Silent Uterine Rupture in an Unscarred Uterus

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SUMMARY

Objective: Uterine rupture is one of the most serious obstetric complications, with an increased risk of maternal and perinatal morbidity, and even mortality.

Case Report: A multiparous woman came to our labor room at 41 weeks of gestation for induction of labor due to being post-term and having a nonreactive nonstress test. She had no history of abdominal or gynecologic surgery. Emergent cesarean section was performed due to prolonged decelerations shown on the fetal monitor. A 12 cm uterine laceration was identified after opening the abdominal cavity. Fortunately, her uterus was preserved and her postoperative condition was stable.

Conclusion: To avoid maternal and fetal morbidity, or even mortality, obstetricians should be aware of the possible existence of uterine rupture in an unscarred uterus. [*Taiwanese J Obstet Gynecol* 2006;45(3):250–252]

Key Words: prostaglandin E2, silent rupture, unscarred uterine rupture

Introduction

Uterine rupture is one of the most serious obstetric complications, with an increased risk of maternal and perinatal morbidity, and even mortality. The majority of uterine ruptures occur in women with previous uterine surgery, such as cesarean section or myomectomy. Other risk factors include iatrogenic uterine perforation, inappropriate induction or augmentation of labor, multiparity, application of fundal pressure, placenta acreta, trauma, congenital anomalies and sacculation of entrapped uterus [1,2]. Here, we present a case of uterine rupture in a patient who had previously delivered a healthy baby by normal vaginal delivery.

Case Report

A gravida 2, para 1, abortion 0 woman came to our labor room at 41 weeks of gestation for induction of labor due to being post-term and having a nonreactive nonstress test. She had regular prenatal care at our clinic. After 6 hours of observation, a 3 mg vaginal tablet of prostaglandin E2 (PGE2) (Pharmacia & Upjohn, Taiwan) was inserted into the posterior fornix of the patient's vagina for induction of labor. Since she had no uterine contractions and her cervical condition remained unchanged, we inserted another PGE2 tablet 6 hours later. A total of two PGE2 tablets were inserted. Another 6 hours later, we administered oxytocin 10 U/mL/0.5 ampoule (Organon, Taiwan) because the uterine contractions were irregular, cervical dilatation was only 1 cm and cervical effacement 50%. Five hours after oxytocin induction, her cervix was dilated to about 5 cm, the fetal head was engaged and fetal station was zero. After several minutes of labor contractions at 2–3-minute intervals, with a pressure tension of 80–100 mmHg, the fetal heartbeat showed multiple late and variable decelerations to approximately 90 bpm. We stopped oxytocin, placed the patient in the left lateral decubitus position, and gave oxygen and intravenous fluid for intrauterine resuscitation. Ultrasonographic examination was performed to rule out the possibility of placental abruption, and the results were negative. Ten minutes later, the patient complained of severe right lower back pain and the

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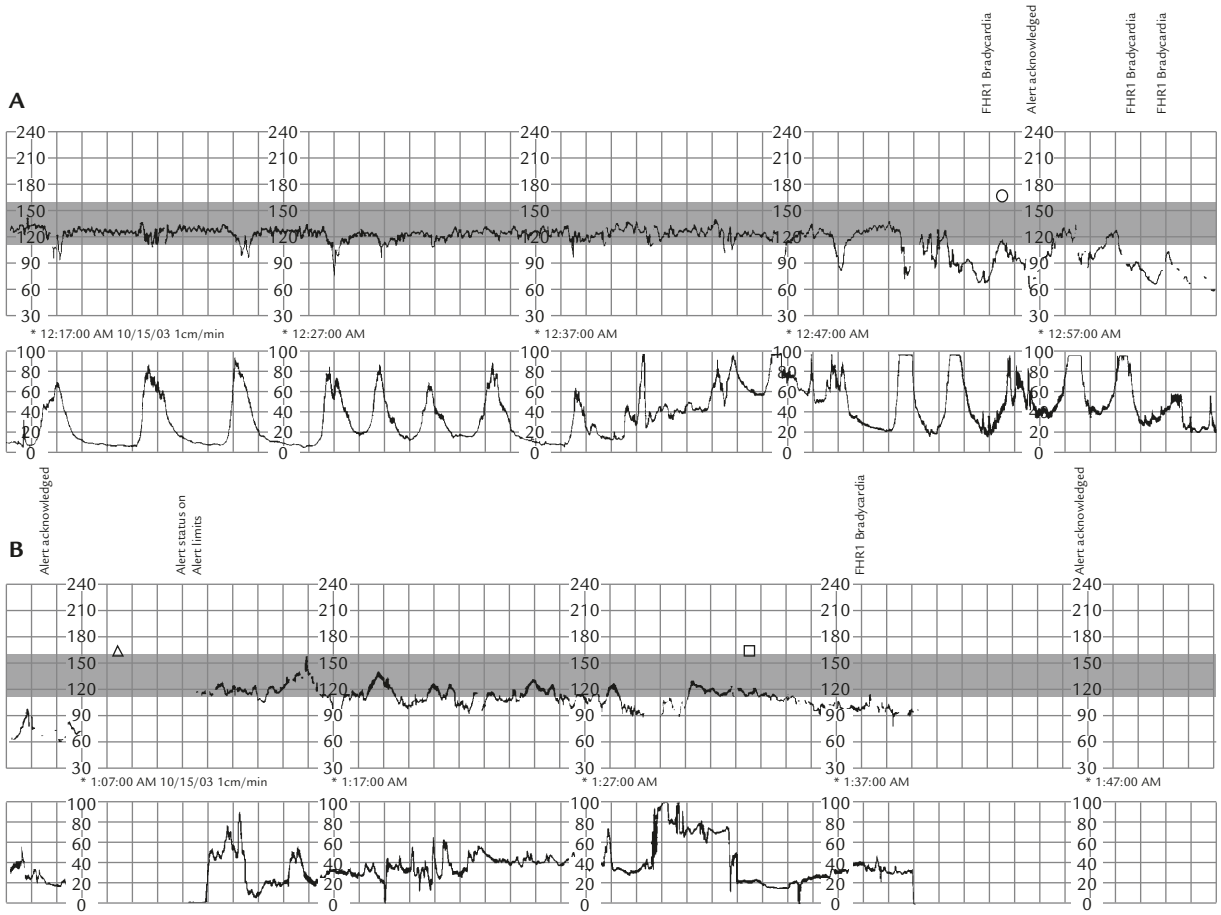

Figure. (A) Fetal monitor tracing demonstrates fetal heart rate deceleration before ultrasonographic examination. (B) Fetal monitor tracing demonstrates fetal heart rate deceleration before surgery. O = oxytocin therapy stopped, patient placed in the left lateral decubitus position, and given oxygen and intravenous fluid for intrauterine resuscitation; Δ = ultrasonography performed; □ = patient sent to surgery.

fetal heartbeat again decelerated, showing prolonged deceleration to approximately 80 bpm (Figure). The patient was immediately sent to surgery.

After opening the abdominal cavity, massive internal bleeding was observed. The fetus was in the abdomen, outside the uterine cavity. A laceration of approximately 12 cm extending from her right fundal area to the right supracervical area was identified. A male baby weighing 3,584 g was delivered via the ruptured opening in the right posterior uterine wall. The Apgar score was 3 at 1 minute and 4 at 5 minutes. The amniotic fluid was not meconium-stained. The placenta was free in the abdomen and removed manually. The estimated blood loss was 2,000 mL; the patient's pre- and postoperative hemoglobin levels were 12.4 g/dL and 8.9 g/dL, respectively. Fortunately, her uterus was preserved by primary suture and her postoperative condition was stable. She was discharged from hospital 7 days later.

The neonate was transferred to our neonatal intensive care unit immediately after delivery for a pediatrician to perform resuscitation. Unfortunately, the neonate died 1 month later due to severe acidosis and ischemic encephalopathy.

Discussion

Uterine rupture in an unscarred uterus is very rarely reported in the medical literature and has been estimated to occur in approximately one in 8,000–15,000 deliveries [2]. During a 7-year period at our hospital, this was the only case we encountered (one in 9,000 deliveries). The risk factors for uterine rupture are related to inappropriate prostaglandin usage, inappropriate oxytocin usage, previous instrumental abortion, vigorous fundal pressure, vacuum extraction delivery or induction of labor in a woman who has previously undergone cesarean section [1,2].

Our patient was multiparous and had previously had a normal vaginal delivery. She was labor-induced with PGE2 and oxytocin; each vaginal tablet of PGE2

was inserted at 6-hour intervals under strict observation of the fetal monitor. We used oxytocin 6 hours after the second tablet (maximum dose, 3.5 μm/minute). Hence, we can rule out PGE2 or oxytocin as being the cause of the ruptured uterus in this case.

It is difficult for us to provide a reasonable explanation as to why the uterus ruptured in the right posterior area. In this patient, we did not perform a hysterectomy or biopsy during the emergent operation; the placenta was in the abdomen, free from the uterus. We cannot exclude the possibility of underlying pathologic changes.

The mother was multiparous and so we suspect that she might have had a silent rupture due to a previous pregnancy.

In this case, we successfully preserved the uterus because we stopped bleeding by suturing the entire laceration. In a previous study, cesarean hysterectomy was performed in a similar situation and the authors recommend that detailed informed consent, including the possibility of emergency peripartum hysterectomy, be obtained [3,4].

We must also think about the risks involved for this patient in any subsequent pregnancies. Kapoor et al postulated that women with previous uterine ruptures are not contraindicated for subsequent pregnancies but should be counseled that subsequent pregnancies carry substantial risks. Inpatient care after 32 gestational weeks and elective cesarean section after 37 completed weeks seem to be the best care for these patients [5]. If this patient wishes to go through labor in future, then the interval to the next delivery must be at least 18 months. This is suggested because, in a previous study, the risk of uterine rupture during labor after cesarean delivery was increased if the interdelivery interval was less than 18 months compared to the risk if the interval was longer [6].

When uterine rupture occurs and the placenta and fetus are extruded from the uterine cavity, severe metabolic acidosis is frequently found in the fetus, leading to multiple neonatal sequelae [7]. In our case, it not only led to neonatal morbidity but also to mortality. Bujold and Gauthier reported that even with prompt intervention (< 18 minutes from onset of prolonged deceleration to delivery), neonatal morbidity may not be prevented [7].

In conclusion, based on this extremely rare case report and those described in the literature, obstetricians should be aware of the possible existence of uterine rupture in an unscarred uterus, so that careful measures can be taken to avoid maternal and fetal morbidity or even mortality.

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