



Figure 1. The arrow points to the fetal hand becoming visible through the cystostomy. U = uterus.

bladder, and there was no free fluid in the pelvis. The hemoglobin level at that stage was 10.6 g/dl. In view of the previous ultrasound scan, uterine rupture was diagnosed, with bladder injury through which the fetus mostly migrated. Two units of blood were cross-matched, and the patient was prepared for an exploratory laparotomy after consenting for possibility of bladder injury/cystostomy and hysterectomy.

Intraoperative, no blood was found in the abdomen, and the bladder was found densely adherent to the uterine scars with almost no plane of cleavage. Intentional cystostomy was done in the dome of the urinary bladder around 3 cm linear incision. The fetus and the placenta were extracted from the urinary bladder cavity. Then dissection of the urinary bladder off the uterus revealed the uterine rupture at the site of caesarean scar (about 3 cm gap), which was sutured in two layers. The urology team (consultant and resident) repaired the bladder in two layers with no complications. The patient was given antibiotics as per

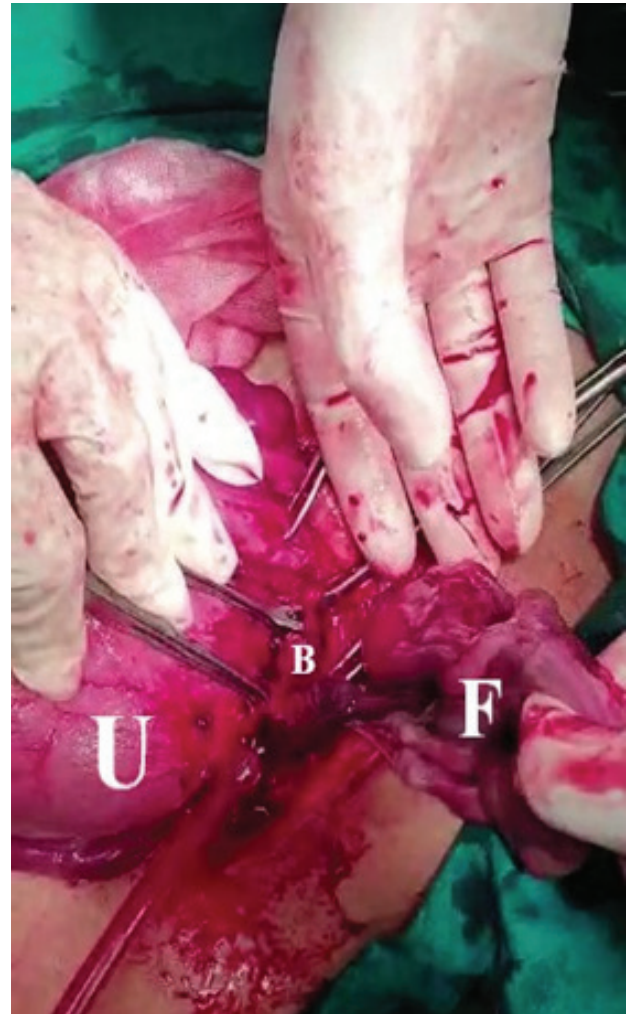


Figure 2. The fetus (F) being extracted from the bladder (B). U = uterus.

protocol (3rd generation cephalosporin and metronidazole) and had a good postoperative recovery. A follow-up 2 weeks later by the urology team was done and she had a normal ascending cystourethrogram.

Discussion

Despite being uncommon, second-trimester pregnancy loss is an important event in the woman's reproductive history [3]. Also, it represents an established clinical problem especially in the setting of a scarred uterus. Different medical and surgical methods can be used for the management of second-trimester loss including D&E, hysterotomy, prostaglandin analogs, mifepristone, osmotic cervical dilators, Foley catheters, and oxytocin [4,5]. Although D&E for second-trimester miscarriage might be preferred as being more cost-effective with fewer complications than medical management [4]; its safety depends on the surgeon's skill and experience, and it may cause psychological trauma [5]. Thus, less traumatic and noninvasive methods are needed, taking into consideration the woman's preferences and choices. Misoprostol is a synthetic prostaglandin E1 analog, that is currently

recommended as an effective agent for the termination of pregnancy in various gestation, cervical ripening, labor induction in term pregnancy, treatment of incomplete miscarriage, and possible management of postpartum hemorrhage and retained placenta [5,6]. In 2012, the International Federation of Obstetrics and Gynecology (FIGO) produced a chart detailing recommended dosages of misoprostol when used alone, for a variety of gynecologic and obstetric indications. As new evidence emerged, and together with the experts' opinions, these guidelines were revised and expanded in 2017. According to the updated regimen, cases of fetal death at 13-26 weeks' gestation, it is recommended to use 200µg every 4-6 hours by vaginal, sublingual, or buccal route [6]. However, this should not be preferred over (mifepristone plus misoprostol) regimen if mifepristone is available [4-6]. In our case, the patient preferred to go with medical management with misoprostol. Unfortunately, mifepristone was not readily available in our country, so we used a misoprostol-only regimen. Our main concern was about the scarred uterus; the patient had four previous cesarean sections. Although FIGO recommends the same dose for both scarred and unscarred uteri at 13-26 weeks' gestation (based on the available studies quoting the rupture of uterus as a rare complication 0.3%) [6]; our local protocol adopts reducing the dose in cases of scarred uteri, especially in cases of more than one previous cesarean delivery. So, our patient was given 100 µg every 6 hours. Despite all these precautions, rupture of the uterus eventually occurred. In fact, this was a probable and an anticipated outcome in her case (four previous cesarean sections).

Uterine rupture is a serious life-threatening obstetric emergency, more commonly encountered in third-trimester pregnancies during labor; but might occur rarely in first- or second-trimester. Risk factors for uterine rupture include advanced maternal age, multiparity, macrosomia, shoulder dystocia, scarred uterus, morbid adherence of placenta, and medical termination of pregnancy [2]. Our case was multiparous with four previous cesarean deliveries, undergoing medical management of miscarriage; thus, uterine rupture was expected. However, the reported risk of uterine rupture among women with a prior cesarean delivery using misoprostol in second-trimestric losses is less than 0.3% [6]; that was why it was agreed upon to proceed with.

Classically, uterine rupture presents with acute abdominal pain, vaginal bleeding, recession of the fetal part, hemoperitoneum, and hemodynamic instability. However, this is not always the case in second-trimestric uterine rupture. Atypical clinical presentations like gastrointestinal symptoms (epigastric pain, constipation, and diarrhea), or a picture suggestive of chorioamnionitis (fever, abdominal pain, and leukocytosis) were previously reported [2]. Another case presented with significant urinary retention following second-trimester abortion, and uterine rupture

was unexpectedly discovered during diagnostic laparoscopy [1]. In our case, the only presentation was hematuria. Otherwise, the patient was vitally stable, with lax abdomen, no free fluid in the abdomen, and no drop in hemoglobin. The diagnosis was based upon high index of suspicion, guided by the ultrasound findings. The ultrasound scan showed an empty uterus with the fetus and placenta inside the urinary bladder, and no free fluid in the pelvis. This points out the importance of the ultrasound in the early detection of some cases of second-trimester uterine rupture before progressing to hemodynamic instability. However, this should not be relied upon solely; high index of suspicion and vigilance about clinical signs and symptoms are still important mainstays for diagnosis.

Conclusion

Second-trimester uterine rupture may present with atypical symptoms or signs; such as hematuria. High index of suspicion, guided by imaging techniques, is essential for early diagnosis to reduce maternal morbidity.

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What is new?

Second trimester miscarriage can be managed by surgical or medical methods, which are generally safe. However, rare but life-threatening complications like rupture of the uterus might occur; which may present atypically. In our case, uterine rupture presented with hematuria with the fetus inside the bladder.

List of Abbreviations

D&E	Dilation and evacuation
FIGO	The International Federation of Gynecology and Obstetrics

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Declaration of conflicting interests

The authors declare that there is no conflict of interest regarding the publication of this article.

Consent for publication

A written informed consent to present this case was obtained from the patient.

Ethical Approval

Ethical approval is not required at our institution to publish an anonymous case report.

Author details

Mohamed Mahmoud Abdelhamid Ahmed Elmezaïen^{1,2}, Rania Hassan Mostafa Ahmed¹

1. Department of Gynecology and Obstetrics, Faculty of Medicine, Ain Shams University, Cairo, Egypt
2. The Royal Wolverhampton NHS trust, Cannock, England

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Summary of the case

1	Patient (gender, age)	Female, 31-year-old.
2	Final diagnosis	Uterine rupture
3	Symptoms	hematuria
4	Medications	Misoprostol
5	Clinical procedure	Started termination of pregnancy with 200 µg of misoprostol vaginally as a loading dose, followed by 100µg misoprostol orally every 6 hours until a total of five doses had been administered; then, laparotomy for fetal extraction and repair of the uterus and urinary bladder
6	Specialty	Gynecology and obstetrics