

Spontaneous uterine rupture at an unusual site due to placenta percreta in a 21-week twin pregnancy with previous cesarean section

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Summary

Spontaneous uterine rupture is a rare, but serious complication of placenta percreta. This case report is about a spontaneous uterine rupture at an unusual site due to placenta percreta in a 21-week twin pregnancy with previous cesarean section. A 30-year-old, G3, P2 woman was referred to our unit in the 21st week of a twin pregnancy with acute abdomen. An emergency laparotomy was performed with the diagnosis of uterine rupture and intra-abdominal hemorrhage. A significant hemoperitoneum was found, with both fetuses freely floating in the peritoneal cavity. A large transverse rupture at the posterior isthmus wall was detected. Subtotal hysterectomy with preservation of both ovaries was performed. Pathological investigation of the uterus revealed placenta percreta.

Key words: Uterine rupture; Placenta percreta; Previous cesarean section.

Introduction

Uterine rupture is usually associated with a prior history of uterine trauma or an infection. It usually occurs in the third trimester during the process of labor and delivery. Spontaneous uterine rupture is a disastrous complication of placenta percreta. Its occurrence in the second trimester without any predisposing factor is very rare [1, 2]. This case report is about a spontaneous uterine rupture at the posterior isthmus wall due to placenta percreta at 21 weeks of a twin pregnancy with previous cesarean section.

Case

A 30-year-old, G3, P2 woman was referred to our unit in the 21st week of a twin pregnancy with acute pain abdomen. The pain started in the morning, progressively increased, becoming diffuse through the abdomen and was associated with vomiting. She had a history of previous cesarean section due to breech presentation. Her present pregnancy was unsupervised. There was no history of blunt trauma to the abdomen, uterine evacuation or termination of pregnancy. Her past medical history was uncomplicated.

On examination the patient was markedly pale and in shock with cold and clammy extremities. Her blood pressure was 70/40 mmHg, and her pulse rate was 106 beats per minute. Her body temperature was 98.4°F. Lower abdominal distension with rebound tenderness and guarding was present. The bowel sounds were decreased. Some fetal parts could hardly be palpated on her abdomen. On pelvic examination she had no active vaginal bleeding, but there was some coagulum in the vagina.

The cervical os was closed and there was cervical tenderness. The uterus was enlarged but difficult to outline.

The patient's hematocrit was 23%, with a white blood cell count of 21,700. Blood chemistry was normal. Ultrasound examination revealed a 21-week dichorionic, diamniotic twin pregnancy with anterior and posterior placenta. The internal os was completely covered by the posterior localized placenta. Neither of the fetuses was alive and they were in the upper abdomen, out of the uterus. There was markedly diffuse free fluid throughout the abdomen. The diagnosis of uterine rupture was made and several possible reasons for the rupture such as previous cesarean section and placenta percreta were entertained.

Under general anesthesia, an emergency laparotomy was performed through a lower abdominal midline incision. Three liters of hemoperitoneum and clots were present. The fetuses were in the subdiaphragmatic area, out of the uterus. The uterus was 14-16 weeks in size, with a 7 cm transverse paramedian defect at the posterior side of the isthmus, through which the invading placenta with the bulging bag of the membranes was protruding. Dead male and female fetuses weighing 350 g and 300 g, respectively, and the placentas were extruded. The attachment side of the placenta at the posterior side began to bleed. Bleeding was attempted to be controlled with eight sutures, but it still continued. The clinical impression was that of a uterus rupture due to placenta percreta. Because the patient's condition was unstable and she had two healthy children, a subtotal hysterectomy with preservation of both ovaries was performed. The bleeding persisted until clamping of the uterine arteries. Total blood loss was estimated as two liters. Four units of whole blood and two units of fresh frozen plasma were transfused intra- and postoperatively.

The postoperative period was uneventful and the patient was discharged on day 5 with hemoglobin of 8.2 g/dl. She was prescribed iron tablets. Histopathological examination confirmed the diagnosis of placenta percreta.



Figure 1. — A 7-cm transverse paramedian defect can be seen at the posterior uterine isthmus wall with twin fetuses

Discussion

Spontaneous rupture of the uterus during pregnancy in the second trimester is rare and when it occurs, it is a catastrophic event for both mother and fetus. In differential diagnosis, previous cesarean section, uterine surgical interventions, manipulations and blunt trauma should be regarded. In the absence of these situations, placenta percreta might be a possible cause [3-5]. Although uterine rupture caused by placenta percreta is usually seen during the late second and third trimester of pregnancy, few case reports have been published in the first and early second trimester [6, 7].

Abnormal placentation is thought to result from imperfect development with partial or complete absence of the fibrinoid layer, which causes the chorionic villi to attach to the myometrium directly. The incidence of abnormal placentation varies from 1: 2,510 [3] to 1: 7,000 [6], and placenta percreta accounts for 5% of these cases. Previous cesarean sections, placenta previa and maternal age have been identified as independent risk factors for placenta percreta. Other antecedent risk factors are uterine maldevelopment, endometrial curettage, septic endometritis and thinned-out endometrium due to a myoma or previous history of manual removal of the placenta [8]. In patients without uterine surgery who had placenta previa, the incidence of abnormal placentation will be 4% [9, 10]. In patients with previous cesarean delivery, who had placenta previa, the incidence of abnormal placentation is approximately 10% to 35% [9, 10]. In patients with multiple cesarean deliveries and placenta previa, the risk of abnormal placentation is 60 to 65%. In our patient, both placenta previa and previous cesarean section were present as risk factors. However uterine rupture due to previous cesarean section was unlikely, since she was not complaining about uterine contractions. Interestingly, in our patient the placenta did not adhere to

the anterior scarred uterine wall but to the posterior wall. This finding suggested that the reason for the rupture was not a previous cesarean section. In case reports [2-4] the presenting uterine rupture due to placenta percreta is usually located at the fundus or anterior uterine-scarred wall. However our case had an unusual rupture localization at the posterior isthmus wall. This finding was consistent with the opinion, that the cause of rupture was placenta percreta rather than previous cesarean section.

The diagnosis of uterine rupture can be made with clinical and radiological findings, whereas the diagnosis of placenta percreta without any known risk factors is not easy. On sonography there is loss of the normal retroplacental hypoechoic zone, thinning or disruption of the hyperechoic serosa and focal projections beyond the uterine margin [11]. Abnormal blood flow patterns may be detected by color Doppler, but it is not in routine clinical usage [9]. Magnetic resonance imaging can be used in diagnosis by delineating the placental interface but its expense precludes routine use [12]. Early diagnosis before acute presentation should be the aim, but this catastrophic condition is usually diagnosed in the emergency room, after intraperitoneal hemorrhage has occurred.

Once the diagnosis of uterine rupture and intraperitoneal hemorrhage has been established, prompt surgical intervention is essential. Two different management strategies have been described, namely surgical removal of the uterus or conservative management with the placenta in situ [13]. Conservative management can be considered in hemodynamically stable patients where uterine preservation is highly desired, in patients with focal defects and no bladder invasion has occurred [14]. At least two-thirds of the patients with placenta previa/placenta percreta will require cesarean hysterectomy [15]. Total or subtotal hysterectomy is the management choice in most cases. Since our patient was hemodynamically unstable and had two children, conservative management was not considered.

Conclusion

Placenta percreta is a serious complication of pregnancy and should be kept in mind in the differential diagnosis of acute intra-abdominal hemorrhage due to spontaneous uterine rupture, especially in the second trimester. Prompt surgical intervention is necessary. Hemodynamically stable patients who desire uterine preservation may benefit from conservative management options. Total or subtotal hysterectomy should be performed in other patients.

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