

Laparoscopic management of vesicouterine fistula following vaginal delivery and caesarean section in the past medical history: a case report

Laparoskopowa operacja naprawcza przetoki pęcherzowo-macicznej u pacjentki po porodzie fizjologicznym i cięciu cesarskim w wywiadzie – opis przypadku

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Summary

Authors report a case of a vesicouterine fistula of a 38-year-old patient. The disease presented on the second day after physiological delivery in very early puerperium, the patient complains of urinary leakage from vagina. In the past medical history, the patient had a caesarean section 4 years ago.

Laparoscopy was performed to close the fistula three months after the delivery. The bladder wall was prepared and mobilized from the vesico-utero space. The fistula was closed by single stitches. We achieved complete closing of the vesicouterine fistula and fistula symptoms were gone. Delayed laparoscopy was the proper operation to repair the vesicouterine fistula.

Use of laparoscopy techniques in operating genitourinary fistulas gives very satisfactory results. In the literature, laparoscopy vesicouterine fistula closure is presented as a safe intraperitoneal surgery that is less invasive than traditional.

In the authors' view, laparoscopy is a successful and very safe method of closure of vesicouterine fistulas.

Key words: vesicouterine fistula, laparoscopic surgery

Streszczenie

W pracy opisano przypadek przetoki pęcherzowo-macicznej u 38-letniej pacjentki. Obecność przetoki pęcherzowo-macicznej rozpoznano w drugiej dobie po porodzie fizjologicznym. Poprzednia ciąża pacjentki zakończyła się drogą cięcia cesarskiego.

Zabieg zamknięcia przetoki został przeprowadzony laparoskopowo, po 3 miesiącach od daty porodu. W trakcie zabiegu częściowo odpreparowano pęcherz moczowy od macicy i zeszyto przetokę, uzyskując jej zamknięcie. Zabieg chirurgiczny, jak również okres pooperacyjny przebiegały bez powikłań. Pacjentka opuściła szpital w czwartej dobie po operacji. W kolejnych badaniach kontrolnych stwierdzono całkowite zamknięcie przetoki i zupełne ustąpienie dotychczasowych dolegliwości.

Wykorzystanie technik laparoskopowych w leczeniu przetok narządu rodnego daje bardzo dobre rezultaty i jest opisywane jako bezpieczna i małoinwazyjna metoda postępowania. Według autorów laparoskopia jest skuteczną i bezpieczną metodą operacyjną w leczeniu przetok narządu moczowo-płciowego.

Słowa kluczowe: przetoka pęcherzowo-maciczna, operacja laparoskopowa

Introduction

A vesicouterine fistula is an abnormal communication between the lumen of uterus or cervix and urinary bladder [1, 2]. This malformation consists of simultaneous damage

of the anterior wall of uterus or cervix and the posterior wall of the urinary bladder. In the literature, the vesicouterine fistula was first time reported at the beginning of the twentieth century [3]. The prevalence of this complication is rare. Vesicouterine fistulas present only

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1-16% of all genitourinary fistulas [1, 2, 4]. The most common reason for the presence of the vesicouterine fistula is the caesarean section, especially a lower segment type (80%-87.5% of cases) [1, 2, 5]. Other reasons include long labour, forceps delivery, vaginal delivery after caesarean section, genital tuberculosis, intrauterine contraceptive devices, gynaecological injuries. Even is a case of fistula after cervical cerclage [6].

Usually vesicouterine fistula is present with urinary leakages, cyclic hematuria, amenorrhea, infertility and first trimester abortions. In the literature some symptoms of vesicouterine fistula were called Youssef syndrome [7] after the first author who described the clinical syndromes. Youssef syndrome concerns patients after caesarean sections, who complained of cyclic hematuria, amenorrhea and urinary continence.

Operative treatment of vesicouterine fistulas can be performed with conservative or operative management. Spontaneous closure of this kind of fistulas is very rare (less than 5% cases) [1, 4, 8].

Aim of the study

In this work we present a case of a 38-year-old woman with vesicouterine fistula after vaginal delivery and caesarean section in the past history. Laparoscopy closure of the fistula was successful.

Materials and methods

A 38-year-old patient was admitted to the Research Department of Surgical and Endoscopic Gynaecology, Polish Mother's Memorial Hospital Institute, Lodz, Poland in April 2008, three months after primary diagnosis.

Medical history: the patient complained of urinary retention, no bowel tension and vaginal leakage of urine on the second day after vaginal delivery (on 8 January 2008). Previous delivery was a caesarean section (2004). After symptoms were revealed, the patient was catheterized using Foley catheter which gains sanguinary urine. The patient was consulted by an urologist who administered antibiotic therapy (Augmentin), ultrasound examination of kidneys, urinary bladder and genital organs, urography and hold Foley at the urinary bladder for 30 days. Performed ultrasound scans do not show any symptoms of urinary dilatation at kidneys, bladder was contracted. Gynaecologic ultrasound scan was correct. Urography detected, after bladder contrast filling, the presence of contrast in the uterus cavity, which confirmed the primary diagnosis.

The patient during the entire Obstetrics Department hospitalization was in good condition. Touch examination showed no peritoneal manifestation, Goldflamm sign was negative on both sides, no raised temperature, Foley still present bloody urine. On the day of discharge, blood morphologic and inflammatory parameters were correct.

The patient left the Obstetrics Department on the 7th day after vaginal delivery with a prescription to hold Foley in urinary bladder for next 4 weeks, and visit the urology department on a regular basis. At this time the patient had a cystoscopy performed, which showed a 2 cm diameter hole in the posterior wall of the bladder (Fig. 1, 2).

Conservative treatment gives no betterment. The patient was hospitalized at the Department of Surgical and Endoscopic Gynaecology, Polish Mother's Memorial Hospital Research Institute. Pre-operative blood examinations were correct. Urinary examination: numerous red blood

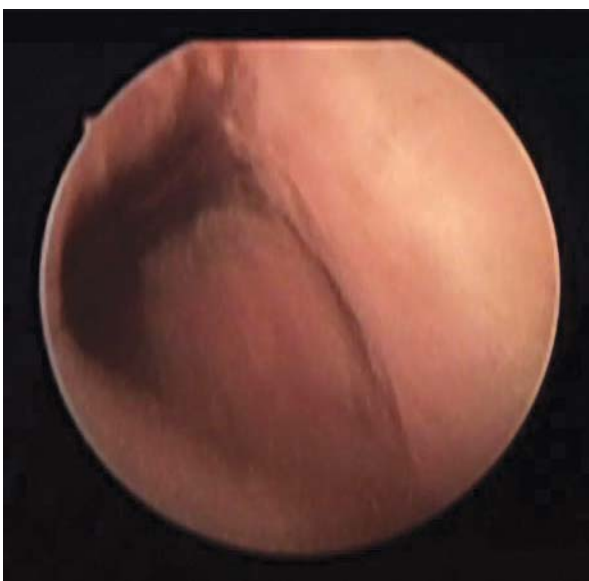


Fig. 1, Fig. 2. Cystoscopy shows vesicouterine fistula into the wall of urinary bladder

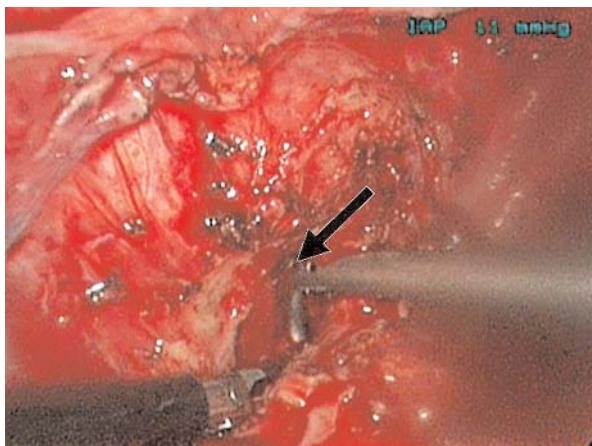


Fig. 3. Uterus anterior wall preparation, the arrow shows fistula and intrauterine manipulator



Fig. 4. Ultrasound gynaecologic exam one day before operation, the arrow shows fistula localization

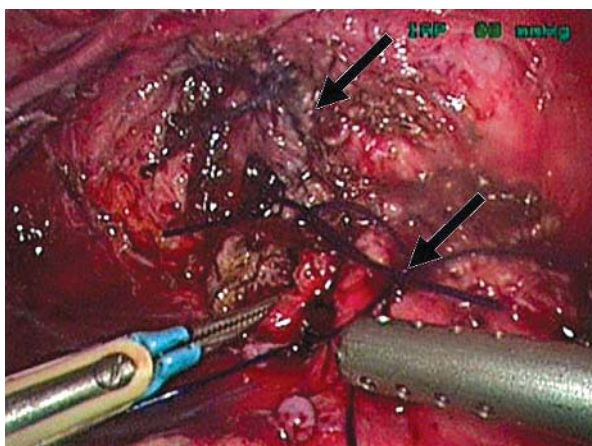


Fig. 5. Sutured fistula, arrows show wall of bladder and uterus

cells at the view area. Ultrasound scan of the genitourinary tract showed the presence of a fistula in the bladder wall (Fig. 4). At gynaecological examination in speculum there were no signs of vaginal fistula. After gynaecological examination and based on results of other examinations it was decided to perform a laparoscopic fistula repair (operator: **Malinowski A.**).

Before the start of the operation, the patient was Foley catheterized (Fig. 3, 9) and the operator put the “hegar” dilator into uterus for easier uterus manipulation during operation. Laparoscopic preparation of the bladder from the uterus was done (Fig. 5-7). The diameter of the bladder fistula was 2.5 cm. After complete fistula preparation, it was sutured by interrupted Vicryl 2-0 stitches (Fig. 8). The diameter of the uterus fistula was approximately 3-4 cm with extremely deformed edges of the wound. The fistula was placed at the anterior wall of uterus and partially at uterus isthmus. For proper preparation of uterus fistula the operator has prepared cervix and uterus isthmus. Similarly, the uterus fistula was sutured with interrupted PDS-0 stitches. After suturing

bladder leakproof was tested – no contrast leakage. At Douglas cavity redon catheter was left.

Results

Due to laparoscopy, complete fistula closure was achieved. There was no intra- and post-operative complications, time of laparoscopy was 180 min. After the operation, Foley gives clear urine. The patient was discharged from the Department on the 4th day after operation with a prescription of hold Foley for three weeks. Continuous oral contraceptives were also prescribed for 3 months. After 3 weeks and removal of the Foley catheter, the patient started to urinate herself by urinary ways with clean urine.

Discussion

Vesicouterine fistula is a typical iatrogenic complication which usually develops after caesarean section delivery or forceps delivery [1, 2, 5]. According to accessible literature, that complication most often occurs after another caesarean section [2] or during operative delivery preceded by a caesarean section. Last years we observed an increasing prevalence of lower segment type caesarean sections which can be responsible for the rising percentage of this complication [2, 5]. Fistula signs develop after caesarean operation or later puerperium. Delayed fistula presence can be a result of hematoma in the bladder wall, infection, inadequate bladder mobilization or improper vascularization [1, 4]. This simplifies occurrence of genitourinary fistula after the next operation.

Presence of vesicouterine fistula usually appears with urinary leakage from vagina, cyclic hematuria (menouria), amenorrhea, infertility, first trimester abortions [1, 2, 4, 5, 7]. Urinary incontinence can be a concomitant syndrome [1, 2, 4, 7]. Cyclic hematuria is present late, usually

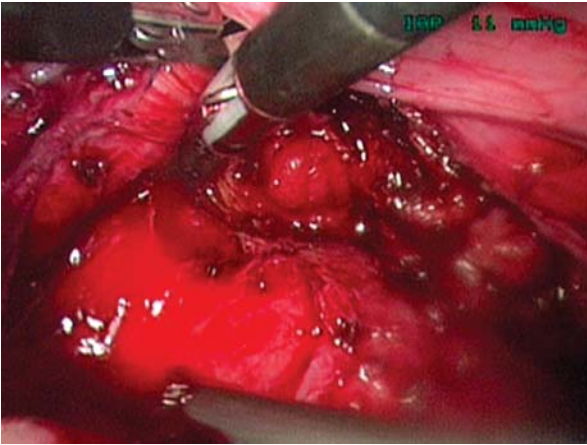


Fig. 6. Urinary bladder posterior wall preparation

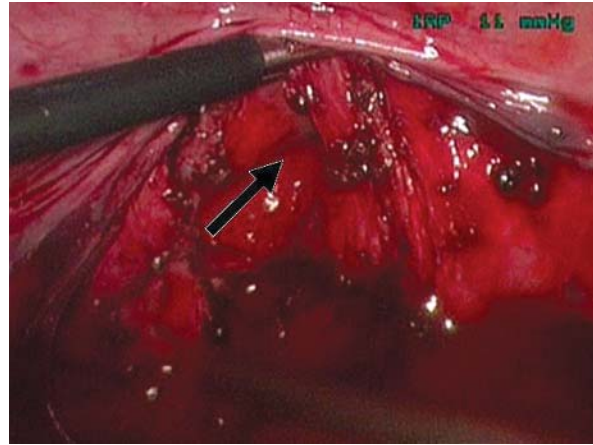


Fig. 7. Urinary bladder posterior wall preparation, the arrow shows fistula entrance

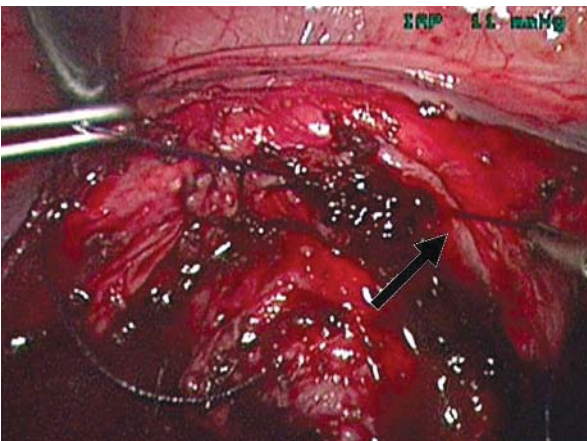


Fig. 8. Urinary bladder posterior wall interrupted suturing, the arrow shows bladder wall

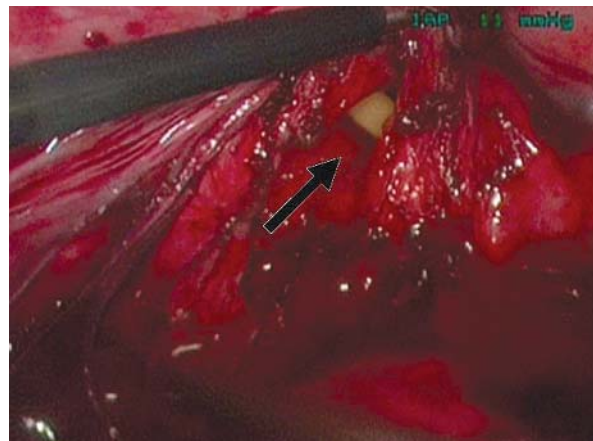


Fig. 9. Urinary bladder posterior wall fistula, the arrow shows Foley inside bladder

with the return of menstruation. Most common manifestation is vaginal urinary leakage.

Visual imaging helpful in diagnostic proceeding of vesicourinary fistula is cystography, urography, cystoscopy, histerosalphingography, computer tomography, magnetic resonance imaging and finally ultrasonography with Doppler imaging. To definitely confirm the diagnosis it is recommended to perform a speculum examination with previously contrast filled bladder, which shows the presence of contrast in vagina or contrast leakage from cervical canal.

Treatment of vesicourinary fistula can be performed by:

- Conservative treatment,
- Operative treatment,
- Spontaneous healing (only 5% of cases).

Conservative treatment by bladder catheterization from 4 to 8 weeks can be applied in the case of early diagnosed fistulas after delivery. Long-term catheterization of urinary bladder helps to accurate void of bladder,

reduction of inflammatory, complete uterine involution. Conservative treatment, if cannot close the fistula, can prepare a genitourinary tract before surgery undertaken. Hormonal therapy is another way of conservative treatment: most usually it is a combination of levonogestrel (25 mg) and estradiol (0.05 mg) [4, 8, 9] per day, continuously for 3-6 months, or leuproline (LH) for six months [8]. It stops the menses and helps fistula recovery. Hormonal therapy is effective in small diameter fistulas (max. 1 cm) [8, 9]. Some authors achieve full recovery of fistula by cystoscopy fistula fulguration and hormonal therapy [9].

Surgery is a mainstay of genitourinary fistulas treatment [2, 5]. Operation is usually performed 3-4 months after complete uterus involution. Transperitoneal, extraperitoneal or vaginal approach is considered. Traditional surgery usually needs wider skin incision and more extensive preparation of urinary bladder. Surgery is connected with massive bleeding and major risk of intra- and postoperative complications, wound infections and

longer hospitalization. Vaginal approach gives worse access to fistula area and nowadays is not applied [1].

Conclusions

Nowadays with significant laparoscopy development, the laparoscopy has been proposed as a proper technique to repair genitourinary fistulas. Laparoscopy is less invasive, painless, brings faster recovery, gives very good cosmetic effect and shortens hospitalization. Laparoscopy pending time is similar to traditional surgery. In the literature, the effectiveness of laparoscopic vesicouterine closure is about 90% [10-12]. Some authors wrote that excellent laparoscopy efficacy was reserved to fistulas less than 1.5 cm [11]. In our opinion, laparoscopy vesicouterine fistula closure can be successfully performed with bigger fistulas. The main criterion for proper performance of that operation is laparoscopy skills and experience of the operator. Laparoscopic repair of vesicouterine fistula is a difficult procedure and requires high laparoscopy skills and proper equipment in the operating theatre.

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