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Case Report

# Heterotopic Pregnancy with Ruptured Tubal Ectopic Pregnancy: A Case Report

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## Abstract

Heterotopic pregnancy is the rare simultaneous occurrence of two pregnancies at different implantation sites with only one located in the uterine cavity. The incidence of heterotopic pregnancies has increased due to the increase in assisted reproductive techniques. Here, we discuss a case of a spontaneous pregnancy who presented with a history of increasing lower abdominal pain with brownish vaginal discharge, nausea, and vomiting episodes for the past day. Transabdominal and trans-vaginal ultrasound were performed and revealed a viable intrauterine pregnancy of gestational age 9 weeks and 2 days, associated with a fluid accumulation in pouch of Douglas. Emergency laparoscopic bilateral salpingectomy was done.

**Key words:** Ectopic pregnancy, Heterotopic pregnancy, Intrauterine, Spontaneous pregnancy, Transvaginal ultrasound

## INTRODUCTION

Heterotopic pregnancy describes the occurrence of two pregnancies at different implantation sites simultaneously, mostly manifested as intrauterine and ectopic pregnancies. Heterotopic pregnancy is rare, with an incidence of about 1:30,000 among spontaneous conceptions,[1] but when using assisted reproduction techniques (ART), it has a much higher prevalence of 1:100–1:500.[2] Even in the era of high-resolution ultrasound (US) imaging and Doppler techniques, most of the time, the diagnosis is based on the presence of acute abdominal symptoms. In the current study, we present a case of first trimester heterotopic pregnancy with ruptured left ectopic pregnancy, diagnosed by US.

## CASE PRESENTATION

A 34-year-old pregnant patient with spontaneous pregnancy and an obstetric score of G2P1 presented with complaints of progressive lower abdominal pain, brownish vaginal discharge, nausea, and vomiting for the past 24 h. On examination, patient's pulse was 110/min, BP was 100/70 mmHg, respiratory rate was 15 breaths per minute, and her saturation was 97% in room air. Urgent transabdominal and transvaginal USs were carried out, which revealed fluid collection in the pouch of Douglas and a viable intrauterine pregnancy of 9 weeks and 2 days associated with a ruptured left ectopic pregnancy.

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After obtaining written informed consent, the patient was transferred to the operating room. After observing aseptic precautions and proper antibiotic cover, an emergency laparoscopy was performed under general anesthesia with continuous cardiac and respiratory monitoring. It revealed that the peritoneal cavity was filled with approximately 1500 mL of blood, there was a ruptured left tubal ectopic with oozing of blood, and the right fallopian tube was bundled and adhered to the pouch of Douglas. After complete suctioning of the peritoneal blood collection, a bilateral salpingectomy was done with the utmost care without touching the uterus. Post-operative abdominal US confirmed a viable intrauterine pregnancy. The patient tolerated the procedure well. Post-operative vitals were stable, and clear urine was drained at the end of the procedure.

### Follow-Up

At 36 weeks and 3 days, the patient underwent an elective cesarean section (indication: previous lower segment

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caesarean section). An alive male baby was delivered with cord once around the neck. The baby cried immediately after birth. The postoperative period was uneventful.

## DISCUSSION

Heterotopic pregnancies can be asymptomatic in about half of the cases; otherwise, they can present with variable clinical presentations, mainly abdominal pain, adnexal swelling that may be associated with vaginal bleeding, or even shock due to hypovolemia. Unfortunately, the clinical findings are more frequently presented with tubal rupture.[3] When seen in the emergency room, the differentials include ectopic pregnancy, abortion, and ovarian torsion. Transvaginal US has been instrumental for the diagnosis.[4] Ectopic pregnancy needs early diagnosis and management to avoid the high probability of tubal rupture.

Approximately 70% of heterotopic pregnancies are diagnosed between 5 and 8 weeks gestational age, 20% between 9 and 10 weeks, and the remaining 10% beyond 11 weeks. The clinical manifestation varies depending on the time of diagnosis, with early diagnosis being decisive and important for modifying the morbidity and mortality of the patient and her reproductive future.[5] The prognosis of intrauterine pregnancy depends on early clinical and ultrasonographic diagnosis.[5,6] The fetal mortality rate for extrauterine pregnancy is about 98% and for intrauterine pregnancy between 45% and 65%.[7]

According to Reece *et al.*,[8] the most frequent location of extrauterine pregnancy coexisting with intrauterine pregnancy is the oviducts (93.9%); definitely more rarely, the pregnancy is located in the ovary (6%). More frequent incidence of pregnancies in the left oviduct in comparison to the right oviduct has been observed (31.8% vs. 36.3%). Reece *et al.*,[8] submitted for analysis 37 patients with diagnosed heterotopic pregnancy after surgical treatment of extrauterine pregnancy −75.6% gave birth around their expected delivery date, 16.2% prematurely, and 3% of pregnancies ended with a miscarriage. According to Tal *et al.*,[9] the major symptoms are abdominal pain −83%, surgical abdomen symptoms and shock −13%, and vaginal bleeding −50% of cases.

Heterotopic pregnancy treatment needs laparoscopy and, most often, a salpingectomy or salpingostomy. However, in hemodynamically unstable cases, laparotomy may be needed. Systemic methotrexate has no role in the management of heterotopic pregnancy due to the presence of a viable intrauterine pregnancy. Some literature describes the use of local injections of potassium chloride and methotrexate, but the success rate is controversial.[10]

These case reports and literature reviews emphasize focused scanning of the adnexa in patients who have undergone ART and embryo transfer, even in asymptomatic cases. The standard for ruling out heterotopic pregnancy should be the exclusion of extrauterine gestation. In patients having higher than expected levels of serum beta-HCG but having only single intrauterine gestation, close monitoring by repeated serum beta-HCG levels and transvaginal US is advisable.

## CONCLUSION

Even though heterotopic pregnancy is a rare condition, clinicians should always keep it as a differential diagnosis in patients of any age presenting with abdominal pain and signs or symptoms of ectopic pregnancy. In early pregnancy, a thorough and detailed clinical examination with US visualization of the uterus and adnexa is an important pillar in the diagnosis and early identification of this pathology.

The appendages should be examined in every woman in early pregnancy, especially if the pregnancy is the result of *in vitro* fertilization and when accompanied by clinical symptoms such as abdominal pain, fluid in the pouch of Douglas, or hypovolemic shock. Laparoscopy is described as the safest approach, with fewer complications and can contribute to maintaining intrauterine pregnancy and its successful delivery.

## AVAILABILITY OF DATA AND MATERIALS

The data that support the findings of this study are available on request from the corresponding author.

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was approved by the ethical committee of the institution, and informed written consent from the patient included in this study was obtained.

## CONSENT FOR PUBLICATION

All authors read and approved the final manuscript. The patient included in this research gave written informed consent to publish the data contained within this study.

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