ISSN: 2377-9004

Blouin and Girard. Obstet Gynecol Cases Rev 2024, 11:261
DOI: 10.23937/2377-9004/1410261
Volume 11 | Issue 2
Open Access

Obstetrics and Gynaecology Cases - Reviews

CASE REPORT

Rare Case of Uterine Rupture: 29-Week Interstitial Pregnancy

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Abstract

Interstitial pregnancy is an uncommon entity, rarely leading to a live pregnancy. The current literature describes only a few cases of interstitial pregnancy in the third trimester, for which only a few have positive outcomes. We describe here the management of a case of a 29-week interstitial pregnancy leading to uterine rupture, with favorable maternal and fetal outcomes.

Keywords

Ectopic pregnancy, Interstitial pregnancy, Uterine rupture, Hemoperitoneum in pregnancy, Case report

Introduction

Ectopic pregnancies account for around 1-2% of all pregnancies. Of these, 2-3% is interstitial. This type of pregnancy is defined by the implantation of the embryo in the proximal part of the tube in the myometrium [1]. Diagnosis is often difficult, and may be missed on first-trimester ultrasound. This type of pregnancy rarely leads to a viable pregnancy. Treatment is generally surgical, and mortality rate is around 2.5% [2]. In the current literature, a small number of such pregnancies have been described in the third trimester, but few have favorable maternal and neonatal outcomes [3]. We present here the management of an uterine rupture in a 29-week pregnancy, with positive outcomes for the patient and her fetus.

Case Description

The patient is a 39-year-old G3A2 woman of Caucasian origin. Her only antecedent was a one-time resection of trophoblastic debris by mechanical hysteroresection (Myosure® system). Her pregnancy was spontaneous and proceeding normally. She underwent 3 ultrasounds, dating at 10 weeks, nuchal translucency at 12 weeks and morphological screening at 20 weeks, which revealed posterior placenta previa, normal anatomy and an endovaginal cervix length of over 25 mm.

She presented to our hospital emergency department (secondary obstetrics center) at 29 + 3 weeks with acute abdominal pain and deteriorating general condition. The obstetrics team was notified directly, as was the general surgery team, and the patient was assessed in the resuscitation care unit in the emergency room. Initial assessment revealed that the patient awoke suddenly with diffuse abdominal pain. Systems review was negative. Physical examination showed a soft abdomen with diffuse pain and an irritable uterus. The cervix was long and closed. Initial vital signs were normal. Fetal reactivity monitoring was normal. Bedside ultrasound confirmed placenta previa, a well-moving baby, and a significant amount of free intraperitoneal fluid. A decision was then taken to proceed with an abdomino-pelvic CT scan with contrast to rule out bleeding of digestive or gynaecological origin.

The preliminary CT report was discussed by telephone with the radiologist on call, in the presence of the general surgery team. The findings were that there was no bleeding of digestive origin, and that there was a small area of bleeding in the uterine wall (Figure 1). Diagnostic hypotheses raised included an undiagnosed placenta percreta that is bleeding, or an area of uterine rupture.

Citation: Blouin C, Girard K (2024) Rare Case of Uterine Rupture: 29-Week Interstitial Pregnancy. Obstet Gynecol Cases Rev 11:261. doi.org/10.23937/2377-9004/1410261

Accepted: October 10, 2024: **Published:** October 12, 2024

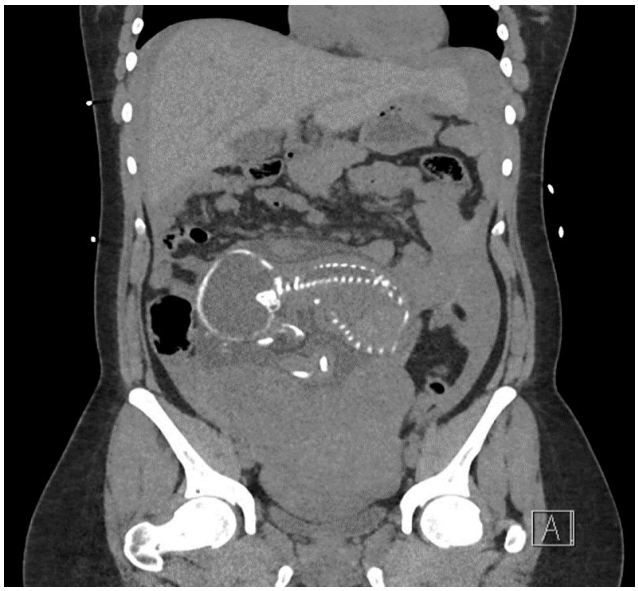

Figure 1: Coronal-view CT scan.

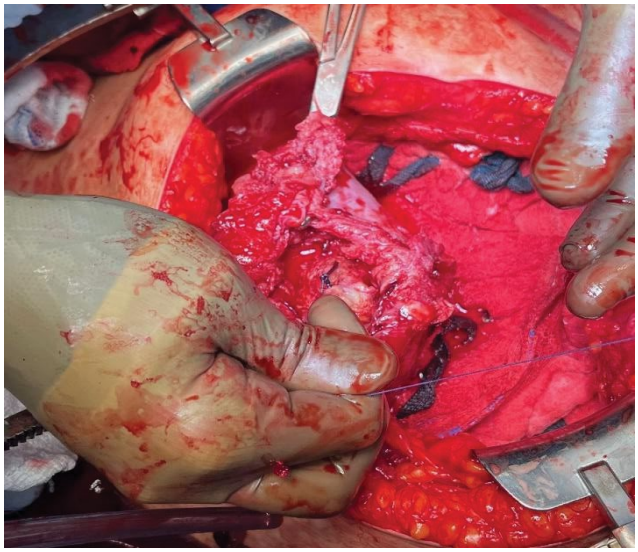

Figure 2: X-stitch on the endometrial cavity, ruptured serosa of the right uterine horn.

The patient's vital signs remained normal. The fetal reactivity tracing started showing complicated variable decelerations with decreased variability. The maternal-fetal medicine specialist in our town was contacted at this time. A telephone consultation led to the conclusion that the patient should not be transferred, given her risk of instability and the abnormal fetal monitoring. A dose of intramuscular betamethasone was administered, and an infusion of magnesium sulfate was started to prepare for the eventuality of fetal birth.

Approximately 3 hours after her arrival at the emergency department, the patient's pain suddenly increased and radiated to her shoulder in a sustained fashion. The patient's heart rate increased, and her oxygen saturation decreased. A decision was made to bring the patient to the operating room at our secondary center, performing joint surgery with the general surgery team. The patient consented to anexploratory median laparotomy + caesarean section ± hysterectomy ± digestive surgery. The anesthesia team, hospital pediatrics team, city tertiary center neonatology team, angio-embolization team and operating room team were contacted, and all team members were present at the incision.

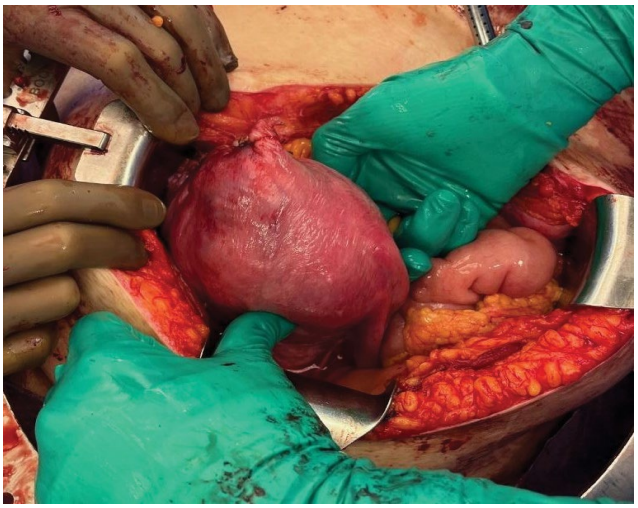

Figure 3: Uterus back in anatomical position.

The patient was placed under general anesthesia. The general surgery team performed a median infra-umbilical laparotomy. A hand was placed in the large hemoperitoneum that emerged from the incision wound. Fetal parts were palpated, and the fetus was removed from the peritoneal cavity. His cord was clamped immediately, and the baby was handed over to the paediatric team. The uterus was manually clamped and the massive hemoperitoneum evacuated. The uterus was found to be small and tightly contracted, and only a single finger could be inserted into the endometrial cavity. The placenta was inserted into the serosa of the right uterine horn, which was ruptured and actively bleeding. The endometrial cavity was closed with an X-stitch (Figure 2).

The placenta was removed manually, the serosa excised in a wedge, and the right Fallopian tube removed. The incision in the uterus was closed with 2 deep, unbarred planes in the myometrium and two superficial, barred planes in the serosa, using absorbable braided suture (Figure 3 and Figure 4). Upper abdominal exploration was negative. The peritoneal cavity and skin incision were closed in the usual way. Total surgical blood loss was over 2 liters.

The patient was admitted to the intensive care unit for the first 24 hours of her post-operative stay. Her clinical condition rapidly improved. Her lowest hemoglobin was 77 g/L. She received a total of 3 packed red blood cells during her hospitalization. She was discharged post-op #4. A one-month BHCG was negative. The patient was in excellent general condition at the 6-week postpartum follow-up appointment.

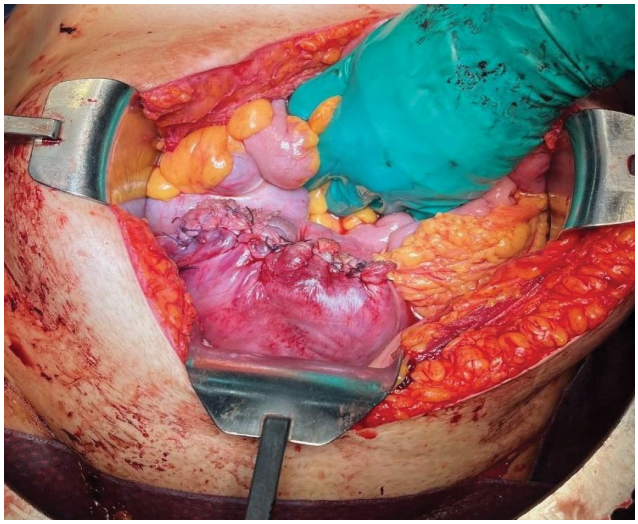

Figure 4: Stitched uterus.

The baby was resuscitated by the paediatric team. His birth weight was 1650 grams (large for gestational age). His APGAR score was 3-4-5, at 1-5-10 minutes of life respectively. He presented with initial respiratory distress on general anesthesia and hyaline membrane disease given gestational age. He was intubated in the operating room at 5 minutes of life. His hemoglobin at birth was 108 g/L. He was transferred to the tertiary center at around 1 hour of life. He progressed well overall and left hospital after 54 days, at a gestational age of 37 + 1 weeks.

Discussion

Interstitial pregnancy remains a very difficult diagnosis to make. The IUSOG proposes the following ultrasound diagnostic criterias: Empty uterine cavity, gestational sac located close to the tube with less than 5 mm of myometrium around the pregnancy, presence of the interstitial line sign (echogenic line separating the endometrial cavity from the gestational sac). The use of Doppler and 3D could aid diagnosis [4]. In our patient's case, the images from the two first-trimester ultrasounds were taken by an experienced technologist. The images were reviewed retrospectively, and no diagnostic criteria were present.

Regarding treatment of interstitial pregnancy, surgical management is generally recommended. Two surgical approaches exist: Wedge resection of the uterine horn + pregnancy ± ipsilateral tube, or cornusotomy, i.e. resection of the trophoblastic debris alone [5]. In our case, it was necessary to resect the entire serosa of the horn and perform a wedge resection, as the region was the site of abundant active bleeding.

Several positive points were highlighted by the hospital's authorities regarding the management of the patient's case. The speed of action of all teams and the quality of the multidisciplinary teamwork were the main points applauded.

Conclusions

This article presents a rare case of live interstitial ectopic pregnancy at 29 weeks. The diagnostic difficulty of this type of pregnancy is discussed. We emphasize the importance of multidisciplinary teamwork, where multiple professionals and medical specialists contributed to achieving favorable maternal and fetal outcomes.

Acknowledgments

The patient has given her consent for an article to be written about her case.

We would like to thank the entire team at Hôpital Saint-François-D'Assise in Quebec City, mainly the operating room & emergency department staff, the obstetrics nurses and the anesthetist & general surgeon on call. Prompt management by the pediatric team and efficient transfer to the tertiary neonatal center also contributed greatly to the baby's positive outcome.

Disclosures

Authors have no conflict of interest to disclose.

Authors meet the criteria for authorship.

Authors did not receive financial support for the writing of this report.

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