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## CASE REPORT

# A LATE COMPLICATION OF CYSTOCELE OPERATION: URETHRAL DIVERTICULUM CAUSING CHRONIC PELVIC PAIN

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**ABSTRACT**

Urethral diverticulum is a condition that must be kept in mind in differential diagnosis of chronic pelvic pain. It is among the late complications developing after particularly vaginal and urologic operations. A detailed anamnesis and a careful vaginal examination are essential. Diagnosis can be made with transvaginal ultrasonography (TV-USG) and magnetic resonance imaging (MRI) in presence of a vaginal mass. The patient who was admitted with chronic pelvic pain and dysparunia was diagnosed as urethral diverticulum after examinations and imaging techniques. No postoperative complications was developed in the patient who underwent a successful complete urehral resection via vaginal route and the patient recovered.



## INTRODUCTION

Chronic pelvic pain (CPP) is a common complaint of women presenting for gynecologic clinics. CPP is a complex condition that requires evaluation of the reproductive, gastrointestinal, urologic, musculoskeletal, psychological, and neurological systems. CPP arise from urologic reasons in the ratio of 5-10%. Female urethral diverticulum is often overlooked and frequently misdiagnosed because of unawareness of the condition. Urethral diverticula are estimated to occur in 1–6% of women. Although usually diagnosed between the third and fifth decade of life, it can affect all age groups (1). Diverticula of the female urethra are rare lesions occurring predominantly in the distal two thirds of the urethra. The condition frequently presents with nonspecific and nonclassical symptoms and this leads to incorrect and delayed diagnosis. Most urethral diverticula are related to recurrent infections of the periurethral glands or urethral trauma. Our patient had been suffering from chronic pelvic pain and dyspareunia for 4-5 years and the patient received medical therapy for a long time. A palpable mass was detected on vaginal examination of the patient who was learned to experience a complicated vaginal surgery. Diagnosis of an urethral diverticulum was made after radiologic imaging techniques. The case was discussed accompanied with the current literature.

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### Case Report

A 61-year-old female patient was admitted to Gynecology and Obstetrics Clinic of Universal Malatya Hospital with complaint of dyspareunia and chronic pelvic pain on 16.08.2012. She did not have any urinary complaints. The patient who had used medications because of chronic pelvic pain for a long time complained that the pain increased recently. On vaginal examination, 3. degree rectocele and 2. degree cystocele were observed. A vaginal mass measuring 3x3 cm was palpated on the anterior wall of vagina. TV USG revealed an anechoic, cystic mass measuring 35x36 mm, which had regular contour and multipl septas with a thin wall (Image 1, 2). Urine was seen to come from urethra when the mass was manually palpated. The patient was learned to undergo incontinence surgery (cystocele + vaginal sling) 9 years ago and urinary catheter had stayed for a long time due to complications. Routine biochemistry, blood tests and urinary analysis were within normal ranges.


**Image 1: TV-USG revealed an anechoic, cystic mass measuring 35x36 mm, which had regular contour and multipl septas with a thin wall**


**Image 2. TV-USG revealed an anechoic, cystic mass around the urethra (arrow) measuring 35x36 mm, which had regular contour and multipl septas with a thin wall**

According to the results of anamnesis, vaginal examination and TV USG, lesions that may be related with urethra were considered in differential diagnosis. On pelvic MRI, a cystic lesion was observed surrounding the urethra in the posterior of bladder floor, measuring 30x 24 mm, hypointense on T1A sequences, hyperintense on T2 sequences, including multiple septas, not showing contrast enhancement (Image 3,4).

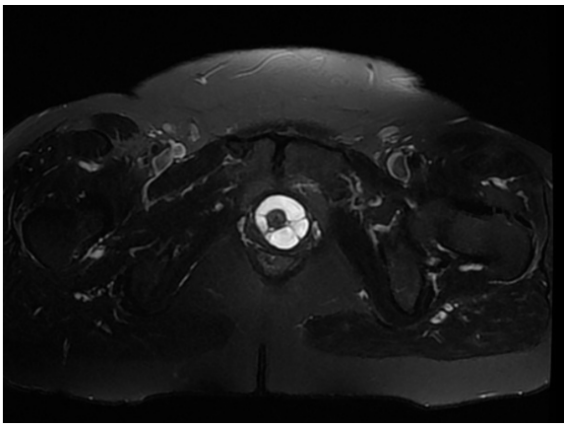

**Image 3. Axial T2- weighted fat supressed image shows periurethral hyperintense cystic lesion that contains multipl septation the level of the pubic sym phisis**

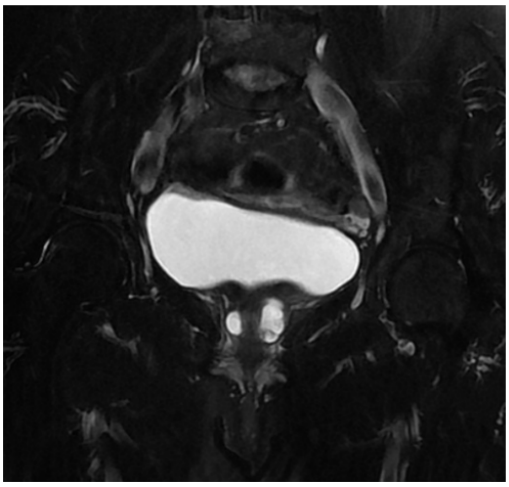

**Image 4. Coronal T2- weighted fat supressed image shows periurethral hyperintense cystic lesion that contains multipl septation at the level of the pubic symphisis**

Although relation of the lesion with urethra could not be evaluated clearly, a complicated urethral diverticulum was considered in differential diagnosis (Image 5). The patient was operated. Junction point of the urethra and the diverticulum was tried to be seen by cystoscopy but it could not be achieved. After that periurethral resection was done. Vagina and periurethral region was closed using 3-0 vicryl. Flap was not used. Relapse cystocele, rectocele and colporraphy anterior+ colporraphy posterior and perineoplasty for perineal laceration were performed. The patient was discharged two days later. And reevaluated at the end of 7. and 30. days. No postoperative complications were observed. Complaints of pelvic pain and dyspareunia completely regressed and incontinence did not develop.

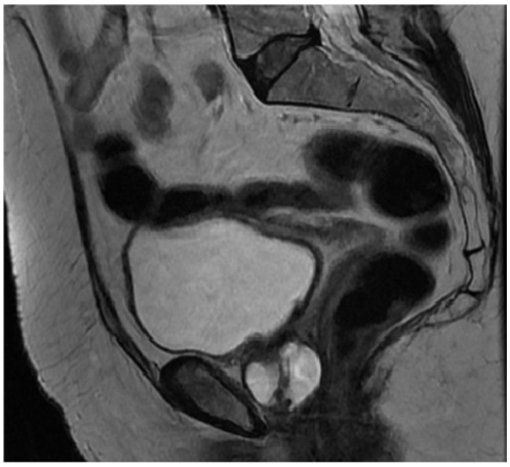

**Image 5. Sagittal T2- weighted turbo spin- echo image shows periurethral hyperintense cystic lesion that contains multipl septation at the level of the pubic symphisis**

## DISCUSSION

Urethral diverticula are nosologic entities of difficult diagnosis, due to their low prevalence and their unspecific clinic, therefore diagnosis is sometimes incidental. They are thought to be derived from the periurethral glands as a result of recurrent infections. Urethral diverticula (UD) have historically been described with the classic triad of three D's e.g. Dysuria, Dysparunia, and Dribbling, which are present only in about one third of cases. They can be asymptomatic and incidentally detected or may present with symptoms like painful vaginal mass, chronic pelvic pain, refractory lower urinary tract symptoms, and recurrent urinary tract infections (2). Interestingly, our patient had no urologic complaints. She had complaints of pelvic pain and dyspareunia. The mass on anterior wall of the vagina had been overlooked in the previous examination. Probably the previous vaginal examinations had been made using only speculum but manual vaginal examination had not been done or the mass was not big enough to palpate. Detection of a mass on anterior vaginal wall on manual vaginal examination and urine coming from urethra were quite important for differential diagnosis. Lesions that could be related with urethra were considered in differential diagnosis. The patient was diagnosed with periurethral diverticulum on MRI done afterwards. Periurethral diverticula and congenital diverticula may develop from embryonic remnants. The etiopathogenity is acquired in most cases and its surgical treatment is more challenging in males than in females probably linked to the fact that diverticula appear in urethras with previous surgery, endourologic manipulation or associated injuries. Urethral diverticulum which developed in our case was considered to be secondary to urethral injury that could occur due to previous incontinence surgery. Medical records and anamnesis

verified this condition. In literature, similarly to our case, one case which developed after a traumatic cystocele operation, who was admitted with complaint of vaginal hemorrhage and a vaginal mass was palpated on vaginal examination and who was diagnosed with urethral diverticulum with tests done thereafter was published (3). Newer imaging modalities such as magnetic resonance imaging and perineal ultrasound are now widely available and urethral diverticula, that were previously unrecognized, can now be more easily detected. With increased clinical awareness and advanced imaging techniques, the diagnosis of uretral diverticula is more frequent. MRI provides the most comprehensive evaluation before and after surgery. Although there remains a lack of standardized practice, MRI is the preferred technique or can be pursued as a secondary investigation if other techniques fail to detect a diverticulum and clinical suspicion remains high. However, despite the availability of effective diagnostic techniques, diagnosis is often delayed. This is due to a lack of awareness among clinicians. These patients are often inappropriately treated for other conditions, significantly delaying the proper management of their condition (4).

The mass lesion on anterior vaginal wall was overlooked in the case who had been done gynecologic examination for many times because of pelvic pain complaint. On our examination, after a mass had been palpated on anterior wall of the vagina, TV USG revealed a smooth, thin anechoic cystic mass lesion which included multiple septations (Image 1, 2). Sonography is noninvasive, obviating catheterization, and can provide measurements of the size, number of loculations, and location with respect to the urethra. However, sonography is operator-dependent, and distinguishing the diverticulum from other cystic lesions and visualizing the neck can be challenging (5). On pelvic MRI, a cystic lesion surrounding urethra in posterior of bladder floor, measuring 30 x24 mm, hypointense on T1A sequences, hyperintense on T2 sequences, including multiple septas, not showing contrasting was observed. Although relation of the lesion with urethra could not be evaluated clearly, a complicated urethral diverticulum was considered in differential diagnosis (Image 3, 4, 5).

Transurethral fluid expression on palpation and recurrent urinary tract infection had high PPV. Sensitivity, specificity, PPV, and NPV, respectively, for cystourethroscopy were 33 %, 100 %, 100 %, and 42 %; for MRI, these were 100 %, 83 %, 92 %, and 100 %. These data reinforce the utility of transurethral fluid expression for preoperative evaluation of urethral diverticula. Additionally, MRI is an excellent adjunctive diagnostic tool and may assist in establishing the diagnosis when there is high clinical suspicion of a urethral diverticulum but nonconfirmatory findings on cystourethroscopy (6). Surgery is the treatment of choice for symptomatic urethral diverticula and includes complete or partial excision or marsupialization, depending mainly on the location of the diverticulum along the urethra. If the diverticulum opens into the middle or proximal third of the urethra, the treatment of choice is urethral diverticulectomy, which is usually performed transvaginally. For diverticula emptying into the distal third of the urethra, marsupialization into the vagina is an option. Although transurethral procedures have been proposed, they may be less effective in preventing recurrence of the diverticulum (5). In our case, the connection between the diverticulum and urethra could not be clearly shown. The diverticulum originating from proximal region was removed transvaginally and the tissue was closed 3 layers. Dyspareunia and pelvic pain disappeared in the patient who did not develop incontinence postoperatively. Martius flap technique has been reommended for the cases which coexist with SUI. For SUI, it is recommended to postpone a potential sling operation after primary excision (7). Total excision of the diverticulum, preservation of periurethral fascia, and watertight and tension-free closure with non-overlapping suture lines are vital for optimal surgical outcome (8). Primary resection was sufficient as our patient did not have the complaint of incontinence preoperatively. The patient who did not develop postoperative complications is being followed up in our clinic for relapse. A high index of suspicion, a careful examination and referral for appropriate investigation will improve the number correctly diagnosed and lead to considerable benefit since most symptomatic cases can be cured by appropriate surgery. Periurethral diverticulum must be kept in mind in differential diagnosis of chronic pelvic pain. Further tests and the treatments must certainly be performed for this diagnosis in cases who have the history of previous vaginal surgery.

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