Female urethral diverticulum associated with a large urinary calculus

Divertículo de uretra feminina associado a um grande cálculo urinário

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ABSTRACT

The diverticula of female urethra are very uncommon, but more frequently found between the third and fifth decade of life. Diverticula area mostly relate to repeated urinary infections of the periurethral glands or urethra's trauma. The diverticula may cause infection, calculus formation and rarely endometriosis or cancer. A case of a 65-year old Caucasian female with vaginal mass over six months is herein reported. There was no urinary loss, urethral secretion or urinary symptoms. A cystourethrography showed diverticula with calculus inside. The patient was submitted to surgery and dismissed from the hospital on the first postoperative day. The pathologic examination revealed no malignancy. In six months of follow-up, the patient was continent with no complaints.

Keywords: Diverticulum; Urethral diseases; Lithiasis; Urinary bladder calculi; Urologic diseases; Case reports

INTRODUCTION

Female urethral diverticulum are uncommon, but occur more frequently between the third and fifth decades of life, although there are reports of congenital diverticulum in newborns and young women⁷. It is more prevalent in the black population and the overall prevalence based on autopsy ranges from 0.6 to 4.7%⁸. Most urethral diverticulum are associated with recurrent periurethral gland infections or periurethral trauma by labor, surgery, or intermittent use of catheters⁹.

Diverticula may be the site of infections, calculus formation and, more rarely, of endometriosis or neoplasm. The association between diverticulum and calculus ranges from 1.5 to 10%⁹.

The classic triad of urethral diverticulum – dysuria, dyspareunia and postvoid dribbling – is not very common. Symptoms such as periurethral mass, pain or urethral discharge may be suggestive of the presence of a urethral diverticulum, but most patients only present bladder storage or emptying symptoms, or repeated urinary infections, thus making diagnosis difficult. Some patients are asymptomatic, especially if the diverticulum is small (2 a 16 mm)¹⁰,¹¹.

Clinical and surgical details about the approach of a large urethral diverticulum with a calculus inside are presented.

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CASE REPORT
Case of a 65-year-old Caucasian patient complaining of a nodule on the vaginal wall noticed six months ago. She denied urinary incontinence, urethral discharge and bladder storage or emptying symptoms. The patient presented a history of three pregnancies (two vaginal deliveries and one miscarriage) and underwent total hysterectomy 35 years ago.

Upon gynecologic examination, topic urethral meatus and bulging of the anterior vaginal wall with a cystic consistence, measuring approximately 8 cm (diameter), and containing mobile stony material roughly measuring 2.5 cm (diameter). Associated vaginal prolapse, urine loss or urethral discharge was not observed. The voiding urethrocystography confirmed the diagnosis of urethral diverticulum associated with calculus (Figures 1 and 2).

After discussing with the patient, surgical management was chosen and urethrocystoscopy was performed at the beginning of the procedure. Urethral diverticular ostium was evidenced close to the bladder neck. An inverted U-shaped incision was performed on the anterior vaginal wall, followed by dissection of the diverticular wall fascia, resection of the diverticulum, and the specimen was sent to pathology (Figure 3).

The urethra was sutured with Monocryl 5.0 in separate stitches, after placing a 16-French indwelling catheter. Pubocervical fascia and pubococcygeal muscles were sutured before closing the vaginal wall. No anti-incontinence mechanism was used. The patient was discharged on the first preoperative day and was asymptomatic.

The indwelling catheter was removed after 14 days. Pathology examination showed no malignancy. At the sixth month of follow-up, she has no urinary or vaginal complaints and is continent.

DISCUSSION
This patient presented anterior vaginal wall bulging leading to presumptive diagnosis of urethral diverticulum, which was confirmed by voiding urethrocystography. Suspicion of urethral diverticulum is not always evident, but it should be remembered in incontinent women presenting repeated urinary infections or bladder storage or emptying symptoms. Gomez Gallo reported a similar case of a 50-year-old patient complaining of dyspareunia and increased abdominal wall volume. Upon gynecologic examination, a mass of approximately three centimeters was observed closely to the urethra. Excretion urography showed a 3-cm calculus(5).

Figure 1. Plain radiography of the pelvis showing radiopaque image at the pubis measuring 22 x 23 mm

Figure 2. Voiding urethrocystography clearly shows a diverticular formation in middle urethra

Figure 3. View of surgery field after dissecting and opening the diverticular wall, showing the urinary calculus
The literature shows that it is difficult to demonstrate the presence of female urethral diverticulum through complementary examinations. The diverticulum ostium is not visualized in urethrocystoscopy in several cases due to associated inflammation. Some series reported sensitivity of urethrocystoscopy of approximately 15% as compared to 45 to 65% of voiding urethrocystography. Sensitivity significantly increases when using a double-balloon catheter inflated at the bladder neck and urethral meatus\(^6\). Magnetic resonance imaging has high sensitivity and is used in cases in which other diagnostic methods do not confirm the presumptive diagnosis\(^1\).

The transvaginal approach by an inverted U-shape incision is the most appropriate technique to excise female urethral diverticulum, except in distally located diverticula, when marsupialization is an excellent alternative.

Suturing in several layers using pubocervical fascia and pubococcygeal muscles, with well irrigated and not tense tissues, is essential for a successful urethral repair, thus avoiding urinary fistulas, which generally represent challenging complications regarding therapy. In more complex cases, it is possible to interpose some tissues, such as labial fat or the bulbospongious muscle.

Anti-incontinence surgery concurrent to the treatment of diverticulum should only be performed in women with previous incontinence and in cases of large reconstructions of the urethra or bladder neck, in whom there is a risk of sphincter lesion\(^7\).

Although rare, one should remember that urethral diverticulum may be the site of neoplasms. Therefore, anatomopathological examination of the excised material is obligatory.

REFERENCES