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Second trimester uterine rupture in a septated unscarred uterus: a case report study

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Summary

Introduction: Uterine rupture in the second trimester before the onset of labor is a rare condition that can lead to high maternal morbidity and fatal fetal outcome. *Case Report:* The authors report a case of spontaneous uterine rupture in a 35-year-old woman at the 16th week of a twin gestation, after IVF. She presented with intraperitoneal haemorrhage, maternal collapse, fetal demise, and required immediate surgical management. *Conclusions:* Uterine rupture in a primigravid uterus is a rare but life-threatening situation. Studies have shown that the unscarred uterus is not immune to such an event. Even though it is not a common complication, it should always be considered in primigravid women presenting with abdominal pain, hemodynamic instability, and indications of fetal demise.

Key words: Uterine rupture; Uterine septum; Second trimester; Case report; Unscarred uterus.

Introduction

Uterine rupture before the onset of labor in an unscarred uterus is extremely rare. It is defined as dehiscence of the wall of the pregnant uterus, with or without expulsion of the fetus [1]. Its estimated incidence is one in 8000-15,000 deliveries [2, 3]. It is said that the primigravid uterus is virtually "immune to rupture" [4]. There have been very few cases documented in the literature, most of them in the second trimester of gestation[5].

The authors present a case of spontaneous uterine rupture in a nulliparous primigravid woman with a uterine septum, during the second trimester of pregnancy.

Case Report

A 35-year-old woman presented to the emergency department of the authors' hospital, which is a tertiary referral centre for obstetrics with a four-hour history of acute onset abdominal pain. At presentation she appeared unwell, pale, and had a heart rate of 140 bpm and a blood pressure of 70/40 mmHg. She was in the 18th week of a dichorionic diamniotic twin pregnancy, following IVF. The patient had a history of right salpingectomy one year before, due to a right tubal ectopic pregnancy and with no history of uterine surgery. She was diagnosed during assisted reproduction consultation with a uterine septum (Figure 1). This diagnosis had been missed during hysterosalpingography (HSG) (Figure 2). It was speculated that during HSG, cannulation, and the contrast medium was introduced only within one cavity, pushing the uterine septum towards the uterine wall and obliterating one cavity, thus concealing it. The pregnancy had been reported normal during a recent obstetric visit. Upon examination, marked abdominal distension was detected, with tenderness to superficial palpation periumbilically. Uterine fundus was at the level of the umbilicus. A speculum examination revealed a closed long cervix with no evidence of liquor or blood in the vagina. Emergency ultrasound assessment confirmed the presence of a dead twin with intact membranes, while the second twin was extrauterine, in the right upper quadrant of the abdomen, below the liver. Full blood count showed an hematocrit of 20%. The patient was immediately taken to the operating room for an exploratory laparotomy. A midline abdominal incision was performed under general anesthesia, which revealed a hemoperitoneum of at least 2,000 ml. One twin was recognized within the abdominal cavity. The right uterine horn was ruptured and a fibrous septum was visible, covering the second amniotic sac and bulging through the uterine cavity. The second twin was delivered through excision of the septum. The uterus was sutured in two layers and further hemostatic sutures were positioned. The patient received four units of blood and fresh frozen plasma and was transferred to the special care unit for postoperative observation. She had an uneventful recovery.

Discussion

The present study represents a rare case of a uterine rupture in a primigravida, with an apparent unscarred uterus in the second trimester of pregnancy. Uterine rupture causes a massive antepartum hemorrhage that can lead to maternal and fetal death. As such, it needs to be readily recognizable in any woman presenting with obstetric collapse. However, traditional teaching is that uterine rupture predominantly occurs during labor in a women with a previous caesarian section.

Spontaneous uterine rupture prior to term labour, in a primigravid is an extremely rare event. Following a literature search, the present authors identified a case of rupture in a woman with a twin pregnancy that had gone into preterm labor [6]. In two further cases, uterine contractions were triggered by gastroenteritis, caused by clostridial or bacteroidal infections [7].

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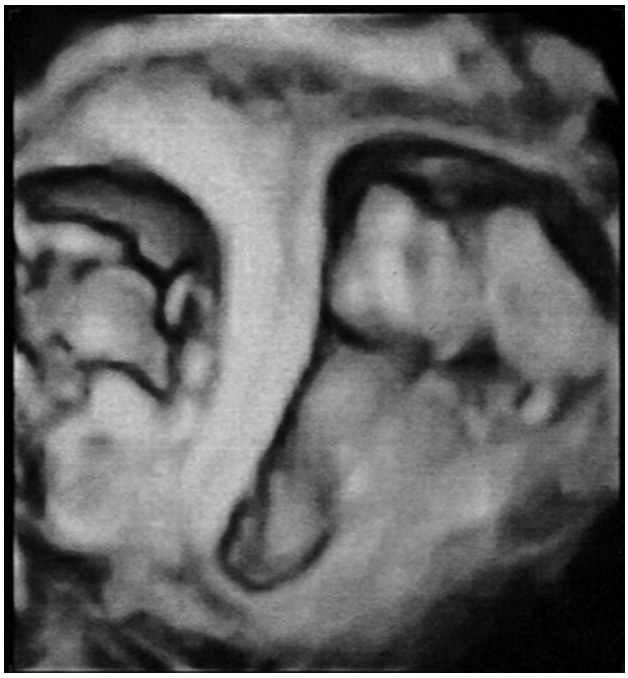

Figure 1. — 3-D ultrasonography scan demonstrating a uterine septum.

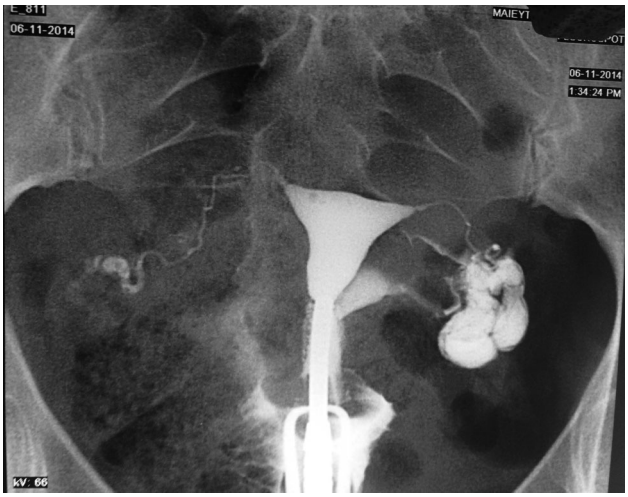

Figure 2. — Hysterosalpingography image of a missing right tube. No septum is identified.

The current case presented with a pain of abrupt onset, with no prior cramps or contractions. The present authors speculate however, that the uterus was weaker at the level of the right uterine horn, due to thermal damage that occurred during the recent laparoscopic salpingectomy. This weakness at the level of the right horn was then pushed to its limits by the growing right twin, particularly, as the right uterine cavity appeared to be slightly smaller as a result of the uterine septum.

Spontaneous uterine rupture after laparoscopic salpingectomy due to ectopic pregnancy has been reported in the past. Studies referred to patients who had previously undergone laparoscopic removal of the right fallopian tube and interstitial portion for treatment of an interstitial pregnancy and presented with uterine rupture during the second trimester of gestation [8, 9]. It has been stated that laparoscopic salpingectomy more often resulted in rupture of the uterus during non-ectopic pregnancy as compared to laparotomy [10].

Congenital anomalies have not been clearly associated to uterine rupture, although they can predispose to infertility, miscarriage, preterm delivery, malpresentation, and abnormal placentation [11-15]. The present authors did identify however a case of rupture in an unscarred uterus, occurring during the first trimester of pregnancy, in a woman who had been exposed to diethylstilbestrol in utero [16].

Prior to a future pregnancy, the present patient will need to undergo a hysteroscopic assessment of the uterine cavity to confirm the complete removal of the septum. When pregnant, the patient will need close monitoring, with regular ultrasonographic follow ups within a tertiary unit setting. The present authors would also recommend transfer of only one embryo, were she to undergo assisted reproduction. Although difficult to define, she certainly is at an increased risk of a recurring rupture during pregnancy. The risk is likely to be higher than the reported, one in 200, applying to a woman with one previous lower segment cesarean section and uterine rupture may well occur prior to the onset of uterine contractions during labor.

Conclusions

Uterine rupture in a primigravid uterus is a rare but life-threatening situation. Studies have shown that the unscarred uterus is not immune to such an event. Even though it is not a common complication, it should always be considered in primigravid women presenting with abdominal pain and indications of fetal demise. A thorough history should be obtained and an immediate ultrasound scan should provide with the diagnosis. Time is of much importance in these cases, since fatal maternal outcomes have been correlated with delayed diagnosis and intervention, due to lack of suspicion.

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