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Uterine rupture during pregnancy caused by trauma sustained in a traffic accident – a case report

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SUMMARY

The paper presents a case of uterine rupture at 24 weeks gestational age that occurred in a traffic accident. A pregnant women was brought by the emergency medical team to E. Biernacki Specialist Gynecologic and Obstetric Hospital in Wałbrzych, Poland, after a traffic accident.

Key words: uterine rupture, trauma during pregnancy, traffic accident during pregnancy

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INTRODUCTION

Uterine rupture is a rare obstetric complication with incidence estimated at 0.006–0.0125% or 1/8,000–1/15,000 pregnancies [1,2].

By definition, it means loss of continuity that can encompass all layers, starting from the endometrium, through myometrium, to perimetrium. Complete or total uterine rupture encompasses all the uterine layers, whereas incomplete or partial uterine rupture occurs when the continuity of the visceral peritoneum is preserved. Also, one can encounter so-called superficial ruptures. Depending on whether they involve a slit-like rupture of the endometrium or peritoneum, they are referred to as superficial internal or external ruptures, respectively [1–5].

Clinically, uterine rupture can be divided into typical that occurs during labor in the inferior part of the uterus and is preceded by obvious manifestation of symptoms, and atypical that occurs without typical symptoms of threatening uterine rupture and is located in the body of the uterus.

The most important predisposing factor is the presence of scars after previous obstetric and gynecologic procedures. Next to scars after conservative myomectomy or uterine perforation, the most common scars are those after a cesarean section, particularly in the situation of a snowballing increase in the number of operative deliveries. Other risk factors are also: developmental uterine defects, cephalopelvic disproportion, abnormal fetal lie and presentation, status post pelvic inflammation and injuries sustained during obstetric procedures [1].

Little is known about preventive measures, but circumstances in which the risk of rupture is considered lower include: previous vaginal delivery or long period of time between consecutive pregnancies in the case of a cesarean delivery [2].

As far as obstetric uterine rupture (0.01–0.05%) [2] or rupture with accompanying risk

factors (although rare) should provoke some afterthoughts of an obstetrician, who ought to be aware of such a risk, the occurrence of this complication in a pregnant patient with no risk factors is extremely rare and requires more attention.

CASE PRESENTATION

A 20-year-old patient at 24 weeks of her first pregnancy was brought by the emergency medical team to the admission room of E. Biernacki Specialist Gynecological and Obstetric Hospital in Wałbrzych after a traffic accident. The patient was a passenger of a car that hit an obstacle head-on. The interview revealed that the patient had her seat belts fastened (both the shoulder and lap belt). At admission, the patient's overall state was assessed as good. The patient was fully conscious, well-oriented; the contact was slightly difficult due to alcohol consumption. She complained about abdominal pain, but did not report any other symptoms.

The previous course of pregnancy was normal. The patient reported no previous surgeries or injuries within the abdominal cavity. The examination at admission revealed: blood pressure of 130/110 mmHg, regular heart rate of 80/minute and normal body temperature.

Skin abrasions were present in the region of the wings of the ilium (bilaterally) and the right clavicle. The patient complained about pain in the low abdomen. She exhibited voluntary guarding on palpation of abdominal cavity. The low abdomen was very painful on palpation. Fetal heart rate was absent.

Ultrasonography showed a considerable amount of free fluid in the abdominal cavity, the uterine body with irregular outline, complete placental abruption from the uterine wall and the fetus located partially beyond the uterus. Absent fetal heart rate was confirmed.

Emergency blood tests were conducted: complete blood count, blood type, coagulation profile and CRP (due to the suspicion of placental abruption). With the risk of uterine rupture in mind, the patient was transferred to the operating room for an urgent exploratory laparotomy.

After the abdominal cavity was opened using the Joel-Cohen method, approximately 600 mL of blood was found. The uterus was ruptured along the entire thickness and width of the fundus. The placenta was separated from the uterine wall on its entire surface, and the fetus, with no signs of life, was found in the abdominal cavity between intestinal loops. The fetus and placenta were extracted. The uterine body was controlled instrumentally. After managing the edges of the rupture, the uterus was closed with a running double-layer suture. Macroscopically and on palpation, the spleen, stomach, liver and the pancreas were normal. Hemostasis was controlled and slight injury to the intestinal mesentery was found and managed with single sutures. Abdominal drains were inserted. After a final control, the abdominal wall was reconstructed, the parietal peritoneum was sutured and epifascial Redon drains were inserted. The urine in the Foley catheter was clear. The patient required transfusion of 3 units of packed red blood cells and 3 units of fresh frozen plasma. Intensive surveillance was performed, and intravenous antibiotic and analgesic therapies were continued. Bromocriptine was started. Due to the entire situation and the patient's mental state, she was consulted by a psychologist postoperatively for professional assistance.

The postoperative period was uneventful. The patient was discharged on day 5 with orders, including consultation in a gynecological clinic. Three years after the accident, the patient got pregnant naturally and was taken care of by the Clinic of Pregnancy Pathology of E. Biernacki Hospital in Wałbrzych. Check-ups were conducted as scheduled with repeated ultrasonography of the surgical scar.

At 38 weeks gestation, the patient was admitted to the Department of Pregnancy Pathology of E. Biernacki Hospital in Wałbrzych. The pregnancy was concluded by elective cesarean section when contractions began. The patient delivered a live, full-term boy. The postoperative scar was controlled manually: complete adhesion with no signs of dehiscence. The puerperium was normal. The patient was discharged on day 4 after cesarean section with orders to return for a check-up 6 weeks later.

DISCUSSION

The ongoing discussion about fastening seat belts by pregnant women is concluded in a recommendation to use seat belts, optimally with a lap belt adjustment. The correct usage of seat belts halves the risk of vaginal bleeding, miscarriage and preterm birth after traffic accidents [6].

It is estimated that approximately 6–7% of pregnant patients sustain an injury, while injuries sustained in an engine vehicle account for

approximately 50% of these cases [7,8]. One should bear in mind the possibility of uterine rupture as a pathology to be ruled out. Rapid management may save the life of both the fetus and the pregnant patient. Therefore, developing management algorithms for pregnant patients after traffic accidents still remains a valid issue.

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