Vesicouterine fistula, a rare cause of genitourinary fistula

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ABSTRACT

Uterovesical fistulas are rare genitourinary fistulas developing secondary to iatrogenic etiologies. In this article, we report a post-cesarean vesicouterine fistula with review of the literature.

Key words: Amenorrhea; cyclic haematuria; vesicouterine fistulas; Youssef's syndrome.

Introduction

Uterovesical fistulas which are classified among genitourinary fistulas are not encountered very frequently. They occur mostly due to iatrogenic causes. Uterovesical fistulas developing after caesarean section not accompanied by urinary incontinence, but cause amenorrhea, and cyclic hematuria comprise Youssef's syndrome.^[1] In this article, a case with uterovesical fistula developed after the third cesarean section is presented in the light of literature information.

Case presentation

A 35-year-old female patient consulted to our clinic with complaints of cyclic hematuria, and amenorrhea. It was learnt that the patient had undergone her third cesarean section 10 months ago in another center, and she had retained her urethral catheter for 2 months postoperatively. As indicated in her reports she had intensive postoperative hematuria for one month which gradually alleviated with time. She had not any complaints suggesting urinary incontinence.

Abundant red blood cells were detected in his complete urinalysis. Cystoscopy performed revealed a fistulous opening with a diameter of nearly 1.5 cm localized just posterior to the trigone (Figure 1). On gynecological examination performed at the same time with cystoscopy, any fluid leakage from vagina was not observed. A 17 Fr cys-

toscope was inserted through fistula tract, and advanced up to the uterine horns. Sterile methylene blue dye was instilled into the patient's bladder, but intravaginal passage was not observed. Patient's informed consent was obtained in order to use information necessary for case presentation.

Surgical technique

Using transabdominal approach, fistula was repaired through infraumbilical incision. Then the bladder was deperitonealized. Afterwards, through transperitoneal route, fistula tract localized on the anterior aspect of the uterus, between corpus, and cervix was accessed (Figure 2). After incision of the bladder dome, bladder was opened, and incision was advanced posteriorly up to the fistulous tract. Fistulous tract was completely excised so as to encompass fistula openings on the bladder, and uterine walls (Figure 3). Bladder wall was closed in two layers, and filled with physiological saline to observe any evidence of leakage. Fistula opening on the uterine wall was closed with 0 polyglycolic acid sutures in two layers. Then omental tissue of adequate length was prepared, and the repaired region of the bladder was closed with this tissue graft. Upon request of the patient, both fallopian tubes were simultaneously ligated during the same session. Urethral catheter was left in situ for postoperative 10 days. At control visits performed postoperatively at the first week, and the third month, we learnt that her complaints of cyclic hematuria disappeared.

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Figure 1. Cystoscopic appearance of fistula orifice localized immediately behind the trigone

Figure 2. Uterovesical fistula tract

Discussion

Uterovesical fistulas are rarely seen fistulas which generally develop between uterus, and bladder following cesarean sections.^[2] Increasing rates of cesarean sections in recent years have also led to an increase in postoperative complications as genitourinary fistulas.^[3]

Clinical presentations of uterovesical fistulas demonstrate variations. The patients can apply with complaints as

Figure 3. Intravesical appearance of the fistula opening

urinary incontinence, amenorrhea, and cyclic hematuria. Besides they can cause secondary infertility, and miscarriages during the first trimester.^[4] These problems result in decline in the quality of life of the patients.^[1] In cases with cyclic hematuria, uterovesical fistulas together with endometriosis should be taken into consideration. In our case, cyclic hematuria, and amenorrhea were present without urinary incontinence which is the third component of the classical Youssef's triad.^[1]

Diagnosis of uterovesical fistula is made after exclusion of other frequently seen urogenital fistulas, and demonstration of fistulous tract between the bladder and the uterus.^[4] For diagnostic purposes, intravenous urography (IVU), hysterosalpingography, sonohysterography, cystography, methylene blue test, transvaginal ultrasound, pelvic MRI, and cystoscopy have been used.^[5-8] These diagnostic tests have advantages, and disadvantages. Cystography has a diagnostic value in vesicovaginal fistulas, however since in uterovesical fistulas, intra-uterine pressure is higher than intravesical pressure, it may not aid adequately in diagnosis.^[6] In the literature, diagnostic value of sonohysterography, and pelvic MR has been reported. In a study performed with 12 uterovesical fistula patients, 100% diagnostic accuracy of pelvic MRI was demonstrated.^[7] Cystoscopy can reveal the presence of fistula, however if the fistula tract can not be dilated then it can not determine the extend of the fistula tract. In our case, during cystoscopy, a large fistula opening was seen, Then cystoscope was advanced up to the uterine horns, and after visualization of the whole tract, diagnosis was made.

In the treatment of uterovesical fistulas, conservative or surgical techniques have been used.^[4,9] If uterovesical fistula was made immediately after the birth, dwelling of the catheter for 4-8 weeks can provide a chance for the spontaneous closure of the fistula tract.^[4] Our case remained catheterized for nearly two months after cesarean section without any symptomatic improvement. For surgical repair of uterovesical fistula, transperitoneal, transvesical, and transvaginal approaches have been described.^[4] Basic principles of these surgical techniques consist of excision of the fistula tract, and repair of excised portions of the bladder, and uterus. Then a patch of supportive tissue is interposed between bladder, and uterus. Omental tissue can be interposed between uterus, and bladder, while in the literature use of free adipose tissue grafts prepared from abdominal fat has been described.^[10,11] In recent years, minimally invasive methods have been reported for uterovesical fistula repair including laparoscopic, robot-assisted, and single-port laparoscopic surgeries.^[12,13]

As reported in the literature, if diagnosis of uterovesical fistula is made soon after the delivery, then conservative treatment method can be applied, and also early surgical intervention in selected cases has yielded successful outcomes.^[2] During the postoperative period for patients with intractable pains, and those with large fistulas, surgical treatment can be contemplated during the early postoperative period.^[2]

Following uterovesical fistula repair, patients can maintain their fertilities, and healthy pregnancies after surgical fistula repair have been reported in the literature.^[10] Although fistulas carry a potential risk of recurrence, for pregnant women who had undergone fistula repair, delivery by C-section has been recommended.^[4] Our patient did not want to become pregnant again, so in compliance with the request of the patient we performed bilateral fallopian tube ligation concurrently with fistula repair.

Uterovesical fistulas are usually localized on isthmus or cervix, and they are made of granulation tissue, chronic inflammatory cells, and fibrous tissue. In our case, fistula was localized on isthmus, and histopathological examination revealed the presence of congestion, and chronic inflammation.

Evacuation of the bladder before obstetric surgeries, meticulous attention to surgical principles, and careful dissection of the lower uterine segments minimize the risk of fistula formation.^[1,4]

Following pelvic surgeries, and especially after gynecological, and obstetrical operations genitourinary fistulas can develop. Recurrent gynecological operations, and cesarean sections

increase the risk of uterovesical fistula formation. Cyclic hematurias after C-sections should suggest uterovesical fistulas. Early surgical interventions after early diagnosis, and also surgeries applied in cases detected in the long-term have higher chances of success.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

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