

Caso Clínico / Radiological Case Report

SONOGRAPHIC DIAGNOSIS OF UTERINE RUPTURE

DIAGNÓSTICO ECOGRÁFICO DE ROTURA UTERINA

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Resumo

Apresentamos um caso clínico de uma mulher, 36 anos, com antecedente cirúrgico de cesariana anterior, que teve rotura uterina durante o parto, induzido às 22 semanas de gestação, devido a uma malformação fetal. O diagnóstico foi devido a hemorragia vaginal grave imediatamente após a expulsão do feto e placenta. A rotura uterina foi confirmada por imagem ecográfica transabdominal. O diagnóstico precoce levou a uma rápida intervenção cirúrgica e resolução desta emergência Obstétrica.

Palavras-chave

Cesariana prévia, gravidez, imagem ecográfica, rotura uterina.

Abstract

We present a case of a 36-year-old woman, with previous history of caesarean section who had uterine rupture during labour, induced at 22 weeks gestation, due to fetal malformation. The diagnosis was made because of severe vaginal bleeding after delivery of the fetus and placenta. The uterine rupture was verified by ultrasound imaging. Early diagnosis led immediately to surgical intervention and resolution of this frightening obstetric complication.

Key-words

Pregnancy, previous caesarean, ultrasound imaging, uterine rupture.

Introduction

The medical termination of pregnancy between the 13th and 28th weeks of gestation, account for 10-15% of all abortions performed in the world.(8, 10)

The gold standard for medical termination of pregnancy in the 2nd trimester is the administration of mifepristone, followed by misoprostol.(7) Some studies state that the combination of mifepristone and misoprostol appeared to have the highest efficacy and shortest abortion time interval.(2, 4)

Complications of medical termination of pregnancy increase with gestational age.(5) Possible complications include: failure of procedure, incomplete abortion, uterine rupture, haemorrhage, infection, complications related to analgesia. Uterine rupture is one of the most serious obstetric complications, due to high maternal and fetal morbidity and mortality.

There are a variety of definitions for uterine rupture, but the most mentioned is that of Plauche *et al.*(8) “those cases of complete separation of the wall of the pregnant uterus with or without expulsion of the fetus.”

The incidence of uterine rupture ranges from 0.0075% to 1% by several publications.(3, 7) It is more common in the presence of a previous uterine scar, with an incidence of 0.5% to 0.8% when attempting a vaginal birth in women with prior history of caesarean section.(4)

There are several risk factors for uterine rupture during pregnancy, such as: history of uterine surgery (previous caesarean section, especially those with vertical incision or

myomectomy), prostaglandins or oxytocin administration during labour, multiparity, fetal macrosomia or fetal-pelvic disproportion, uterine malformations. Of all risk factors, previous caesarean uterine scar is the most frightening – in one review, 52% of women who had uterine rupture, had a previous caesarean section.(2)

The most common symptom is abdominal pain that may be masked particularly by epidural analgesia. Other signs or symptoms of uterine rupture are: hypovolemic shock due to bleeding (can cause maternal tachycardia, tachypnea, pallor, anxiety, hypotension), chest pain with deep inspiration (because of peritoneal irritation by blood), signs of fetal distress during monitoring (tachycardia or bradycardia, decelerations, reduced variability or decreased fetal movements), vaginal bleeding, uterine tachysystole or cessation of uterine contractions.

At present, ultrasound imaging has been gaining greater importance during labour for many reasons and therefore, many institutions are beginning to have ultrasound machines available in delivery rooms. We believe this is the first time that an ultrasound image of uterine rupture at 22 weeks is published.

Case Report

Healthy woman, 36 years old, gravida 2 para 1 (term birth by caesarean section 6 years ago) without other surgical history. On the anomaly scan at 20 weeks gestation it was diagnosed severe heart malformation - hypoplastic left heart syndrome - confirmed by fetal echocardiography associated with fetal growth restriction.

Termination of pregnancy was decided after parents request and approval by the ethical committee.

The pregnant woman was admitted at 22 weeks of gestation for labour induction. The protocol in our Hospital for termination of pregnancy at this gestational age consists in: 200mg mifepristone orally, 36-48 hours prior to hospital admission; on the first day of hospitalization we initiate 200 micrograms of misoprostol vaginally (or half the dose in cases of uterine scar including caesarean section), 6 in 6 hours, up to five doses.

In our case, the pregnant woman started to complaint of mild abdominal pain after the second dose of misoprostol. At this stage the cervix was 2cm dilated, 30% effaced, soft and posterior. The patient was medicated with analgesics: acetaminophen and pethidine, which improved but not totally resolved the abdominal pain. So we proceeded to epidural analgesia (1 hour after the 3rd dose of misoprostol). Ten minutes after epidural analgesia, the pregnant woman was asymptomatic; the cervix was 3cm dilated, 70% effaced, soft, in an intermediate position.

Just before the 4th misoprostol dose, the pregnant woman was in expulsive period, without any pain or important vaginal bleeding. The fetus was born, without vitality, in breech position, followed by spontaneous placental expulsion 5 minutes later. Immediately after placental expulsion that seemed to be complete, there was severe vaginal bleeding. The birth canal was intact with no lacerations. At the same time, as the bleeding was unstoppable, we have asked for anaesthesia help and brought an ultrasound machine (Logiq S6) into the labour room. Manual uterine review associated with ultrasound imaging immediately created the suspicion of uterine rupture in the anterior lower segment of the uterus (location of previous caesarean), see figure 1. No free liquid was observed in the abdominal cavity. We promptly decided to perform an emergency laparotomy.

When we entered the abdominal cavity, we did not visualize blood because the visceral peritoneum was still intact. After we opened the visceral peritoneum, uterine rupture could be confirmed. We proceeded to uterine suture (transverse double layer), with verification of haemostasis. The haemoglobin in the previous day was 10.6g/dL. Six hours after surgery the haemoglobin has dropped to 8.1g/dL. The woman was

hemodynamically stable at all time. There was no need for aggressive action such as hysterectomy or blood transfusion due to quick diagnosis and prompt surgical treatment (from the vaginal delivery to beginning of laparotomy passed no more than 10 minutes).

Discussion

Uterine rupture is an obstetric emergency with poor prognosis for either the mother or the fetus. In most cases, the diagnosis is very difficult to make, because a great variety of reasons, particularly: abdominal pain is natural present in normal labour development and can be misleading or, on the other hand, the patient can stay asymptomatic due to epidural analgesia.

In our case, as it was a medical termination of pregnancy at 22 weeks gestation, we have not used cardiocography surveillance. The epidural analgesia may have masked the abdominal pain associated with uterine rupture. Fortunately, as the visceral peritoneum stayed intact, rather than bleeding into the abdominal cavity, appeared the signal of severe vaginal haemorrhage. Since the birth canal had no lacerations, placenta expulsion seemed to be complete and as the patient had previous caesarean section, we suspected of uterine rupture, which was confirmed by ultrasound imaging.

Given the suspicion of uterine rupture, we should look for sonographic signs, such as: free fluid in the abdominal cavity – ascites / blood (that was not present in our case due to the remaining integrity of the visceral peritoneum); loss of uterine wall continuity or image compatible with haematoma occupying the entire thickness of the myometrium, especially in previous uterine scars areas.

We must always have in mind and be aware of the risk of uterine rupture, regardless gestational age, in pregnant women with risk factors, especially those with history of previous caesarean section.

Accessibility to ultrasound scan in delivery room can be essential and help in early uterine rupture diagnosis and, therefore, for its immediately surgical treatment, that may be maternal and/or fetal life-saving or even prevent aggressive actions such as blood transfusion or hysterectomy. Ideally, all delivery rooms should have an ultrasound machine available.



Fig. 1 - (A) Sonographic diagnosis of uterine rupture. (B) legend of (A).

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