



Uterovesical Fistula as an Uncommon Complication Following Cesarean Delivery: A Case Report

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Abstract

Uterovesical fistula (UVF) represents a rare and undesirable complication of cesarean section. It is the least common type of urogenital fistulae. Here we report a 41-year-old woman who presented with a four-year history of cyclical menouria and secondary infertility. After she resumed her regular menstrual cycles six weeks following her fourth cesarean delivery, she started to recognize the passage of blood with urine with each cyclical vaginal bleeding. The diagnosis of UVF was made through ultrasonography, hysterosalpingography (HSG) and cystoscopy. Being a large-diameter fistula, a successful surgical repair with the traditional open surgery was done and the fistulous tract was completely excised. Recovery was uneventful. There was no more menouria after fistula repair.

Keywords Uterovesical fistula · Cesarean section · Ultrasonography · Hysterosalpingography

Introduction

Uterovesical fistula (UVF) is an abnormal pathological communication between the uterus and bladder and a rare complication of cesarean delivery with an estimated frequency of 1–4% of all urogenital fistulas [1]. Its cause is usually iatrogenic following lower segment cesarean section [1]. The clinical presentation may vary from cyclical menouria (passage of blood with urine), amenorrhea and vaginal urinary leakage or persistent intermittent vaginal discharge to secondary infertility and first-trimester abortion [2, 3]. The diagnosis can be challenging since minority of patients may

not present with urinary incontinence in the early postoperative period but may present late for months or years after their cesarean delivery [3]. Surgical excision of the UVF remains the basis for its treatment [2].

We report a rare case of UVF successfully managed in our hospital.

Case Report

A 41-year-old woman, gravida 4 para 4, with four cesarean births, presented to the gynecologist with a four-year history of cyclical menouria and secondary infertility. She had undergone her fourth lower segment cesarean section in December 2014 in another hospital. According to the operative notes, the bladder was adherent to the lower uterine segment and the surgeon encountered difficulties with dissecting the bladder during the operation. Postoperatively she had hematuria that was managed by keeping the Foley catheter that was inserted at the time of the cesarean section for two weeks. Six weeks after cesarean delivery, she resumed her regular menstrual cycles occurring at intervals of 25 days lasting for three to four days and the patient started to recognize the passage of blood with urine with each cyclical vaginal bleeding (cyclical menouria) starting from the first cycle following cesarean section. There was no urinary incontinence, even though she complained of intermittent

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“wetting” of the vagina. The diagnosis was made four years after her cesarean delivery when she was seen to the gynecology department of our hospital with the above complaints. Physical examination was unremarkable; on speculum examination, there was no urine leak per vagina. The laboratory investigations were normal. Abdominal and pelvic ultrasonography showed both kidneys normal and the presence of a large defect in the anterior myometrium of the



Fig. 1 Hysterosalpingography, an anteroposterior view of the pelvis showing the filling of the bladder with contrast material, suggestive of the abnormal communication between uterine cavity and bladder

lower part of uterine body with deficient adjacent wall of the urinary bladder. Based on the clinical suspicion of UVF from the history of cyclical menouria and giving a history of secondary infertility and the ultrasound findings, hysterosalpingography (HSG) (Fig. 1) was done and the results diagnosed UVF as the contrast seen passed from the uterus to the urinary bladder and an opacified with normal caliber both fallopian tubes, with free spillage seen only from the right side. HSG confirmed the pelvic ultrasound diagnosis of UVF. In April 2019, reconstructive surgery was done by our team, the operation commenced with check cystoscopy which aimed to confirm the fistula, its size and site and to insert ureteric stents bilaterally. Cystoscopy revealed an opening of approximately 1.0 cm × 1.0 cm in diameters in the posterior bladder dome. She underwent a laparotomy with transabdominal surgical repair of UVF through a transperitoneal access. The fistulous tract was identified (Fig. 2) and completely excised; first the bladder side of the fistula was encircled and excised after identifying the ureteral orifices; then, the uterine end of fistulous tract was excised from the lower uterine segment. Each organ was closed separately; the bladder wall was sutured in two layers in a tension-free, watertight manner and the uterus was also repaired in two layers. A three-way Foley catheter (24 Fr) was inserted into the urinary bladder. For the intraoperative assessment of the integrity of closure, an irrigation of methylene blue solution

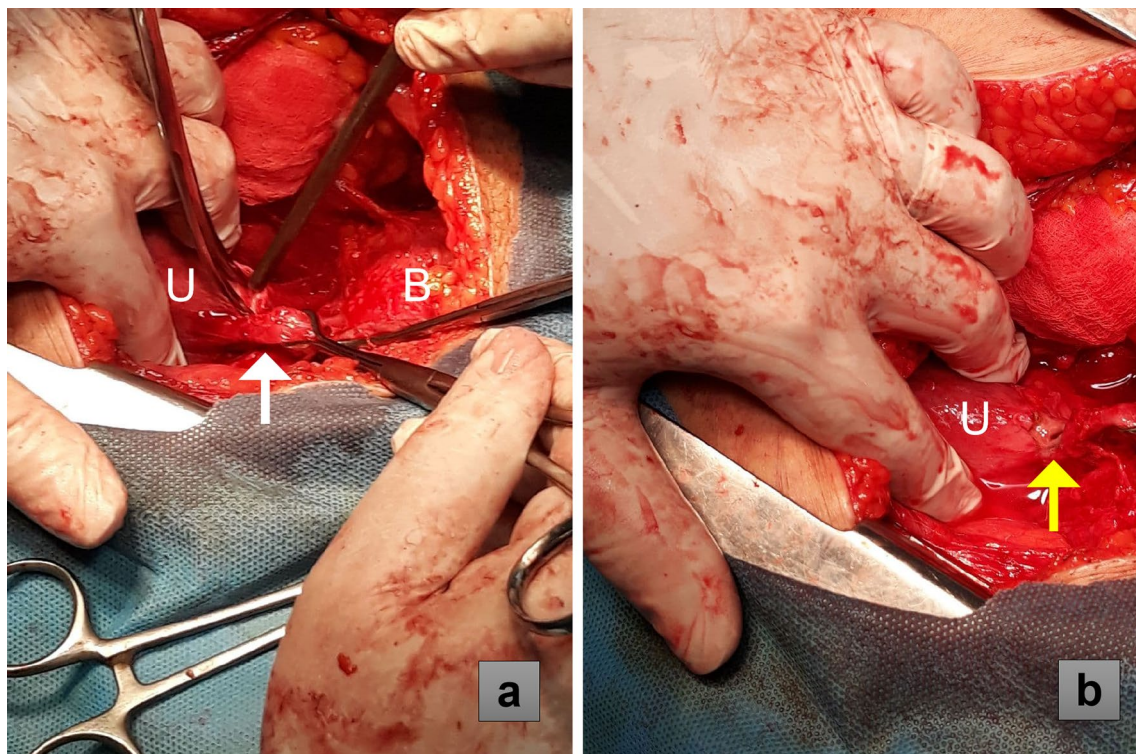


Fig. 2 Intraoperative view demonstrating a uterovesical fistula, **a** fistulous tract between bladder and uterus (white arrow), **b** the yellow arrow depicts the fistulous opening. B indicates urinary bladder and U, uterus

mixed with normal saline was done via the Foley catheter, and as there was no leakage, the operation ended with interposition of an omental flap between bladder and uterus and the abdomen was closed in layers. The postoperative course was uneventful, and the Foley catheter was removed after two weeks. She was discharged from hospital and the repair produced complete relief of symptoms. On reviewing the patient two years after surgery, she had no recurrence for cyclical hematuria.

Discussion

UVF is the rarest type of urogenital fistulae. Its cause is mainly iatrogenic [1]. Generally, the diagnosis is based on the associated patient symptoms [1]. This patient presented with cyclical menouria, intermittent “wetting” of the vagina and secondary infertility for four years with the onset of symptoms at the same time span as her previous complicated fourth cesarean section. This presentation makes us highly suspect UVF, putting it on the top of our differential diagnosis which led us to choose the suitable diagnostic tests. There are different diagnostic modalities for confirming the presence of UVF including imaging procedures or through cystoscopy; however, there is no clear consensus on the best modality [4]. In some occasions, two or more modalities are necessary for the diagnosis [4]. Abdominal sonography, cystoscopy, cystography and HSG play an important role in the diagnosis. Other modalities include transvaginal ultrasound, magnetic resonance imaging (MRI) and contrast-enhanced CT [1]. In this case, the diagnosis was made through ultrasonography, HSG and cystoscopy. Transabdominal ultrasonography gave fairly confirmatory evidence for the UVF. Contrast-enhanced HSG was able to confirm the presence of fistula as the contrast was seen within the bladder. Cystoscopy was helpful in viewing the fistulous orifice, its size and site. For managing UVF after cesarean section, surgery is considered the treatment of choice in most cases especially for wide fistulas [1, 2]. There are different approaches for the surgical repair of UVF which include transperitoneal, transvaginal and transvesical, along with various techniques for such surgeries including open, laparoscopic or robotic-assisted. In the hands of skilled surgeons, minimally invasive techniques started to gain ground as an alternative approach to the traditional open surgical techniques for UVF repair with comparable results [2]. Hysterectomy is not obligatory but may be unavoidable [1]. For cases with small fistulas, there are some reports of successful conservative treatment or fulguration for the fistulous tract during cystoscopy [4]. In the presented case, owing to secondary infertility the patient was concerned about preserving the uterus, so our concern was for the correction of the fistula and hysterectomy was not necessary. Surgical repair of UVF

was performed successfully with the traditional approach through an abdominal open surgery using the transperitoneal access which is considered the most common approach with the use of omental flap to work as a barrier between the uterus and the urinary bladder in order to diminish the risk of recurrence as the repaired defect was big. There was no more menouria after repair with commencement of normal menses without passage of menstrual flow via the bladder after fistula repair.

Conclusion

In the case of history of cyclic menouria and secondary infertility after a repeated cesarean section, it is important to think of the possibility of a uterovesical fistula as an undesirable complication of cesarean section. The diagnosis can generally be made by ultrasonography, HSG and cystoscopy. For large-diameter fistulas, repair with an open surgery and through transperitoneal access is a suitable option.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Human and Animals Rights All procedures performed in this case report were in accordance with the ethical standards of the institutional research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed Consent Informed consent was taken from the patient for publication of this case report.

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