CASE REPORT

Primary repair of cornual rupture occurring at 21 weeks gestation and successful pregnancy outcome

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The successful delivery in a 31 year old woman at 33 weeks gestation is reported, after repair to a cornual rupture which occurred at 21 weeks gestation. The patient exhibited acute abdominal pain and pending shock. Emergency laparotomy showed a cornual rupture and an intrauterine vital fetus having intact amnion membrane. On the patient’s family’s insistence, primary repair for a cornual rupture was performed and preservation of the fetus attempted. Postoperatively, tocolytic agent with ritodrine hydrochloride was administered and close follow-up of the patient was uneventful. The patient had a smooth obstetric course until 33 weeks gestation when premature rupture of the membranes occurred, soon followed by the onset of labour. She underwent an elective Caesarean section and delivered a normal male fetus weighing 2140 g with Apgar scores at 1, 5 and 10 min of 6, 8, and 9 respectively. Because of this successful outcome, we suggest that primary repair for such an unusual patient should be accepted.

Key words: cornual rupture/pregnant/primary repair

Introduction

Spontaneous uterine rupture early in the course of pregnancy is a rare complication, which usually occurs in a scarred uterus. Such a scarred uterus is often secondary to salpingectomy with cornual resection, deep cornual resection, myomectomy, Caesarean section, iatrogenic uterine perforation, or less commonly to placenta increta, congenital anomalies, trauma and sacculation of entrapped retroverted uterus (Arbab et al., 1996). However, it is extremely rare in a primigravida who has no obvious history of uterine operation or curettage (Bretones et al., 1997; Elsayegh and Nwosu, 1998; Imseis et al., 1998). Here, we report a case of cornual rupture in a pregnant woman at 21 weeks gestation, which was repaired directly and ended with a successful delivery at 33 weeks gestation by elective Caesarean section. As far as we know, no such case has ever been reported.

Case report

A 31 year old woman, gravida 1, parity 0, suffered from acute abdomen in the emergency room. Patient history was unremarkable and with no record of any previous obstetric or gynaecological surgery. The pregnancy was at 21 weeks gestation and was spontaneous. The patient had attended prenatal clinics regularly, twice before this presentation, without any abnormal findings. Body temperature was 39°C, blood pressure 60/undetectable mm Hg, pulse 128 beats/min and respiratory rate 34 breaths/min. Physical examination showed diffuse tenderness over the abdomen with significantly rebounding pain and muscle guarding. The complete blood count showed haemoglobin of 4.6 g%. There was mild leukocytosis (13 400/µl) with marked haemo-concentration. The diagnosis of internal bleeding associated with haemorrhagic shock was strongly suspected clinically. Ultrasound showed an intrauterine pregnancy and fetal tachycardia ranging between 180 and 200 beats/min.

The patient underwent emergency laparotomy. Operative findings revealed a large haemoperitoneum (3000 ml of blood in the peritoneal cavity) and a 0.5 cm ruptured cornual area of the left anterior uterine wall with exposure of underlying intact amnion membrane (Figure 1). No significant deformity of the uterus except the above-mentioned wound was noted. Bilateral tubes and ovaries appeared healthy and normally attached to the uterus. At the same time, operative ultrasound demonstrated a viable fetus. At the insistence of the patient’s family, preservation of the fetus was attempted, so we did not biopsy the rupture site to avoid further injury to the uterus. The ruptured cornual site was repaired directly, with two layers by 1–0 polyiglecaprone (Monocryl®) and one layer by 3–0 polyglactin 910 (Vicryl®). After an appropriate replacement of blood loss, the betamimetic drug, ritodrine hydrochloride, was administered for prophylactic prevention of uterine contraction. The initial dosage began from the minimal dose 0.05 mg/min and increased at fixed intervals of 15 min to the maximal dose 0.5 mg/min. The drainage was positioned and the patient received postoperative intensive care.

Postoperative recovery was uneventful. The ultrasound follow-up showed normal fetal growth and normal amniotic fluid index. Ultrasound also failed to show any abnormality of the uterus such as a bi-cornuate appearance. The patient was discharged on the 28th postoperative day. She received an intensive prenatal follow-up that was uneventful until 33 weeks gestation, when she suffered from premature rupture of the amniotic membrane. This was soon complicated by the onset...
of labour due to regular uterine contraction after applying a tocomonitor. Ultrasound assessment showed satisfactory fetal growth (estimated body weight 2140 g) with normal posterior fundal lying placenta. The patient was haemodynamically stable and the cardiotocographic tracing of the fetal heart rate was normal. She received an urgent Caesarean section and delivered a normal male fetus weighing 2140 g with Apgar scores at 1, 5 and 10 min of 6, 8, and 9 respectively. During the operation, the uterus did not show any deformity and the above-mentioned wound on the left cornu had healed well.

Discussion

Spontaneous uterine rupture in the first or second trimester of pregnancy is a very rare complication, especially occurring in a primigravida without any previous gynaecological operations. Previous gynaecological operations are associated with a scarred uterus and have a high risk for uterine rupture in pregnancy; its occurrence is often intrapartum. However, the potential risk of uterine rupture during pregnancy is often overlooked in patients who had no previous obstetric and gynaecologic history for uterine manipulation. Although uterine rupture has been reported in an unscarred gravid uterus at 32 weeks gestation (Langton et al., 1997), there is no report of direct repair to a ruptured uterus followed by successful pregnancy, as in this case. A handful of cases of spontaneous uterine rupture are reported in the literature, but invariably with extraction of the fetus (Bretones et al., 1997; Elsayegh and Nwosu, 1998; Imseis et al., 1997). Our patient denied any history of previous obstetric or gynaecological surgery, and denied a history of intrauterine device insertion. Thus, this is the first documented case of spontaneous rupture of a primigravida uterus occurring at 21 weeks’ gestation, which underwent a direct repair and was followed by a continuing pregnancy until 33 weeks gestation, and which finally delivered a normal fetus successfully via Caesarean section.

Although we performed a direct repair at the insistence of the patient’s family, in addition we ensured that a surgical intervention was well-prepared, especially after initial resuscitation. Other factors contributing to the successful outcome of this case included normal development of the fetus, proper location of the placenta, classical three-layer repair technique, tocolytic prophylactics, postoperative intensive care and, most importantly, excellent compliance, very close follow-up and prompt medical care for the ongoing pregnancy if required. In addition, an important factor was a grossly normal uterus found during emergent exploratory laparotomy. Furthermore, the patient was devoid of any associated risk factors which might have contributed to spontaneous uterine rupture, including multiparity, uterine anomaly, uterine diverticulae, placenta praevia, arteriovenous malformation, endometriosis, precipitous labour or obstructed labour (M’Lellan, 1916; Nagy, 1989; Langton et al., 1997; Imseis et al., 1998).

In this patient, biopsy was not performed during the first repair operation because we wanted to avoid exacerbation of the established wound or possibly even causing rupture of the membrane after doing more manipulation; so we cannot definitely exclude any possibility of underlying pathological change. However, at the time we believed that the patient was a sporadic case and might have a normal uterus, as proved later on hysteroscopic examination and operative gross finding, which did not show any abnormality. At 33 weeks gestation, we performed an emergent Caesarean section to terminate the pregnancy because of the following reasons: scar other than that of Caesarean section, traumatic uterus, appropriate body weight evaluation (more than 2000 g in preoperative ultrasound), and membrane rupture. This operation did not show any abnormality of the uterus and pelvic organs. The patient is well prepared for future pregnancy and further hysteroscopic examination did not demonstrate any abnormality.

In conclusion, although termination would normally be recommended when uterine rupture occurring in 21 weeks gestation is faced, a different approach for management might now be accepted due to our successful experience. Such a patient can be managed individually, based on an adequate provision of medical care, the degree of severity, good compliance and the needs of the patient.

References


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