Case Report

Vesicouterine fistula: A case report of successful repair

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ABSTRACT

The increasing rate of cesarean deliveries especially in previous scars is a major cause of vesicouterine fistula (VUF). The incidence of VUF is on the rise because of the increasing incidence of cesarean deliveries. VUF is a pathological communication between the uterus and the bladder. VUF presents in various ways, the main symptoms are urinary incontinence with or without hematuria. There could be depression or psychological distress, which may culminate in reduction in quality of life. The precise and early diagnosis of vesicouterine fistula may be difficult; thus necessitating myriad of investigations such as retrograde cystography, cystoscopy, contrast-enhanced CT scan, MR urogram, and transvaginal ultrasound with or without Doppler. Examination under anaesthesia (EUA) is crucial to the diagnosis of VUF and this includes methylene blue test. We report a case of VUF.

Key words: Urinary bladder; urogenital fistula; uterus; vesicouterine fistula.

Introduction

Vesicouterine fistula (VUF) is a pathological communication between uterine cavity and the bladder mucosa. VUF is a rare type of fistula and accounts for 1–4% of urogenital fistula.[1,2]

Recently, the incidence of VUF has been on the rise due to increasing incidence of cesarean section.[3] It often complicates repeat cesarean delivery even after a long period.[1,3]

Cesarean section accounts for 83–93% of all cases.[2,3] Other causes include obstetric injuries, e.g., uterine rupture during vaginal birth (VBAC), use of forceps, etc.[4] Less frequently, VUF can complicate inflammatory bowel diseases, endometriosis, intrauterine device migration, bladder tuberculosis, congenital lesions, placenta percreta, and manual removal of placenta.[5,6] Newer cause includes uterine artery embolization.[7] VUF is a rare form in our area of practice as majority of obstetric fistulas encountered are dominated by vesicovaginal fistula and rarely ureteric fistula from deep pelvic surgeries. We report a rare case of VUF.

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Case History

This is being reported as the first case of VUF to be managed in this center.

Mrs. MJ, a 35-year-old, P_2^{+1} (1 Alive) fashion designer who presented at the Olabisi Onabanjo University Teaching Hospital with 9-month history of urinary incontinence and 2-month history of menouria.

The urinary incontinence started immediately after her last delivery which was by emergency lower segment cesarean section (EMLSCS) on account of previous scar x1 and prolonged labor at a private hospital.

The incontinence was detected second day post-op whilst on urethral catheter and was on admission for 3 weeks.

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However, baby died at 6 months of life, cause of death could not be ascertained. Seven months after surgery, she resumed her menstruation that became complicated by cyclical menouria.

Her past obstetric history revealed an emergency lower segment cesarean delivery of a live male baby that weighed 4.5 kg in 2013, due to prolonged labor (alive and well).

Examination revealed a young woman, worried-looking, afebrile (T = 37.6°C), well hydrated, and no pedal edema and BMI of 33.5 k/m^2.

The abdomen revealed well-healed Pfannenstiel scar and no palpably enlarged organs.

Vaginal examination revealed normal female external genitalia. Cervix was 2 cm long, posterior, smooth-surfaced, with egress of urine through the external os on speculum examination.

The investigations done revealed normal hemogram. Urinalysis showed proteinuria of 3+, blood 2+, and no glycosuria. Urine microscopy, culture, and sensitivity revealed Klebsiella, sensitive to meropenem and ceftazidime. lectrolytes and urea were within normal limits. Abdominopelvic ultrasounds scan revealed normal organ-system. No renal calculus or pelvicalyceal dilatation was seen. The urinary bladder was grossly under filled. Uterus, adnexa, and pouch of Douglas were all within normal.

On cystogram, urinary bladder was well distended without pouching. Vesicouterine reflux was observed [Figures 1 and 2].

Under general anesthesia (inhalational), the patient was examined and the anterior vaginal wall was found intact except pool of urine in the posterior fornix from egress of urine from the cervix. Dye test revealed free flow egress of dye from the cervix only.

Under regional anesthesia (spinal), the following operation findings were noted:

- Dense adhesions between rectus muscle and the peritoneum were found and separated
- Preisthimic VUF (two), both at longitudinal axis to each other with a uterine defect measuring l. 0 cm x l. 0 cm for the superior and 2 cm × 2 cm to the other after separation
- Posterior bladder defect 4 cm × 5 cm
- Bladder stone 4 cm × 3 cm yellow in appearance
- Normal-sized uterus, grossly normal tubes, and ovaries
- Estimated blood loss of 400 mL
- The communication between the uterus and bladder was disconnected and the defects in uterus and bladder were repaired with Vicryl sutures
- The post-operative period was uneventful.

On post-cystogram report, no abnormal/fistulous connection or leak was noted [Figure 3].

Discussion

VUF is a rare phenomenon and a significant complication of repeat cesarean section.[1,2] This is being reported as the first to be managed in this center. Few cases have been reported; were rare complications of a prolonged obstructed labor or vaginal birth with the use of forceps.[1,2,4] Youssef reported in 1957 on the syndrome that he was named after: bladder injury during cesarean delivery that caused VUF.[8] Prior to 1957, operative vaginal delivery was the commonest cause of VUF and total urinary incontinence was the usual complaint. In postcesarean VUF, menouria is an important symptom while incontinence may or may not be there.[8]

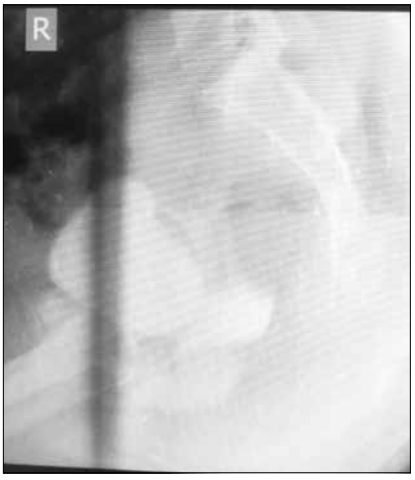

Figure 1: Pre-operative cystogram

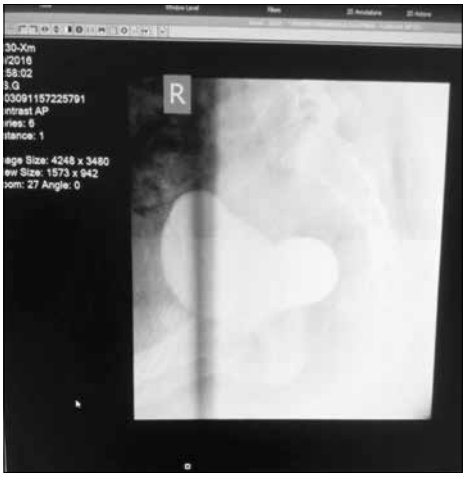

Figure 2: Pre-operative cystogram

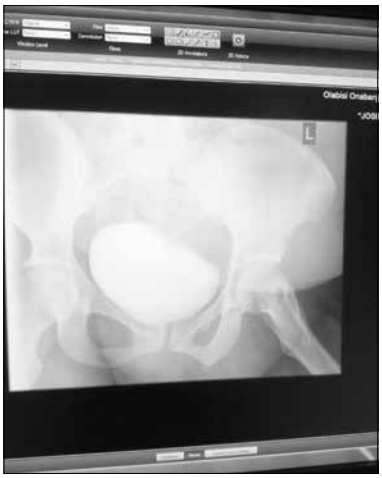

Figure 3: Post-operative cystogram

The usual presentation of patients with VUF is incontinence of urine; others are menouria, cyclical hematuria, amenorrhea, and urinary tract infections.[8,9]

Jozwik *et al*. classified VUF into three types according to menstrual flow:
I: With menouria
II: With menouria and vaginal flow
III: With normal vaginal menses, but no menouria.[6,9]

However, these symptoms can all be present.

The classical Youssef's syndrome is characterized by menouria, absence of urinary incontinence, VUF and amenorrhea despite a patent cervical canal. This is explained by the differential pressure gradient between the uterus and the bladder and the sphincteric action of the isthmus, which facilitates passage of blood from the uterus into the bladder.[9,10]

The diagnosis of VUF is not difficult but often delayed it can easily be established directly or indirectly by demonstrating a communication between the uterine cavity and the bladder mucosa.[6]

It is usually made with vaginal examination, cystoscopy, cystography computed tomography (CT) scan, hysterography, and cystography (used in the case reported) to demonstrate directly the fistulous tract between the bladder and the uterus.

The definitive treatment for VUF is usually surgical, though, some conservative measures can be employed such as long bladder catheterization (4–8 weeks) or electrocauterization reserved for small fistulae; when diagnosed early. The results are poor with about 5% chance of success.[1,3,10] Hormonal management may be tried in a patient with Youssef's syndrome with spontaneous healing reported in 5% of women.[10]

It is usually recommended to delay surgical repair for up to 3 months after the causative surgery.[3,11]

This is to enable spontaneous closure with less inflammation coupled with involution of the uterus thereby, making the surgery easier to perform with less complications. Recent cases have demonstrated successful repair easily with surgical management.[11]

Surgical repair of VUF is by different approaches, which include vaginal, transvesical, transperitoneal, laparoscopic, or robotic procedures.[12] Transperitoneal approach was employed in the case presented, it is considered to be the most effective with lowest relapse rate.

The laparoscopic treatment may be effective in treating small VUF.[12] Hysterectomy may be considered if patient is not keen on future conception. Successful pregnancy and delivery by cesarean section after fistula repair has been reported with 31.2% and 25% respectively.[11]

It is advisable that careful dissections of the bladder away from the site of the uterine incision be made during repeat cesarean section to prevent VUF.

Conclusion

VUF is being encountered consequent upon increased rate of lower segment cesarean section especially repeat surgeries. A high index of suspicion should be considered when patient with previous cesarean delivery presents with menouria.

Proper dissection and separation of layers of adhesion with good surgical techniques will further reduce the incidence of VUF.

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Conflicts of interest
There are no conflicts of interest.

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