

## Anterior urethral diverticulum with multiple stones presenting as scrotal mass

Skrotal kitle şeklinde görülen ve çoklu taş içeren ön üretral divertikül

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### Abstract

Urethral diverticula with stone formation is extremely rare among men. We report a case of 34-year-old man with a large urethral diverticulum with multiple stones presenting as a scrotal mass. The diagnosis was confirmed with ultrasonography and radiography. The patient underwent open surgical repair under local anesthesia, and the diverticulum was excised without any complication.

**Key words:** Diverticulum; postmicturition dribble; scrotal mass; stone; urethra.

### Özet

Erkeklerde taş oluşumunun eşlik ettiği üretral divertikül son derece ender olarak görülür. Skrotal kitle olarak ortaya çıkan, çoklu taş içeren büyük üretral divertikülü olan 34 yaşındaki erkek hastayı sunuyoruz. Hastanın tanısı ultrasonografi ve radiografi ile doğrulandı. Hastaya lokal anestezi altında açık cerrahi onarım uygulandı ve divertikül komplikasyon olmaksızın çıkarıldı.

**Anahtar sözcükler:** Divertikül; idrar sonrası damlama; skrotal kitle; taş; üretra.

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Urethral diverticulum is an uncommon clinical entity in men. However, only a few cases of a scrotal mass presentation have been reported in the English literature.<sup>[1-3]</sup> Moreover, urethral diverticula with stone formation is extremely rare among men.<sup>[4,5]</sup> We report a case of a large male urethral diverticulum with multiple stones presenting as a scrotal mass.

### Case report

A 34-year-old man applied to our outpatient clinic with complaints of post-micturition dribble for more than five years and a scrotal mass that had appeared about one year prior. Aside from treatment with alpha-blockers and antibiotics due to multiple episodes of chronic prostatitis, the patient's medical history was unremarkable. The patient did not report any previous urinary tract infection, obstruction, trauma, urethral catheterization, or stone. Urogenital examination demonstrated a 5x5-cm discrete right hemiscrotal mass with many stones (Fig. 1a). The testes were normal on palpation. Ultrasonography confirmed that the mass was emanating from the penoscrotal junction and extending into the scrotum, whereas radiography revealed the development of

multiple stones (Fig. 1b). Cystourethroscopy, which did not reveal any pathological signs, excluded urethral stricture, tumor, and stones.

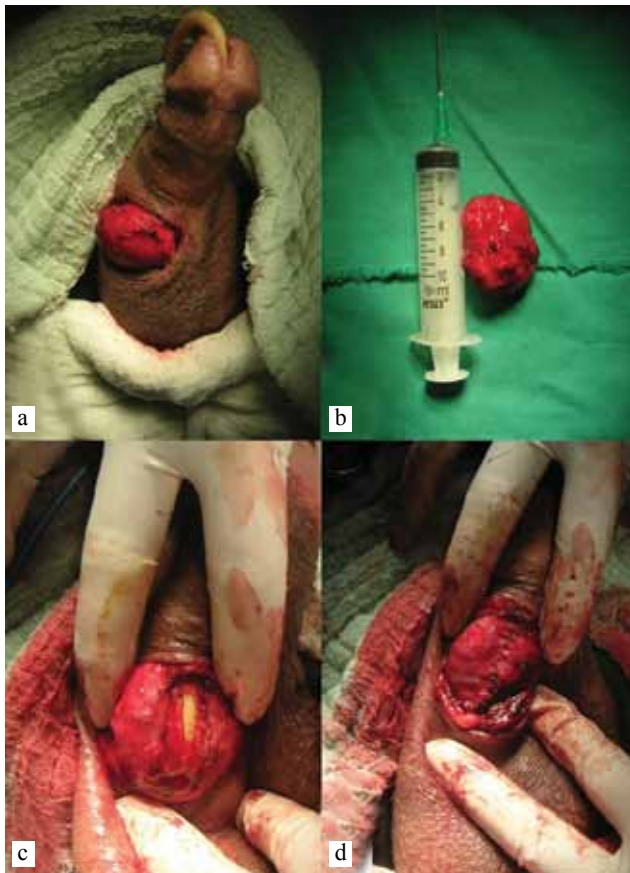
The patient underwent open surgical repair under local anesthesia, and the diverticulum was excised (Fig. 2a-c). The opening on the urethra was closed with 4/0 multifilament absorbable sutures over a 16-Fr transurethral catheter. Additional neighboring tissues were sutured, creating an additional layer to reinforce the repair and to prevent a fistula to the skin (Fig. 2d). There were numerous stones within the excised diverticulum (Fig. 3). The catheter was removed on the 14th postoperative day, and the patient was discharged without complication.

### Discussion

Although urethral diverticula are common in women, they are rare clinical entities among men.<sup>[6]</sup> Urethral infection, obstruction, and trauma can be etiologic factors in most cases, whereas they can develop without an evident instigating event in 50-90% of male patients.<sup>[7,8]</sup> Allen et al.<sup>[6]</sup> analyzed 21 male patients presenting to a single center with a symptomatic urethral diverticulum; palpable perineal swelling



**Figure 1** (a) Urethral diverticulum presenting as a palpable mass at the penoscrotal junction. (b) Radiography revealed that multiple stones had developed in the urethral diverticulum (arrow).



**Figure 2** (a-d) The steps of surgical removal of the diverticulum and repair of the opening under local anesthesia.

and post-micturition dribble were the presenting complaint in 12 (57.1%) and 9 (42.9%) patients, respectively. Although there are approximately 300 cases of urethral diverticula in men reported in the English literature, there are only a few cases that presented as a scrotal mass with stone formation.<sup>[4,5]</sup>

As the medical story of the patient presented here is confusing, we are not sure whether this diverticulum is congenital or acquired. The patient reported that his post-micturition dribble had existed for almost five years, whereas he noticed the perineal swelling a year ago. These data support that this diverticulum may have been acquired, although the patient did not report any previous urinary tract infection, obstruction, trauma, urethral catheterization, or stone disease. Moreover, no sign of urethral stricture, tumor or stone was detected with cystourethroscopy. The presenting age of the patient also suggests that this diverticulum may have been acquired; however, delay in presentation could be the result of difficulties with diagnosis, health-seeking behavior of our population, or characteristically long asymptomatic period of the disease until a complication is experienced. The mean age of presentation for the congenital diverticulum patients in the study by Allen et al.<sup>[6]</sup> was 25 years. The authors provided similar reasons for late presentation.

Urethrography or voiding cystourethrography can be performed before performing any kind of treatment; however, these relatively invasive imaging techniques would not have significantly changed our treatment approach and therefore were not applied.

Although endoscopic unroofing has been described in the literature, such a treatment option would not be suitable for this case because the opening of the diverticulum could not be detected during the cystourethroscopic examination.<sup>[6]</sup> Moreover, the size of the diverticulum was too big for spontaneous resolution. The removal of the multiple stones contained in the diverticulum was another drawback of endoscopic treatment. The diverticulum of the patient was completely excised, and the urethral opening was repaired and reinforced with additional tissue. Jang et al.<sup>[1]</sup> reported the case of 23-year-old man with a large urethral diverticulum. The authors performed diverticulectomy and ventral onlay urethroplasty using buccal mucosa. They also suggested that narrowing of the urethral lumen after primary closure of the urethral opening can result in several complications, such as fistula formation or diverticulum recurrence, whereas substitution urethroplasty with buccal mucosa can prevent such complications.<sup>[1]</sup> As in our case, urethral substitution was not necessary because the opening of the urethra created by excision of the diverticulum was not large.



**Figure 3** Stone formation within the excised diverticulum.

Male urethral diverticulum with stone formation is an exceedingly rare clinical entity; however, physicians must consider it in differential diagnosis in young patients with obstructive lower urinary tract symptoms and scrotal swelling. Although endoscopic treatment and urethral reconstruction with buccal mucosa graft have been described, open surgical removal of the diverticulum and primary closure can be the preferred approaches to treatment in patients with larger diverticula or diverticula with stone formation.

### Conflict of interest

No conflict of interest was declared by the authors.

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