Case Report

Unusual case of spontaneous uterine rupture in a single gestational primipara

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Abstract

Spontaneous rupture of the primiparous uterus is a rare but catastrophic obstetrical emergency. It is usually associated with prior uterine surgery, trauma, or placental abnormality. To remind physicians to include this condition in their differential diagnosis of acute abdominal pain in pregnant patients, we describe an interesting case of spontaneous uterine rupture that clinically mimicked bowel perforation. A 27-year-old single primiparous pregnant woman presented with sudden onset of severe abdominal pain and peritoneal signs, with absence of vaginal bleeding at 26 weeks’ gestation. The usual risk factors for uterine rupture, such as advanced maternal age, scarred uterus due to mode of previous delivery, or unusual pregnancy, were not present in our patient. Based on clinical examination, abdominal sonography and magnetic resonance imaging, uterine rupture was suspected and eventually confirmed at exploratory laparotomy. No uterine pathological abnormality was noted on the microscopic examination. The preterm newborn expired after surgery. Since surgical intervention is the only definitive treatment, emergency physicians should be aware of this rare complication. Emergency physicians should be aware of spontaneous uterine rupture in pregnant patients, even in the absence of risk factors.

Keywords: Acute abdomen; Primipara; Uterine rupture

1. Introduction

Uterine rupture in a laboring patient is a well-known complication of pregnancy and a catastrophic obstetrical emergency. Spontaneous uterine rupture is a rare and life-threatening event and is difficult to diagnose, especially in an unscarred uterus. Few researchers have reported spontaneous uterine rupture without underlying causes, regardless of gestational age or multiparous status. Yap et al. suggested that uterine rupture does not result in major maternal morbidity and mortality or in neonatal mortality in hospitals with obstetric, anesthesia, and surgical staff and with close monitoring of fetal and maternal well-being. We report a case of a pregnant, primiparous woman who presented with an acute abdomen due to spontaneous uterine rupture.

2. Case presentation

A 27-year-old woman in her first pregnancy at 26 weeks’ gestation, with no known congenital disorders or systemic diseases, presented with sudden onset of right upper quadrant abdominal pain that had extended to the entire abdomen 30 minutes later. The patient had received regular prenatal care from the department of obstetrics and gynecology. Previously,
the pregnancy had been normal and sonography had found a double uterus—one normal-sized uterus and one atrophied uterus.

Because of progression of abdominal symptoms, the women visited our emergency room (ER). Her initial blood pressure was 106/72 mmHg, heart rate 72 beats/minute, body temperature 37 °C, and respiratory rate 14 breaths/minute. She denied any history of fever, chills, or trauma before admission. Physical examination revealed tenderness over the entire abdomen, especially in the right lower quadrant, with rebound tenderness and muscle guarding. Laboratory data revealed a white blood cell (WBC) count of 12,170/μL, with 71% segmented neutrophils, hemoglobin 10.5 g/L, and lipase 2 μL. Fetal monitoring demonstrated profound spontaneous deceleration of the fetal heart rate. Because of the absence of obvious uterine contractions and the early gestational age, tocolytic treatments were first prescribed.

Furthermore, emergent abdominal sonography performed within the first 2 hours in ER, it revealed a massive volume of ascites over Morison’s pouch, the splenorenal fossa, and the cul-de-sac. Under sonographic guidance, bloody ascites was drawn from the peritoneal cavity, leading to suspicion of internal bleeding. To clarify the source of the abnormal bloody fluid, magnetic resonance imaging (MRI) was performed after 6 hours of observation in the ER. In addition, the patient and her family were concerned about maternal and fetal survival, and wanted more precise information before exploratory laparotomy. MRI revealed a profuse amount of intra-abdominal fluid, a suspected right ovarian cyst with rupture, and no apparent abnormal changes in signal intensity over the hepatic, pancreatic, splenic, or bilateral renal parenchyma (Fig. 1).

Based on these findings and on multidisciplinary discussion, uterine rupture or rupture of an ovarian cyst was first suspected. Because the patient was in shock, an immediate exploratory laparotomy with a vertical midline incision was carried out, and a huge volume (1900 mL) of bloody intraperitoneal ascites was drained. The placenta weighed 275 g, and no abruption was detected. A 1 cm × 1.5 cm perforation over the pregnant uterine fundus near the right Fallopian tube was noted and repaired. No uterine pathological abnormality was noted on the microscopic examination. The preterm newborn expired after surgery. The patient was discharged in a stable condition 6 days later.

3. Discussion

Spontaneous uterine rupture is a life-threatening event that is difficult to diagnose, especially in an unscarred uterus. Importantly, emergency physicians should be suspicious of unusual or intractable abdominal pain in pregnant women, which may indicate ischemic events, uterine vascular interruption, or uterine rupture. Bretones et al reported that multiparity, uterine distension, congenital abnormality, and active labor could all be considered risk factors for uterine rupture in cases of unexplained anomalies in an unscarred uterus. A ruptured uterus is significantly associated with advanced maternal age, grand multiparity, lack of antenatal care, and low socioeconomic status of the patient. However, no associated risk factors for uterine rupture were present in our patient. This condition is not easy to diagnose because uterine rupture at a preterm gestational age in a non-laboring woman may present with nonspecific findings and may be associated with rapid maternal and fetal decompensation.

Retzke et al reported uterine rupture in a woman with three prior vaginal deliveries and no history of uterine surgery, trauma or other risk factors for uterine rupture, who presented at 17 weeks’ gestation with vaginal bleeding and an acute abdomen. The normal, unscarred uterus is least susceptible to rupture, with a rate of 0.012% among all pregnancies in developed countries. The incidence is significantly higher in developing than developed countries. Gurudut et al reported on a case of a 33-year-old multiparous pregnant woman in which maternal and fetal mortality were due to spontaneous rupture of an unscarred uterus at a gestational age of 36 weeks. A similar case in which the mother survived was documented by Sakr et al. Fofie and Baffoe’s 2-year regional hospital review and the World Health Organization’s systematic review of maternal mortality showed that uterine rupture is more prevalent in less developed than in developed countries.

In contrast, our patient was a primipara, and survived after the operation. Importantly, prompt diagnosis and treatment are essential in limiting morbidity and mortality in these cases. Although MRI is the preferred imaging modality for assessment of pregnant patients, few reports illustrate its utility in pregnancy and its advantages over other imaging modalities for diagnosing uterine rupture. Since surgical intervention is the only definitive treatment, emergency physicians should be aware of this rare complication.
4. Conclusion

Emergency physicians should be aware of the possibility of spontaneous uterine rupture in pregnant patients with acute abdominal pain, even in the absence of risk factors.

References


