diverticulum may be defined as a sac-like protrusion or pocket, which is continuous with the lumen of the urethra. Male urethral diverticula are rare and can be congenital or acquired [1]. Congenital diverticula are usually located on the ventral surface of the penile urethra, whereas acquired diverticula may be found anywhere along the urethra The peno-scrotal junction is the most common site for anterior urethral diverticula [2]. They may pass fascial planes and present as primary intrascrotal lesions [3 ,4]. They may result from injury or infection, and long-term indwelling catheters were also accused as a causative factor [4, 5].

CASE REPORT

A 73-year-old man presented with a 4-cm scrotal mass in the peno-scrotal junction. He became a paraplegic following a traffic accident 40-years earlier. During this period, the patient has suffered total urinary incontinence and this complaint was treated with external condom catheter applications. He mentioned that he had undergone multiple prolonged urethral catheterizations during this 40-year-period and noticed a scrotal enlargement that continued for the last 4-weeks. On admission, a palpable mass was noticed in the right hemiscrotum extending to the peno-scrotal junction. A urine culture showed no bacterial or other growth. Retrograde urethrography (RUG) revealed an anterior diverticulum (Fig. 1). The patient underwent open diverticulectomy (Figs. 2 and 3). The affected segment of bulbous urethra was also excised and a primary urethroplasty was performed over a transurethral catheter (Fig. 4). The pathologic examination revealed the diverticulum wall lined by granulation tissue. A chronic inflammatory process was also defined.

DISCUSSION

On histopathological evaluation, acquired diverticula are generally lined by granulation tissue, whereas congenital diverticula are lined by epithelium [6]. In both type of diverticula, patients may be asymptomatic or present with lower urinary tract symptoms (LUTS) [7]. Rarely, as in our case, the diverticulum may initially present as a scrotal mass. Paralyzed male patients are sometimes treated with long-term or clean intermittent catheterization (CIC) in order to eliminate urinary incontinence and urinary stasis. However, in the long-term period, trauma or infection induced by those catheters may irreversibly injure the urethral wall and cause stricture, fistula, and, to a lesser extent, diverticulum. Although there was no history of long-term catheterization or CIC in our case, diverticulum was diagnosed in the absence of a urinary tract infection. Our hypothesis for our patient was that, multiple catheterization procedures during the course of the primary disease (neurogenic bladder) might lead to micro trauma in the urethral wall and finally result in the formation of a clinically apparent urethral diverticulum. In differential diagnosis of a scrotal mass in a paralyzed male, especially when a urinary tract infection was observed, epididymo-orchitis and urethro-scrotal abscess should also be suspected.

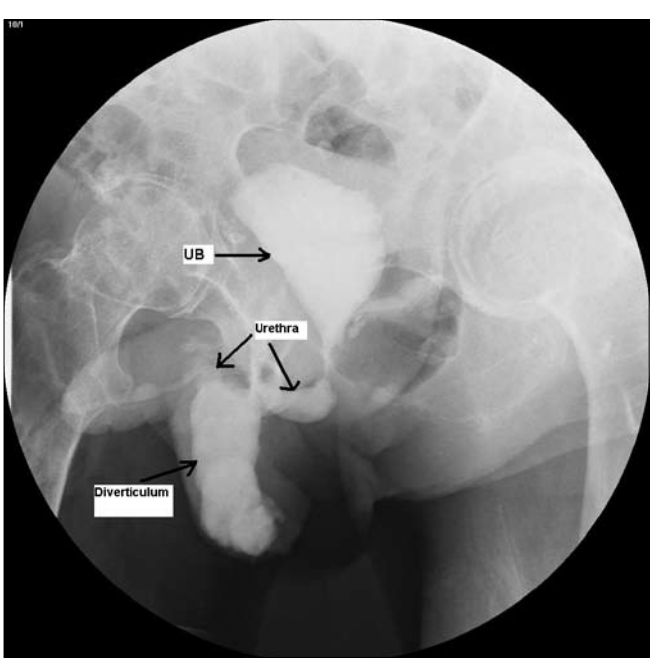

Fig. 1. Retrograde urethrogram showing the urethral diverticulum. Extension of contrast medium into a spherical diverticulum arising from the bulbous urethra was noticed (UB: Urinary bladder).

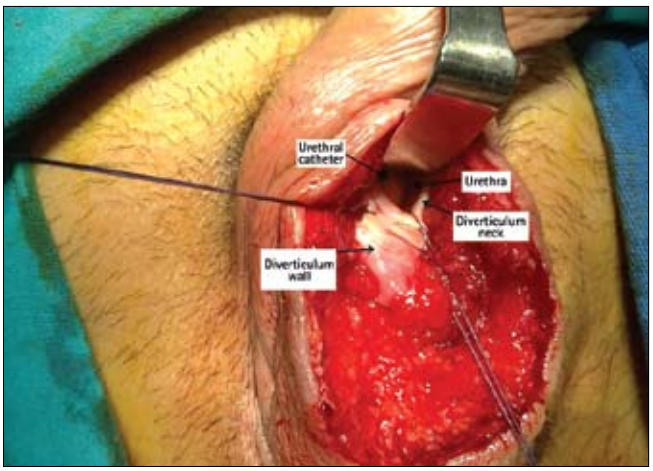

Fig. 2. Diverticulum located in bulbous urethra.

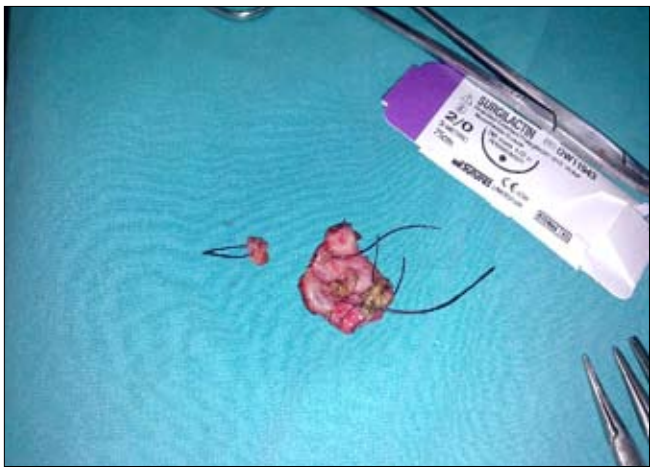

Fig. 2. Diverticulectomy specimen.

In 1996, Garris et al. reported a case with large urethral diverticulum that presented as a scrotal tracer collection on renal scintigraphic evaluation [4]. Consequently, Parvey et al. reported a debilitated male case that had a urethral diverticulum [8]. Afterwards, De Filippo et al. presented a 53-year-old male with a giant acquired urethral diverticulum [9]. This scrotal mass had been excised with a perineal incision. Recently, Ho et al. reported a 71-year-old man presented with a huge scrotal mass. A 6-cm acquired diverticulum with stone formation was seen and operated successfully [7].

CONCLUSION

Especially anterior urethral diverticula originating from bulbous urethra may clinically simulate primary intrascrotal mass lesions. The accurate diagnosis requires a careful imaging study. In clinical suspicion, RUG should be kept in mind as a gold standard method in the diagnosis of a urethral diverticulum. When diagnosed, open diverticulectomy including urethroplasty might successfully be performed as in our case.

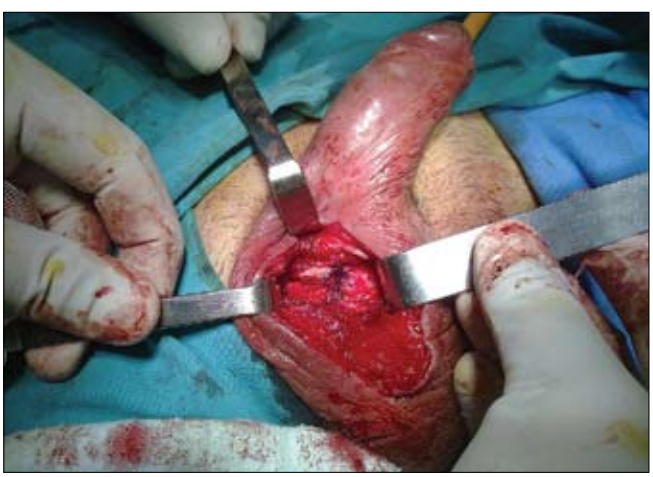

Fig. 2. Urethroplasty was performed following diverticulectomy.

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