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Placenta percreta leading to uterine rupture at 18 weeks of pregnancy with consecutive hysterectomy: a case report

Wycięcie macicy w 18 tygodniu ciąży z powodu łożyska przerośniętego – opis przypadku

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Abstract

A 26-year-old woman in the fourth pregnancy with a history of two Cesarean sections and one dilation and curettage was admitted to the hospital at 18 weeks of gestation with acute abdominal pain. Life-saving laparotomy revealed uterine rupture and placental invasion into the uterine wall. Supracervical hysterectomy was performed.

This case shows that pathological placentation due to previous cesarean sections may be the cause of uterine rupture.

Key words: **uterine rupture** / **placenta percreta** / **hysterectomy** / **cesarean section** /

Streszczenie:

Ciężarna w 18 tygodniu czwartej ciąży, stan po dwóch cięciach cesarskich przyjęta do szpitala z powodu objawów „ostrego brzucha". W trakcie laparotomii stwierdzono pęknięcie macicy oraz inwazje łożyska przez ścianę macicy. Wykonano nadszyjkowe wycięcie macicy z powodu zagrożenia życia pacjentki.

Opisywany przypadek przedstawia nieprawidłowe zagnieżdżenie łożyska w bliźnie po cięciach cesarskich z następowym pęknięciem ściany macicy.

Słowa kluczowe: **pęknieciе macicy** / **łożysko przerośnięte** / **wycięcie macicy** / / **cięcie cesarskie** /

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Introduction

The number of Cesarean sections has been steadily increasing. Previous cesarean section may lead to complications in placentation of the future pregnancies, such as placenta increta, accreta, percreta or a uterine rupture. Abnormal placentation is mainly diagnosed with an ultrasound examination. In case of serious complications, gravid hysterectomy (GH) and emergency peripartum hysterectomy (EPH) are the most common life-saving procedures. Uterine rupture due to placenta percreta is not common. The incidence is estimated at 1 in 5000 pregnancies [1-5].

We report a case of a spontaneous uterine rupture at 18 weeks of gestation because of placenta percreta in a patient with a history of two cesarean sections and one dilation and curettage due to spontaneous miscarriage.

Case report

A 26-year-old woman (gravida 4, para 3) at 18 weeks of pregnancy was admitted to the hospital with acute abdominal pain that appeared after sexual intercourse. Up to that moment the pregnancy was uncomplicated. The patient had a history of two cesarean sections and dilation and curettage because of a spontaneous abortion. The first cesarean section was performed seven years previously at 24 weeks of twin pregnancy due to spontaneous preterm labor. The newborns did not survive. Three years prior to admission the patient underwent the second cesarean section at 39 weeks of gestation and delivered a healthy girl. The pregnancy, cesarean section and postoperative course were uncomplicated.

Upon admission there were no uterine contractions. Abdominal tenderness was detected on physical examination. Blood pressure was 103/64 mmHg, the pulse rate 68 bpm, the temperature was 36.6°C. The laboratory tests showed a hemoglobin level of 11.7g%, white blood cells level of $18.93x10^3$ cells/μL, C Reactive Protein level of 13.07 mg/dl. Analgesic treatment and diagnostic procedures were initiated. Despite the treatment, the condition of the patient was deteriorating. Ultrasound examination showed an intrauterine, viable pregnancy (fetal heart rate 144 bpm) and estimated the gestational age at 18 weeks. The placenta was located in the lower segment of the anterior wall of the uterus. Below the bladder an 8-mm wide, full-thickness disruption of the anterior uterine wall was observed (Figure 1). Free fluid inside the abdominal cavity was also found.

The patient was qualified for laparotomy due to suspected uterine rupture. During the surgery about 1 liter of blood was found in the abdominal cavity. The inspection of the abdominal cavity showed a 2-cm^2anterior uterine wall rupture in the cesarean scar. Placental tissues protruded through the uterine wall and penetrated to the bladder. After evacuating the fetus, supracervical hysterectomy was performed. Finally, the infiltrated bladder wall was repaired. During the laparotomy, 5 units of Red Blood Cell Concentrates and 4 units of Fresh-Frozen Plasma were substituted. The total blood loss was estimated at 3000 ml. After the surgery the patient was in a stable condition. The postoperative course was uneventful.

After one month the patient returned to the hospital because of a vesicovaginal fistula. The patient was transferred to the Urology Department for further treatment.

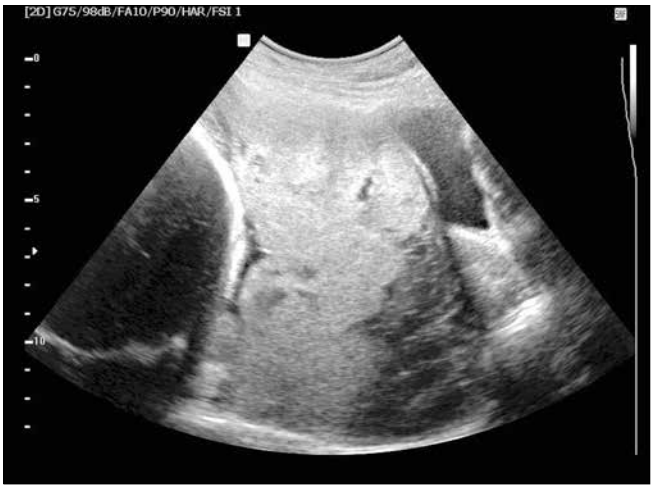

Figure 1. An ultrasound scan performed at 32 weeks gestation, using abdominal probe in B-mode. Xducer placed in the suprapubic area (scar after cesarean section), in the midline, resulting sagittal section. Centrally visible placenta „infiltrating cesarean section scar and the downward rear wall of the bladder.

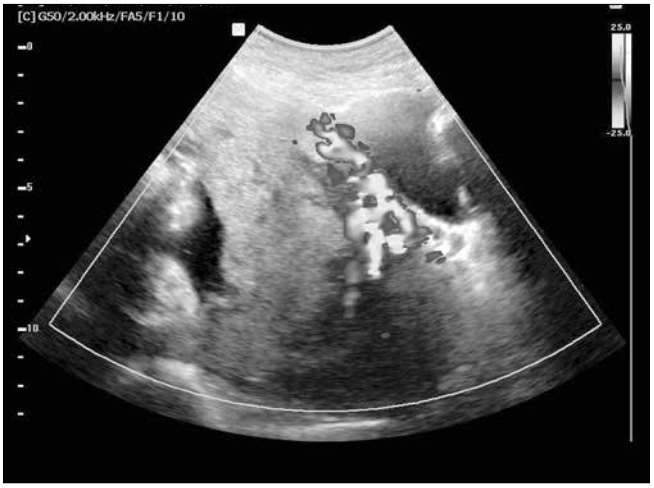

Figure 2. An ultrasound scan performed at 32 weeks gestation, using abdominal probe in ColorDoppler-mode. The apparent large vascular points in the „invasion" placenta cesarean section scar and the rear wall of the bladder.

In the histopathological examination placental tissues were found in the myometrium and confirmed the postoperative diagnosis of placenta percreta. The umbilical cord and amnion were normal.

Discussion

Abnormal placentation after previous cesarean section may lead to uterine rupture. In placenta percreta the villi invade into the myometrium up to the serosa, there is no decidua basalis. It might implicate a high mortality for both the mother and the fetus [3, 4, 6].

In our case, the histopathological examination revealed that placenta was present in the myometrium. Available data shows that uterine rupture is observed in the second or in the third trimester of pregnancy more often than in the first.

The consequences of the uterine rupture in the first trimester of pregnancy are dramatic due to hemorrhage. There is plenty of data concerning maternal or neonatal outcomes after a previous cesarean section, with uterine rupture being one of the most serious obstetrical complications causing high maternal and fetal mortality and morbidity. Spontaneous uterine rupture is a rare complication.

Risk factors for pathological placentation are well-known and include: cesarean sections, abnormal placentation, surgery involving the myometrium, external trauma, congenital uterine abnormalities, difficult labor, augmentation of labor and dilation and curettage. In our case the risk factors were two cesarean sections and one dilation and curettage in history. These procedures might have weakened the myometrium initiating the uterine rupture. The placenta implanted in the cesarean scar and predisposed the scar to separate. Our case is similar to the one described by Tan et al. [3-5, 7, 8].

Vaknin et al., suggested that both cesarean section and abnormal placentation may lead to more cases of uterine rupture compared to women with one risk factor. Moreover, cases described in the literature suggest that too short interpregnancy intervals may enhance the risk of uterine rupture. In our case the intervals between cesarean sections and the fourth pregnancy were 3-4 years and might have been insufficient for the cesarean scar to heal. In addition, the patient had dilation and curettage after a spontaneous abortion. Both, previous cesarean section and short interpregnancy intervals have been reported to greatly increase the risk of uterine rupture. Clark et al., first described the relation between previous cesarean section and abnormal placentation. Moreover, abnormal placentation is more often observed in women with short time intervals between cesarean section and pregnancy. Cases where abnormal placentation was observed in the first pregnancy were also reported [1, 2, 9-14].

The presence of placenta percreta greatly increases the vascularization in the cesarean scar. This can lead to severe bleeding, and is a life-threatening pathology. For that reason the most successful, life-saving treatment is total hysterectomy. In our case, due to insufficient hemostasis and severe bleeding during surgery, only supracervical hysterectomy was performed [2, 5].

Even though many diagnostic modalities are available, misdiagnosis of uterine rupture or abnormal placentation is quite common. Abnormal vascularization can be visualized with the ultrasound examination or Doppler ultrasound examination. Moreover, MRI can be used in patients with a risk of abnormal placentation as a supplementary diagnostic procedure [10, 15, 16].

The symptoms of uterine rupture vary and can mimic many surgical disorders. Patients may be asymptomatic or have acute abdominal pain, shock symptoms or hemoperitoneum. Other conditions that may present similar symptoms are: placental abruption, subhepatic hematoma with or without liver rupture, splenic rupture, rupture of the broad ligament or the uterine vein [3, 10].

Some cases of the uterine rupture after sexual intercourse were reported. In all these cases, similarly to our case, risk factors such as short interpregnancy intervals or pathological placentation were present. Even though there were no uterine contractions in our patient, intercourse may have played a role in the uterine rupture due to dehiscence of the poorly healed uterine scar [8, 17, 18].

In conclusion, since the number of cesarean sections and incidence of placenta percreta is increasing, it is important to observe the placenta in the ultrasound examination and describe its relation to the cesarean scar. In case of suspicion of abnormal placentation, patients should be referred to tertiary care centers. Placenta percreta is an extremely serious, life-threatening complication. Our case shows that quick qualification for laparotomy may save maternal lives.

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