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Case Report

Successful Management of Spontaneous Heterotopic Pregnancy with Ruptured Ectopic and Viable Intrauterine Gestation: A Case Report

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Abstract

Heterotopic pregnancy, the simultaneous presence of intrauterine and ectopic gestations, is rare in natural conceptions but poses significant diagnostic and therapeutic challenges. We report a unique case of a 31-year-old woman with a spontaneously conceived heterotopic pregnancy complicated by a ruptured left tubal ectopic gestation. Prompt recognition, emergency laparoscopic intervention, and multidisciplinary care ensured maternal survival and successful continuation of the intrauterine pregnancy to term. This case highlights the need for clinical vigilance, early imaging, and the pivotal role of expert laparoscopic surgical management in complex obstetric emergencies.

Keywords: *Heterotopic Pregnancy (HP); Intrauterine Gestation; Ectopic Gestation*

Introduction

Heterotopic pregnancy (HP) is defined as the coexistence of intrauterine and ectopic gestation, most commonly tubal. While it is frequently associated with assisted reproductive technologies, its occurrence in spontaneous conceptions is exceedingly rare, with an estimated incidence of 1 in 30,000 pregnancies. Diagnostic delays can result in catastrophic hemorrhage, maternal morbidity, or loss of viable intrauterine pregnancy. We present a rare and challenging case of a spontaneous heterotopic pregnancy complicated by rupture of the ectopic component, managed successfully with emergency laparoscopy and continuation of intrauterine gestation to term.

Case Presentation

Patient demographics

A 31-year-old married female, staff nurse, Gravida 2 Para 0 Abortion 1, presented to the emergency department on 23rd December 2024 with a confirmed spontaneous intrauterine pregnancy of 6 weeks and 6 days gestation (LMP: 05/11/2024). She had a history of first-trimester miscarriage in July 2023, managed medically. The patient had no history of infertility, ovulation induction, or assisted conception.

Medical history

- Chronic conditions: Hypothyroidism (Euthyrox 50 mcg daily).
- Family history: Diabetes mellitus, hyperlipidemia.
- No surgical history or allergies.

Initial presentation

- Sudden onset abdominal pain for 1 day, vomiting, diarrhea, dizziness, near-syncope.
- Vital signs: Hypotensive (BP 80/50 mmHg).
- Abdomen soft, distended, no tenderness.
- Labs: Hb 9.7 g/dL, WBC 21 × 10^9/L, CRP normal.

Imaging (24/12/2024)

Transabdominal and transvaginal ultrasound revealed:

- Viable intrauterine pregnancy: CRL 8.7 mm, positive cardiac activity.
- Pelvic mass: 11.6 × 8.4 × 13 cm heterogeneous lesion.
- Free intraperitoneal fluid in subhepatic, perihepatic, and pelvic spaces-suggestive of hemoperitoneum.
- Impression: Suspected ruptured ectopic or hemorrhagic ovarian cyst; possible heterotopic pregnancy.
- Ultrasound imaging reveals anechoic to hypoechoic free fluid in the peritoneal cavity suggestive of hemoperitoneum. The presence of fluid in Morrison's pouch and perisplenic regions supports intra-abdominal bleeding.
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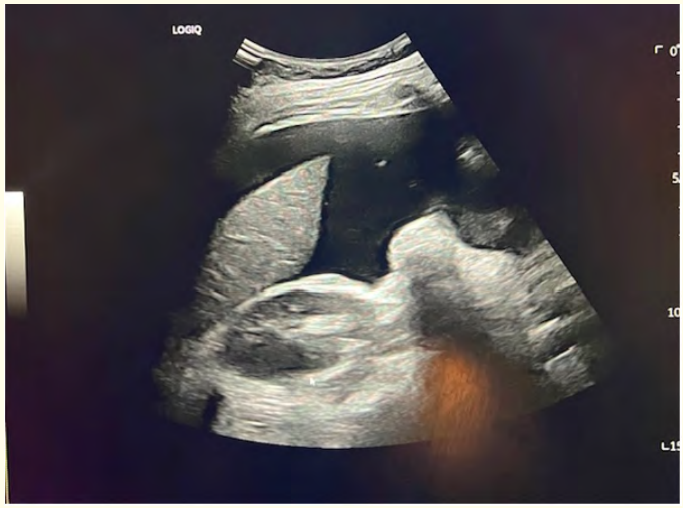

Figure 1

Emergency surgical management

Procedure: Diagnostic laparoscopy (24/12/2024)

Findings:

- Approximately 2000 mL hemoperitoneum with clots.
- Ruptured left tubal ectopic gestation with trophoblastic tissue.

- Right fallopian tube and both ovaries normal.
- Uterus consistent with ~8-week pregnancy.

Intervention:

- Bipolar coagulation for hemostasis.
- Peritoneal lavage and clot evacuation.
- Intraoperative transfusion: 2 units PRBC + 2 units FFP.
- Tissue sent for histopathology (confirmed ectopic pregnancy).
- This intraoperative image demonstrates hemoperitoneum with active intra-abdominal bleeding and blood clots surrounding pelvic structures. The presence of a ruptured adnexal mass suggests ectopic pregnancy.

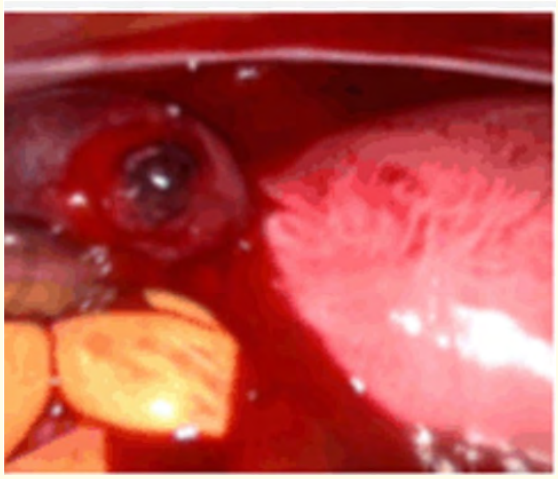

Figure 2

Postoperative course:

- Day 2 Hb dropped to 7.7 g/dL; transfused 2 additional PRBC units.
- Stable vitals; discharged after recovery.

Antenatal course:

- Managed as a high-risk pregnancy with close follow-up.
- Serial ultrasounds confirmed normal fetal growth and viability.
- Term scan: Cephalic presentation, mild renal pelvis dilatation (monitored), AFI normal.
- Estimated fetal weight: 2885g.

Delivery

- **Date:** 07/08/2025.
- **Gestation:** 39 weeks.
- **Indication:** Spontaneous labor with non-progression; diagnosed cephalopelvic disproportion.

Cesarean section:

- Thin lower uterine segment; bladder adherent.
- Right tube normal; left tube surgically absent (post-ectopic surgery).
- Male infant delivered with one cord loop around neck; healthy with good Apgar scores.
- Estimated blood loss: 300 mL.
- Uneventful postoperative recovery.

Final diagnosis

1. Spontaneous heterotopic pregnancy with ruptured left tubal ectopic gestation.
2. Viable intrauterine pregnancy carried to term.
3. Emergency laparoscopy with conservative uterine management.
4. Cesarean section for CPD and labor arrest.
5. Chronic hypothyroidism on replacement therapy.
6. High-risk pregnancy successfully managed.

Discussion

Heterotopic pregnancy poses a significant diagnostic dilemma, particularly in natural conceptions where the condition is often unsuspected. In this case, initial symptoms were confounded by gastrointestinal complaints, delaying recognition. Despite the presence of a confirmed intrauterine pregnancy, continued vigilance and expert imaging revealed the concurrent ectopic gestation.

Massive hemoperitoneum from ruptured tubal pregnancy underscores the life-threatening nature of missed heterotopic pregnancy. Emergency laparoscopy played a pivotal role in diagnosis, hemorrhage control, and preservation of the intrauterine gestation. Importantly, the surgical expertise of the laparoscopic team contributed directly to the patient's survival and the continuation of pregnancy to term.

This case reinforces the need for early, skilled ultrasonography and a high index of suspicion in pregnant women presenting with abdominal pain-even in the presence of a viable intrauterine pregnancy. Additionally, the success of surgical management demonstrates the indispensable role of experienced laparoscopic surgeons in managing complex obstetric emergencies.

Conclusion

Heterotopic pregnancy, though rare in natural conceptions, remains a critical diagnosis that must not be overlooked. The presence of an intrauterine gestation does not exclude concurrent ectopic pregnancy. Early first-trimester ultrasound by skilled sonographers, combined with high clinical suspicion, is key to diagnosis. In this case, timely surgical intervention by an experienced laparoscopic surgeon not only saved the patient's life but also preserved the intrauterine pregnancy, leading to a healthy term delivery. Surgical expertise is vital in ensuring optimal maternal and fetal outcomes in such high-stakes scenarios [1-10].

Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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