

## A Rare Type of Uterine Rupture Following Over-the-Counter Use of Misoprostol in Second Trimester Abortion

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**ABSTRACT:** The use of misoprostol in the second trimester by a woman with a uterine scar may lead to severe contractions and uterine rupture. We report a 24-year-old pregnant female patient who presented at the Emergency Department at a tertiary care hospital in Puducherry, India, in 2020 with haemorrhagic shock. She was at 16 weeks of gestation and had taken over the counter misoprostol for inducing an abortion. A quick initial resuscitation and urgent laparotomy were performed. An irreparable circumferentially avulsed uterus suspended only by round ligaments was noted. Haemostasis required internal artery ligation and immediate total hysterectomy. The patient was doing well upon follow-up six months after the surgery. Proper and supervised use of misoprostol in the appropriate dosage can avoid life-threatening consequences of uterine rupture.

**Keywords:** Uterine Rupture; Misoprostol; Induced Abortion; Hysterectomy; Case Report; India.

**T**ERMINATION OF PREGNANCY IN THE FIRST and second trimesters in patients with prior uterine scarring is challenging.<sup>1</sup> Misoprostol is a commonly used drug for induction of abortion even in unsupervised clinical settings.<sup>2</sup> However, its dosing regimen has remained controversial.<sup>3,4</sup> Over-the-counter use of misoprostol has resulted in documented or undocumented incidents of varying grades of uterine rupture. Uterine rupture is a surgical emergency that requires immediate care to avoid life-threatening medical, surgical and psychological consequences.<sup>4</sup> In the current case, a patient with a previous caesarean scar experienced a unique type of uterine rupture which developed after over-the-counter use of misoprostol to induce second trimester abortion.

### Case Report

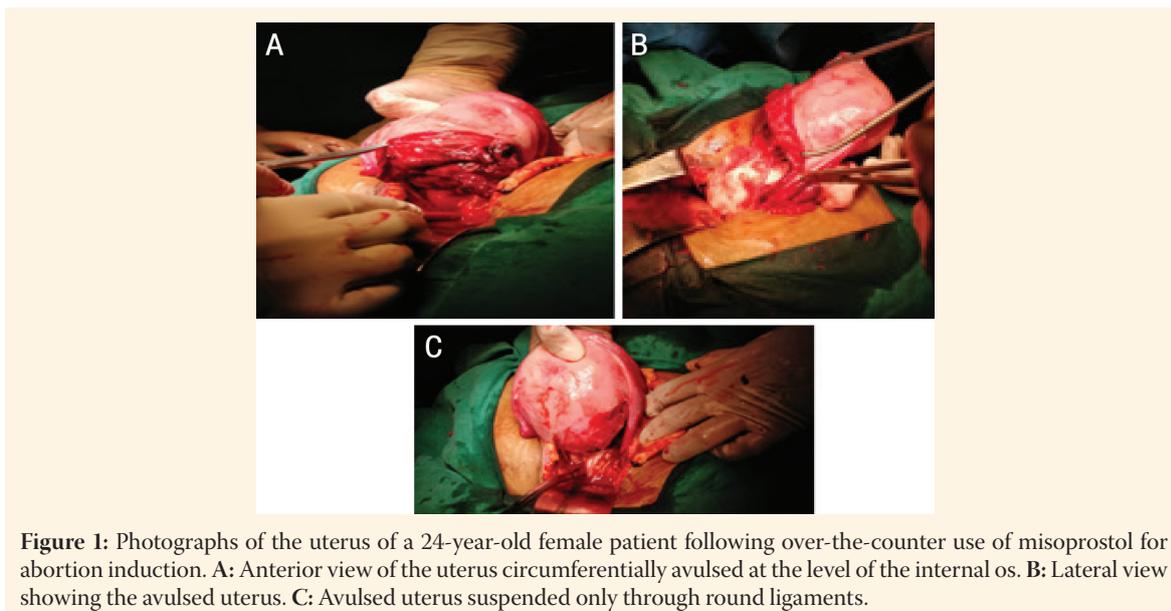
A 24-year-old G3P1L1A1 (pregnant woman who had had a full-term delivery and one abortion and also had one living child) presented at the Emergency Department of a tertiary care hospital in Puducherry, India, in 2020 with haemorrhagic shock. She had taken an unknown dosage of misoprostol (unsupervised) to induce abortion at the 16<sup>th</sup> week of gestation. She had undergone a caesarean delivery two years before the current pregnancy. She self-administered an unknown dosage of misoprostol through the vaginal route at four-hour intervals. She noticed expulsion of the products of conception after two hours of the last dose of misoprostol. A local physician performed dilatation

and curettage to treat heavy vaginal bleeding one day prior to presentation at the hospital. Her vaginal bleeding did not subside and she could have developed iatrogenic uterine perforation after dilatation and curettage. At admission, she was drowsy, extremely pale and afebrile. Her vitals included a pulse rate of 130/min, systemic blood pressure of 90/60 mmHg and respiratory rate of 28 breaths per minute. The remaining cardiovascular, respiratory and central nervous system findings were unremarkable. Abdominal examination revealed a diffuse tenderness and a well retracted uterus deviated towards the right-side of the abdomen. During speculum examination, a continuous fresh blood trickling was noted along with cervical tears at the 2 o'clock and 6 o'clock positions extending until the posterior fornix. Furthermore, the cervix appeared uneffaced and os patulous. Both fornices were boggy and tender; a transverse rent was noted in the posterior fornix through which the posterior wall of the uterus was felt. A bedside pelvic ultrasound scan revealed a post-abortal uterus with an empty cavity and a moderate amount of free fluid in the abdomen. Resuscitation was performed under guided haemodynamic monitoring and an immediate exploratory laparotomy was planned under general anaesthesia.

Intraoperatively, 500mL of haemoperitoneum was noted with large clots in the pelvic cavity. There was a full-length scar rupture with the rent extending posteriorly. The posterior aspect of the uterus was avulsed completely above the level of the internal os and

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it was suspended only by the round ligament bilaterally; it appeared like a bucket handle tear [Figure 1].

The patient remained haemodynamically unstable and circumferential rent repair did not seem possible. There was a broad ligament haematoma of 5 × 5 cm on the left-side. The left uterine artery appeared avulsed and could not be traced. Bladder integrity was normal and there was no evidence of haematuria. Total abdominal hysterectomy along with left internal artery ligation was performed to achieve haemostasis. The patient was successfully resuscitated and extubated inside the operation theatre. Her postoperative investigations were unremarkable. The patient's clinical condition improved completely and she was discharged from the hospital on the seventh postoperative day. The patient was doing well when she was last contacted nearly six months after her surgery. The patient provided written informed consent for publication of the anonymised data during her first follow-up.

## Discussion

An unknown dose of misoprostol followed by dilatation and curettage in a previously scarred uterus could have led to uterine rupture in the current patient. Uterine rupture is primarily a clinical diagnosis, and hence, prompt surgical management is critical. Risk factors for uterine rupture include a previous uterine scar, short interpregnancy interval, multiparity, uterotonic drugs and obstructed labour.<sup>5</sup> Additionally, the incidence of uterine rupture has been noted to be higher in scarred compared to unscarred uteri (0.28% versus 0.04%).<sup>1</sup> A patient's survival after uterine rupture depends on the time interval between the rupture and the intervention and urgent referral to a tertiary care centre.

Rent repair is the key to treatment and internal iliac artery ligation is a lifesaving procedure in cases of uncontrolled obstetric haemorrhage. However, hysterectomy should not be delayed if the bleeding is intractable or the uterine rupture is irreparable.

Second trimester pregnancy termination using misoprostol in an appropriate dosage in supervised settings for women with cesarean scar is safe and it has been associated with uterine rupture in only 0.3–0.4% of cases.<sup>1,6,7</sup> A retrospective report did not observe uterine rupture after misoprostol induction for the termination of second trimester pregnancy in a scarred uterus.<sup>8</sup> In the current patient, a characteristic bucket handle type uterine rupture was noted as was also reported by Abubekar *et al.*<sup>9</sup> An unyielding cervix with misoprostol-induced strong uterine contractions in a scarred uterus may predispose to this type of uterine rupture.<sup>10</sup> In addition, unsupervised vigorous dilatation and curettage could have either led to iatrogenic uterine perforation or further aggravated the tear induced by misoprostol.

## Conclusion

Unsupervised over-the-counter use of misoprostol in a scarred uterus to induce second trimester abortion can have catastrophic consequences. Dilatation and curettage should be avoided before ruling out uterine rupture. An early referral to a higher centre may prevent severe maternal morbidity and mortality.

## AUTHORS' CONTRIBUTION

NJ, HS, JS and AKJ conceptualised and designed the work as well as extracted the data. NJ, JS and AKJ interpreted the results. JS performed the statistical

analysis. All authors contributed to the drafting and approved the final version of the manuscript.

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