

Silent rupture of an unscarred uterus at third-trimester abortion correlated with an unrecognized perforation

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Summary

Silent uterine rupture in an unscarred uterus during pregnancy is rare. We present a case of silent uterine rupture in an unscarred uterus at third-trimester abortion by use of mifepristone and misoprostol in a patient who had a history of intrauterine procedures. The absence of clinical symptoms suggests that this uterine rupture resulted from an unrecognized perforation in a previous intrauterine manipulation. Routine sonographic follow-up examinations and careful clinical observations are especially recommended for women with previous intrauterine manipulations.

Key words: Uterus rupture; Abortion; Intrauterine manipulation; Uterus perforation.

Introduction

Uterine rupture is a serious pregnant complication, with an increased risk of maternal and perinatal morbidity and even mortality, which usually occurs in women with a known uterine scar, such as cesarean section or myomectomy. An unscarred uterine rupture is relatively rare and has been estimated to occur in approximately one in 8,000-15,000 deliveries [1]. These cases are usually associated with iatrogenic uterine perforation, inappropriate induction or augmentation of labor, multiparity, application of fundal pressure, placenta accreta, and congenital anomalies. Here, we present a case of silent uterine rupture in an unscarred uterus at third-trimester abortion by use of mifepristone and misoprostol in a patient with a history of intrauterine procedures.

Case description

A healthy, 28-year-old woman, gravida 5, para 1, abortion 3, was referred to our hospital at 32+4 weeks of gestation for induction of labor due to ultrasonic (US) findings of oligohydramnios and fetal anomaly. At 27 and 32 weeks of gestation, US examinations both indicated a remarkable decrease of amniotic fluid volume (1.8 and 0.8 cm in the amniotic fluid index, respectively), fetal growth restriction (5.3 and 6.3 cm in BPD, 3.8 and 4.4 cm in FL, respectively) and dysplasia of the fetal kidney. Additionally, Doppler color flow imaging also showed a single-peaked umbilical blood flow in the frequency spectrum.

After an initial clinical assessment, the patient was pretreated with 200 mg of mifepristone orally (50 mg every 12 hr, 4 times) followed by 200 g of misoprostol orally 2 hr later. The signs of labor, including uterus contraction, abdominal pain and vaginal bleeding, were then regularly monitored in the ward. No apparent contraction or bleeding was observed and the patient had no

special complaint except slight pain in the lower abdomen. In regular anal examinations, the cervix remained closed, firm and in midposition. The patient's general condition preceded uneventfully, until 38 hours later when the uterus fundus was found to be lower and the shape of the uterus on the right side was irregular by careful palpation during regular clinical rounds. A bedside US examination was performed to rule out the possibility of uterus rupture or placenta abruption. A retracted uterus with an empty cavity was revealed, but the placenta was fundally sited with no evidence of abruption. No free fluid in the maternal abdominal cavity was demonstrated. Most striking was the finding of an 8 cm defect in the anterior uterus wall, through which the trunk and some limbs of a dead fetus were intruding into the maternal abdominal cavity, which could be visualized between the intestines and bladder. As this situation was considered to carry serious maternal risks, an emergency laparotomy was performed. After opening the abdominal cavity, no hemoperitoneum was observed. An incomplete laceration of approximately 10 cm on the anterior surface extending from the right lower segment to the left uterus body was identified. The dead fetus covered with the uterovesical peritoneum was located between the retracted uterus cavity and the abdominal cavity. Through opening the incomplete laceration, the dead fetus was removed and the clear amniotic fluid and normally placed placenta were identified, with no evidence of abruption. The uterus was preserved by a 2-layer suture. The patient recovered uneventfully and was discharged seven days later.

Discussion

Based on the dosage of mifepristone and misoprostol and absence of abnormal symptoms, we can almost rule out the possibility of inappropriate use of mifepristone and misoprostol as being the cause of uterine rupture in this case. This patient was multiparous and had no history of cesarean section or myomectomy. Concerning the fact that she had had instrumental abortion three times during first-trimester pregnancy, we hypothesize that this silent uterine rupture may have resulted from an unrecognized perforation in a previous intrauterine manipulation. Although uncommon, uterine perforation is a known

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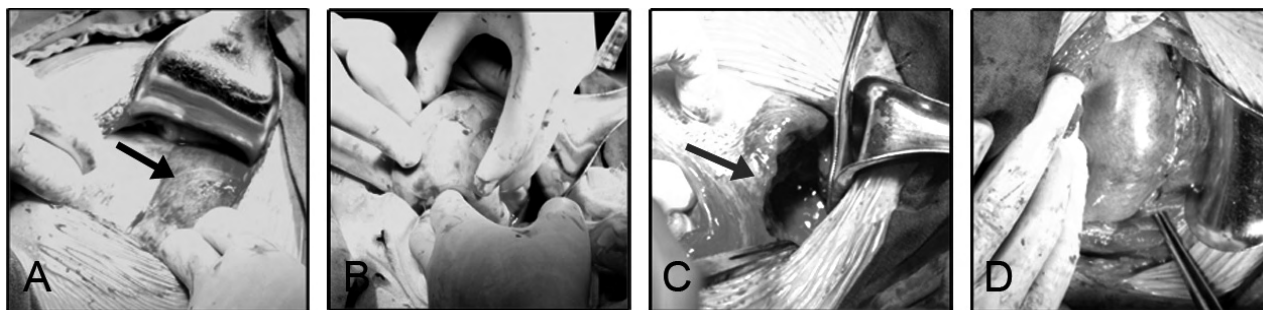


Figure 1. — A) incomplete laceration in the anterior uterine surface, and the dead fetus covered with uterovesical peritoneum; B) the incomplete laceration was opened and the dead fetus and placenta removed; C) open laceration and empty uterine cavity; D) the laceration was 2-layered sutured and the uterus preserved.

complication of intrauterine manipulation, such as curettage, instrumental abortion and hysteroscopy. The incidence of uterine perforation associated with abortion by suction curettage has been reported to be 0.08-0.17% [2]. Perforations following the first-trimester intrauterine manipulations may be symptom-free and, in fact, usually be difficult to detect. In a previous report, 14 uterine perforations (2%) in a series of 706 cases with a history of first-trimester curettage were demonstrated by laparoscopic sterilization, of whom 12 (86%) had not been recognized during the procedure [3]. Although the first-trimester intrauterine manipulation is generally considered to be minimally invasive and relative harmless, usually with no short-term consequences, some hazardous maternal and neonatal complications in subsequent pregnancies may be associated with this procedure. Some reports have suggested that a few of unscarred uterine ruptures should have a possible relation with previous uterine manipulations. Notably, these uterine ruptures usually occur in second- or third-trimester pregnancy [4-7]. By stopping bleeding and suturing the laceration in emergency laparotomy, most of these cases have ideal clinical outcomes with preservation of the uterus.

Our patient is not contraindicated for subsequent pregnancies, but we informed her of the substantial risks in subsequent pregnancies. She was advised that the interval to the next delivery should be at least 18 months. Inpatient care after 32 gestational weeks and elective cesarean section after 37 completed weeks seem to be the best care for these women [8].

This case and our comments suggest that clinicians should be aware of the possible occurrence of silent uterine rupture in an unscarred uterus during the late

stage of pregnancy. Routine sonographic follow-up examinations and careful clinical observations are especially recommended to women with previous intrauterine manipulations.

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