

Combined vesicouterine rupture during second-trimester medical abortion for fetal abnormality after prior cesarean delivery: A case report

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ABSTRACT

Introduction: The use of mifepristone and misoprostol for the induction of a second-trimester abortion is common and effective. However, its safety in women with previous cesarean delivery is still controversial, given the potentially higher risk of uterine rupture.

Case presentation: We present the case of a 30-year-old woman (G2P1) who experienced vesicouterine rupture with escape of the dead fetus into the bladder during second-trimester induced abortion after prior cesarean delivery. She was successfully managed with conservative surgery.

Conclusion: This case highlights the challenges of early diagnosis of vesicouterine rupture during second-trimester medical abortion. We argue that a close monitoring of patients with prior cesarean section is mandatory, particularly if uterine contractions suddenly stop or the fetal head fails to descend. A prompt conservative surgical approach allows preservation of fertility.

1. Introduction

Second-trimester medical abortion is a common gynecological procedure, accounting for 10–15% of all induced abortions worldwide [1]. The World Health Organization (WHO) recommends a combination of mifepristone and misoprostol for second-trimester medical abortions. Second-trimester abortions are overall safer than childbirth but rare complications include infection, blood loss, uterine rupture, and death [2–5]. Uterine rupture is a potentially catastrophic complication that often results in hysterectomy [4,6,7]. Combined uterine and bladder rupture appears to be an even rarer complication based on the paucity of prior case reports [8,9], one that represents a challenging uro-obstetric emergency.

Here, we present a case of unexpected vesicouterine rupture during a second-trimester medical abortion in a patient with prior cesarean delivery, managed with a conservative surgical approach.

2. Case presentation

A 30-year-old woman, gravida 2, para 1, was admitted for

termination of pregnancy at 22 weeks of gestation due to a severe fetal malformation. The patient's medical history was notable for a prior low transverse cesarean section nine years earlier. The protocol used for medical termination of pregnancy included mifepristone 200 mg orally followed by three doses of misoprostol 400 µg orally every 3 h [10].

After the third dose of misoprostol, the patient had spontaneous rupture of membranes and complained of severe dull abdominal pain that persisted even after epidural analgesia. The physical examination revealed abdominal tenderness with a change in uterine shape, slight vaginal blood loss, and a cervix that was difficult to reach. Vital signs were stable. Blood tests showed reduced hemoglobin levels (from 11.5 to 9 g/dL), leukocytosis, and elevated level of C-reactive protein. An ultrasound examination revealed large retroplacental abruption (Fig. 1a) and discontinuous anterior uterine wall with fetal parts dislocated caudally (Fig. 1b), thus increasing suspicion of uterine rupture along the previous scar.

An urgent exploratory laparotomy via Pfannenstiel incision was performed under general anesthesia. On entering the abdominal cavity, there was a large membrane of bluish color as if from hemorrhagic infarction, which was assumed to be an excessively thin uterine lower

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segment. In retrospect, it appears we cut through the dome of the bladder. Indeed, as the inflated bulb of the Foley catheter appeared, it became evident that the pelvic formation was an over-distended bladder with the pre-viable fetus inside (Fig. 1c). After careful inspection, a large defect was noted to communicate through the anterior lower uterine segment to the posterior wall of the bladder (Fig. 1d). At this time, urology was consulted intraoperatively to assist with bladder repair. Both posterior and anterior bladder lacerations were repaired using double-layer, delayed, absorbable monofilament suture and double-J ureteral stents were placed. Retrograde filling of the bladder with 120 cc of sterile saline solution confirmed watertight bladder closure. We repaired the uterine isthmus laceration in two layers and applied a hemostatic agent to the hysterotomy. Finally, an omental flap was mobilized and positioned between the opposing suture lines and a retropubic drain was placed.

The postoperative recovery was uneventful and the patient was discharged 3 days after the laparotomy in good clinical condition. The intraperitoneal drain was removed after 7 days while the Foley catheter was kept for 10 days. One month after discharge, the patient had no urinary symptoms and urodynamic testing revealed normal function of the lower urinary tract, with no detrusor overactivity. The maximum

cystometric capacity was 350 mL. The patient was appropriately counselled regarding the risks of a future pregnancy and the need to be followed up at a tertiary-care center.

3. Discussion

This is an unusual case of simultaneous vesicouterine rupture with the delivery of a pre-viable fetus through the bladder during a second-trimester abortion after previous cesarean section.

Uterine rupture is a rare but life-threatening complication of second-trimester medical abortion. A recent systematic review reported a risk of uterine rupture during second-trimester medical abortion of 0.04% in women without prior cesarean delivery and 0.28% in those with prior cesarean delivery [4]. In women undergoing term vaginal deliveries after prior cesarean section, the risk of uterine rupture is 0.5% for those in spontaneous labor and up to 2.4% in those induced with prostaglandins [11–13]. Particularly in patients with a prior uterine scar undergoing medical abortion, persistent dull abdominal pain, cessation of uterine contractions, change in uterine shape, vaginal bleeding, and loss of fetal station should raise clinical suspicion for uterine rupture.

In this case, the uterine rupture caused concomitant rupture of the

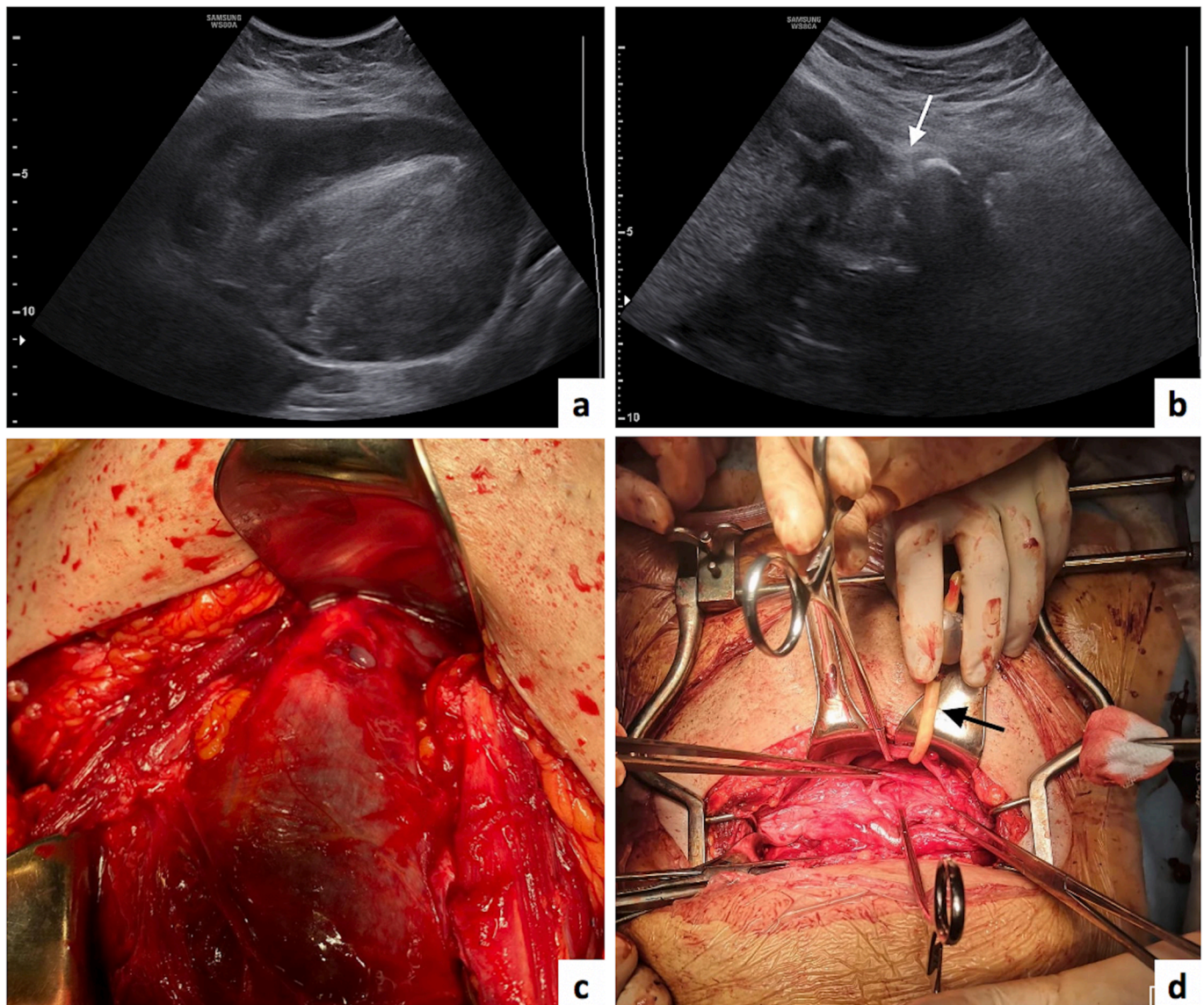


Fig. 1. a. Retroplacental abruption b. Discontinuity of the anterior uterine wall (white arrow) c. Over-distended bladder containing fetal parts. d. Foley catheter coming out through the bladder tear (black arrow).

bladder as a consequence of its vulnerability and immobility secondary to dense adhesions from prior uterine surgery. The use of epidural analgesia may have masked symptoms of uterine rupture and delayed diagnosis in an otherwise hemodynamically stable patient. Furthermore, the diagnosis of bladder laceration was insidious as the patient showed no evidence of hematuria. This could be because the rupture occurred at the site of previous uterine scar, which was not well vascularized.

This is the first report of concomitant vesicouterine rupture during second-trimester induced abortion after prior cesarean delivery. Hysterectomy was avoided and the patient was successfully managed with a conservative surgical approach. An omental flap was positioned in the vesicouterine pouch in order to minimize the risk of fistula development.

In conclusion, this case features a rare complication during a second-trimester medical abortion. As a uterine scar may increase the risk of uterine rupture during induction, this case highlights the importance of prompt recognition and urgent laparotomy to decrease morbidity and preserve fertility.

Contributors

All authors contributed to patient care, conception of the case report, acquisition and interpretation of the data, drafting and revising the manuscript. All authors approved the final submitted version and agreed to be accountable for all aspects of the work.

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Patient consent

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Conflict of interest statement

The authors declare that they have no conflict of interest regarding

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