

Successful Pregnancy and Delivery after Uterine Rupture in Previous Pregnancy: A Case Report

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ABSTRACT

BACKGROUND AND OBJECTIVE: Uterine rupture in all layers is not only a serious complication of pregnancy but is also associated with maternal and fetal mortality. The usual treatment for uterine rupture is termination of pregnancy, and hysterectomy is necessary in most cases. Successful repair of uterine rupture in all layers is not only uncommon but successful subsequent pregnancy is quite rare. A successful pregnancy is reported in a woman with a history of complete uterine rupture due to intramural pregnancy.

CASE REPORT: A 28 – year – old pregnant woman, gravida 4, with a history of two abortions, and one delivery (stillbirth) was admitted to the high-risk pregnancy unit of Ayatollah Rouhani Hospital (Babol, Iran). She had a history of rupture of all layers of the uterus following intramural pregnancy in her third pregnancy, and at that time, she had undergone laparotomy and repair of the uterus. In the fourth pregnancy, due to the history of uterine rupture, she was under prenatal care in high-risk pregnancy unit, and after the onset of contractions at 36 weeks and 2 days, emergency cesarean section was performed for the patient, and the neonate was born with 10/10 APGAR score and a weight of 3000 grams.

CONCLUSION: In women who become pregnant after a history of rupture of all layers of the uterus and after the repair of uterine, prenatal and fetal care should be done carefully and cesarean section should be performed immediately after the onset of labor contractions.

KEYWORDS: *Uterine Rupture, Pregnancy, Pregnancy Outcome, Intramural Pregnancy.*

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Introduction

Complete uterine rupture is a rare complication of pregnancy (1), which involves rupture of all layers of the uterus and is associated with maternal and fetal morbidity and mortality (2–6). Uterine rupture may occur in various forms at any time during pregnancy. It may vary from asymptomatic patients to rupture in all layers of the uterus with severe bleeding and extrusion of the fetus into the abdominal cavity (7). Uterine rupture following attempted vaginal delivery after previous cesarean section has been reported at about 0.5 – 0.9% (8). The worldwide prevalence of uterine rupture is 0.07% (9).

The risk of uterine rupture is also increased with prior non-lower uterine segment scar (10). The usual treatment for uterine rupture is termination of pregnancy and most cases require hysterectomy (11). The chance of a successful pregnancy and the birth of a live baby is very low (12). Uterine rupture due to factors such as curettage, intramural pregnancy or spontaneous pregnancy is rare (4–6). Intramural pregnancy is a rare and uncommon form of ectopic pregnancy in which the pregnancy products are replaced in the myometrium instead of the uterine cavity and the embryo is covered by the myometrium and is outside the uterine cavity and fallopian tubes (13–16).

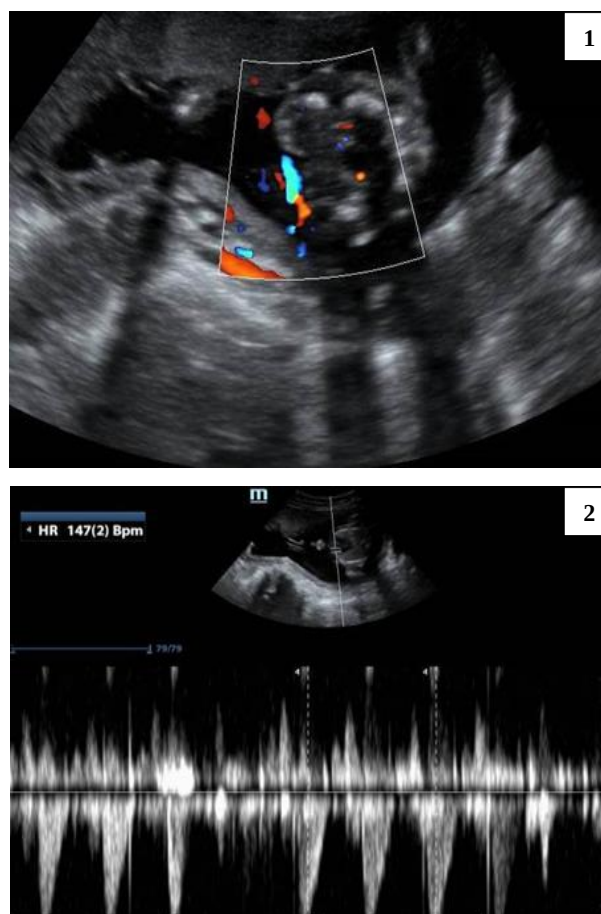
If the rupture of the uterus following intramural pregnancy is not timely diagnosed and untreated, it may lead to hysterectomy (2, 17). Therefore, not only is intramural pregnancy rare and uterine preservation followed by this pregnancy is rare, but pregnancy is less common after rupture of all layers of the uterus in a way that the uterus can be preserved to achieve successful pregnancy. In this study, a successful pregnancy and live birth of a baby following complete rupture of the uterine layers caused by previous intramural pregnancy is reported.

Case Report

The patient is a 28 – year – old pregnant woman, gravida 4, who was admitted to Ayatollah Rouhani Hospital in Babol. The patient had a history of abortion twice in the first and second pregnancies as well as a history of myomectomy surgery for two times. Thereafter, the patient's third pregnancy was complicated by intramural pregnancy at 26 weeks of gestation (Figs 1 and 2).

While the patient was in shock, she underwent laparotomy immediately. At that time, the findings during laparotomy of the dead fetus showed abundant

blood within the peritoneal cavity and rupture of all layers of the uterus in the fundus, anterior and posterior with involvement of the uterine blood vessels. Despite the extremely difficult conditions for uterine repair, it was decided to preserve the uterus and repair it due the absence of a child. After surgery, the patient was transferred to the intensive care unit (ICU), was discharged from the ICU after 10 days and was discharged from the hospital after a 5-day admission to the gynecological ward.



Figures 1 and 2. Intermolar pregnancy

The fourth pregnancy was 13 months after uterine rupture. The patient was hospitalized due to uncontrolled diabetes to control her blood glucose levels, and she was discharged with insulin therapy. The patient was monitored continuously at the high-risk pregnancy clinic.

The patient was hospitalized at 28 weeks of gestation due to uterine contractions, which was stopped using fluid therapy and pain analgesics. In addition, 2 doses of 12 mg betamethasone were administered at 24 h intervals. Fetal health tests such as nonstress test (NST) and ultrasound were performed three times a week and the patient was hospitalized until the end of pregnancy (Fig 3).



Figure 3. Current pregnancy

Discussion

In this case, we present a pregnant woman with a history of complete rupture of all layers and involvement of uterine artery following previous intramural pregnancy who has successfully completed the current pregnancy without complications in the mother and fetus. Some studies have reported pregnancy success following complete uterine rupture. These studies have shown that pregnancy after complete rupture of the uterus can also be successful without any severe maternal and fetal complications (18 – 20). Fox et al. reported 11 pregnancies in women with a history of complete rupture (20 cases) and incomplete rupture (30 cases) of uterus, among which a total of 6.7% experienced rupture again in the current pregnancy (20). Another study reported 10 successful births of 20 pregnancies with a previous history of complete uterine rupture (19).

Delecour et al. reported 11 pregnancies with a history of previous uterine rupture, all of which underwent cesarean section at 32 – 37 weeks. In this report, similar to our study, two patients had a history of complete rupture with uterine artery involvement, and uterine rupture occurred after 36 weeks of gestation

(18). However, our patient had a history of complete rupture of the uterus at 26 weeks of gestation following intramural pregnancy.

On the other hand, the pregnancy in all cases reported in the study of Delecour occurred 18 weeks after uterine rupture, while in our patient, it occurred 13 weeks after previous rupture. Another study of subsequent pregnancy following complete uterine rupture over 25 years showed that longitudinal uterine rupture and the interval between rupture and subsequent pregnancy are predictive factors for re-rupture. In this study, patients who experienced uterine re-rupture had an average of 24 – 60 weeks between pregnancies (21). This is the first reported case in Iran in which pregnancy occurred after a previous intramural pregnancy which resulted in complete rupture of all layers and uterine artery. Hysterectomy was not performed at that time, and the uterus was repaired and preserved, and eventually the patient was able to experience a successful, uncomplicated pregnancy, after careful and timely pregnancy and cesarean delivery. Successful pregnancy and childbirth are possible even after extensive uterine rupture.

Therefore, it seems best to maintain the uterus and increase the possibility of pregnancy. In subsequent pregnancies following uterine rupture, prenatal care should be carefully and cautiously performed for the mother and fetus, and cesarean section should be performed immediately after the onset of labor contractions.

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