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Primary vaginal stone associated with vesicovaginal fistula: A case report

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ABSTRACT

Vesicovaginal fistula with stone is an infrequent condition; therefore, it can be often misdiagnosed. The formation of vaginal stones is mainly due to urinary stasis and infection. We describe the case of a 69-year-old patient who was diagnosed with a vesicovaginal fistula in 2012. The etiology of the disease was related to supravesical amputation of the uterus and radiation therapy. 9 years later a medium-sized stone was found in the fistula. This type of case is rare in practice. The final diagnosis can be made together with gynecologists based on the results of pelvic computed tomography.

1. Introduction

Urogenital fistulas are one of the most pressing and socially significant problems of modern medicine, which is explained by a sharp decrease in the quality of life and social disadaptation of patients. In 97% of cases, vaginal fistulas are caused by trauma during childbirth, obstetric and gynecological operations.[1] In 85% of patients, vesicovaginal fistulas (VVF) occur after gynecological surgery, in 11% after childbirth, and in 4% after radiation exposure.[1]

A vesicovaginal fistula stone is a rare condition. Primary vaginal stones form due to deposits of inorganic salts, due to urine stagnation in the vagina, and are mainly caused by congenital dysplasia of the urogenital system or trauma.[2] Secondary ones form due to scars after gynecological surgery, which eventually lead to the formation of vaginal stones because of continuous deposition and infection of urine in the vagina.[3] Secondary vaginal stones are often associated with erosion of surgical mesh or other foreign tissue left in the vagina and with inorganic salts in the urine that gradually settle around the foreign tissue over time.[2,3]

This article presents a case of a primary stone in a vesicovaginal fistula. The patient, who had a history of supravaginal uterine amputation, came with complaints of urine leakage from the vagina and underwent a series of examinations where VVF with a stone in the fistula was found.

2. Case presentation

Patient A., 69 years old, was admitted to the National Research Oncology Center (Kazakhstan) with complaints of vaginal urine discharge and itching that had been bothering her for 9 years. She had first manifestations in 2012 when she began to notice vaginal discharge of urine and frequent change of gynecological pads 3–4 times a day. As an outpatient, she underwent computed tomography (CT) of the pelvic organs, where she was found to have a vesicovaginal fistula. She underwent conservative therapy and urethral catheter placement, but the effect was insignificant. It is known from her medical history that in 2000 she underwent supravaginal uterine amputation, after which she underwent radiation therapy. Since 2021 she has noted a decrease in vaginal urine discharge. At the same time, a CT scan of the pelvic organs was recommended (Fig. 1). The instrumental examination showed signs characteristic of a nodule in the lumen of the posterior bladder wall defect.

The diagnosis of a vesicovaginal fistula was confirmed after a gynecological examination. Based on the above factors, according to the diagnostic and treatment protocol, a decision was made to repair the bladder-vaginal fistula with lithotomy through transvaginal access.

Abbreviations: VVF, vesicovaginal fistula; CT, computed tomography.

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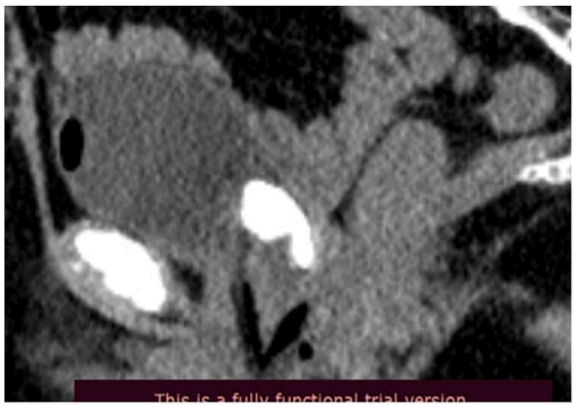

Fig. 1. CT scan of the pelvic organs visualizing a stone in a fistula (2 × 1.5 × 0.5 cm): sagittal plane.

Intraoperative monitoring showed the following dynamics: urinary mucosa was pale pink, ureteral orifices were typically placed, at 5 and 7 o'clock, urine was excreted with renal rhythm. The stone and fistulous passage were located on the posterior wall of the bladder, between the ureteral orifices. To perform the intervention, the ureteric orifices were catheterized with ureteric catheters N⁰6 by Fr, and a urethral Foley catheter N⁰18 was inserted. A fistulous opening up to 15 mm in diameter was visualized in the area of the vaginal stump. To improve visualization and manipulation conditions, an incision of the vaginal mucosa and a single fringing incision around the fistula was made. Acute dissection of the bladder and vaginal wall was performed. Intraoperatively, ligatures with stone formation were found and removed from the fistulous passage (Fig. 2). After excision of the fistulous cuff, the bladder defect was sutured with 2 rows of nodal sutures, and the integrity of the vaginal wall was restored with continuous sutures (Vicryl 3.0).

There were no postoperative complications, retrograde cystography was performed on the 10th postoperative day (Fig. 3), and the patient was discharged on the 14th day after surgery. Follow-up was performed 1 month after surgery and then every 3 months. Follow-up examinations revealed no recurrence of the disease.

Fig. 2. The stone (2x1,5x0,5 cm).

Fig. 3. Retrograde cystography: lateral view. No leakage.

3. Discussion

Vaginal stones are a very rare pathology that is usually described only in case reports. It was first described by Navani and Tessier in 1900.[4] Primary vaginal stones are characterized by abnormalities of the urogenital tract, such as vaginal fistulas and vaginal obstruction. In this case, the primary vaginal stone was accompanied by a vesicovaginal fistula.

The VVF can be acquired or congenital. The main causes are radiotherapy, pelvic malignancies, and surgery. In 9% of cases VVF is caused by surgery, and in 1.4–5.2% by radiation.[5] Urinary dysfunction can also be associated with foreign bodies: this condition occurs in 10% of women with vesicovaginal fistula.[3] Moreover, VVF can be caused by pressure necrosis of the bladder wall. In this case, the main cause of this condition was a gynecological operation, namely supravaginal uterine amputation, which resulted in a vesicovaginal fistula with a stone.

This report presents a case of a long-term vesicovaginal fistula for 9 years. The process of stone formation can be prolonged, so the detection of a vaginal stone may not be available until several years after the first symptoms appear.

Surgical intervention for this disease can be of several types, such as transvesical excision or transvaginal access.[3] In this case, considering less traumatization, early recovery, and the best efficiency, we chose the transvaginal operative access. The operation was carried out in one stage: stone removal and fistula plasty. The operation was successful. There were no complications in the early postoperative period.

4. Conclusion

Although vaginal stones are rare, we have to pay attention to this disease, especially in patients after gynecologic surgery. Urinary tract obstruction combined with recurrent urinary tract infection is a major cause of vaginal stone formation. These patients require follow-up every 3 months, including physical examination, ultrasound of the urinary system, and cystoscopy if necessary, so that the disease can be avoided.

Authors' contributions

Kurmanov: Methodology, Investigation **Kulkayeva:** Project administration, Supervision **Shakirova:** Supervision, Methodology **Shalekenov:** Supervision, Writing – Review&Editing **Mugalbekov:** Methodology, Investigation **Mustafinov:** Investigation, Writing – Original Draft.

Ethical approval

Informed consent was taken from the patient. She gave her permission to write about her case without giving any personal information or data that can reveal her identity. The Ethical Committee of the National Research Oncology Center (permit number №13) approved the study.

Data availability statement

Data available on request from the authors.

Declarations of interest

None.

Declaration of competing interest

The authors declare that they have no conflict of interest.

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