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Case Report

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A Rare Postpartum Incidental Finding: Heterotopic Intra-Abdominal Pregnancy

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ABSTRACT

Heterotopic pregnancy is an extremely rare condition where two pregnancies occur simultaneously one inside the uterus and the other outside, often in the abdominal cavity or fallopian tube. In natural conception, this occurs in about 1 in 30,000 pregnancies, but the risk increases to 1%-3% with fertility treatments like IVF. Symptoms can include abdominal pain (~72%) and vaginal bleeding (~54%), though about 25% of women may be asymptomatic.

Diagnosis typically involves transvaginal ultrasound, and management often requires surgical intervention like laparoscopy to remove the ectopic pregnancy while trying to save the intrauterine pregnancy.

Keywords:

Heterotopic pregnancy, Fallopian tube, In vitro Fertilization (IVF), Biovular twin pregnancy.

Introduction

Heterotopic Pregnancy (HP) refers to the simultaneous occurrence of two pregnancies: one located correctly inside the uterus and the other implanted elsewhere—most commonly in the fallopian tube or, more rarely, within the abdominal cavity [1,2].

It is an exceptionally rare condition in women who conceive naturally, occurring in approximately 0.001% to 0.006% of pregnancies [1,3]. However, this risk increases dramatically, rising to about 1%–3% in women who undergo fertility treatments such as In Vitro Fertilization (IVF). Rarer still is the scenario of an abdominal twin pregnancy, where twin fetuses develop outside the uterus within the abdominal cavity itself [2].

Regarding maternal and fetal outcomes, around 60%–70% of women with HP successfully deliver a live intrauterine baby, often with outcomes comparable to normal pregnancies [3]. Nevertheless, undiagnosed HP can present severe risks to both mother and fetus. Some women remain completely asymptomatic (approximately 25%), but the majority present with abdominal pain (about 72%) and/or vaginal bleeding (around 54%). Importantly, HP approximately doubles the risk of miscarriage [3,4].

Abdominal pregnancies are usually diagnosed during pregnancy because of complications like bleeding or pain.[2] However, exceptionally, such a diagnosis can be delayed until after delivery, as was the case described here [3].

Case Report

This is the case of a 32-year-old woman, para 3 with previous c sections, who arrived in the emergency outpatient department with persistent lower abdominal pain, low-grade fever, and some gastrointestinal discomfort that had been ongoing for about two months.

Approximately two months prior, she had delivered a baby via cesarean section. Her pregnancy had appeared normal throughout, with routine ultrasounds showing a single healthy fetus developing within the uterus, and no abnormalities were detected.

During her cesarean delivery, her surgeon noticed an unusual, hard, stone-like mass inside her abdominal cavity. The surgeon advised her to undergo follow-up ultrasound, but she chose not to pursue further imaging at that time.

Three days after discharge, she developed a fever and abdominal pain. She consulted a general physician, received some medications, but her symptoms persisted without resolution over the next two months. She finally sought care at Liaquat National Hospital.

On examination, her vital signs revealed a raised Total Leukocyte Count (TLC), and she had a low grade fever. Abdominal examination showed tenderness, and a firm, stony-hard lump was palpable in the lower abdomen. The initial suspicion was of peritonitis with an abdominal mass. An ultrasound was performed, followed by a CT scan of the abdomen. The ultrasound report (Figure 1) was startlingly abnormal: it showed multiple fetal parts in the lower abdomen, suggesting a macerated fetus that appeared adhered to surrounding structures. The fetal femur measured approximately 25.5 mm, and the abdominal circumference was about 172.3 mm, corresponding to a gestational age of approximately 20 weeks and 5 days. No fetal cardiac activity was detected on Doppler ultrasound, and no amniotic sac, fluid, or placenta was visible likely due to fetal maceration and the passage of time (Figure 1a). It also shown that her uterus, endometrium, and both ovaries appeared normal, with no signs of intrauterine or ovarian pathology (Figure 1b).

The CT scan (Figure 2) revealed a fetus located entirely outside the uterine cavity, extending from just above the uterus into the abdominal cavity (Figure 2a). It was found to be connected to the small bowel via a cord-like structure in its upper part, confirming that it was a non-viable twin developing outside the uterus suggestive of heterotopic pregnancy (Figure 2b and 2c).

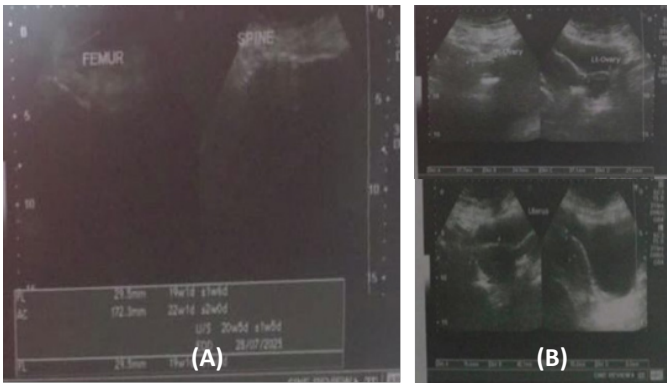


Figure 1: Ultrasound images. **a):** fetal body parts; **b):** Uterus and ovaries.

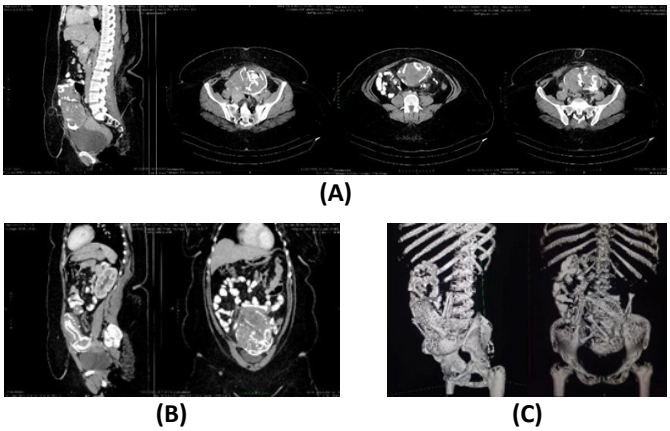


Figure 2: CT scan. **a):** Sagittal and axial images; **b):** Sagittal and coronal images; **c):** 3D reconstruction images

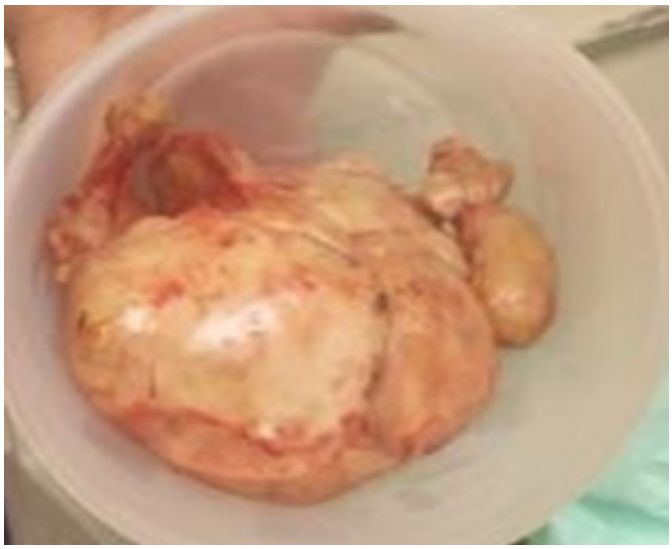


Figure 3: Post-operative macerated fetus.

Given these findings, the patient underwent an emergency exploratory laparotomy. During surgery, the non-viable, macerated fetus was carefully removed from the abdominal cavity (Figure 3). The procedure was successful, and her recovery was smooth and uneventful.

Discussion

Heterotopic pregnancy is a pathological variant of dizygotic, biovular twin pregnancy [1], where one embryo implants normally within the uterine cavity, while the other arrests its migration and implants ectopically. Such occurrences may be explained by ovulatory abnormalities or differences in embryo migration speed, delayed capture by the fallopian tube [2,5].

The risk factors for Heterotopic Pregnancy (HP) largely overlap with those for Ectopic Pregnancy (EP). These include prior tubal damage resulting from pelvic inflammatory disease, endometriosis, or tubal surgeries [2]. Additional contributing factors encompass ovulation induction, sexually transmitted infections (particularly Chlamydia), abdominal surgeries, infertility treatments, and the use of certain contraceptives or assisted reproductive techniques [3,5].

In women undergoing *In Vitro* Fertilization (IVF), the risk of abdominal pregnancy can increase by up to eightfold compared to the general population [4,8]. Although the precise mechanisms remain unclear, HP is more frequently observed among women with underlying tubal pathology and when multiple embryos are transferred [4,5]. Other risk factors align with those for isolated ectopic pregnancies, including prior ectopic pregnancy, Intrauterine Device (IUD) use, and smoking [4,5].

Diagnostic evaluation often reveals lower-than-expected levels of the β-Subunit of Human Chorionic Gonadotropin (β-HCG), raising suspicion for an ectopic pregnancy [5]. Nevertheless, Transvaginal Ultrasound (TVUS) is the cornerstone of diagnosis, correctly identifying intrauterine and extrauterine gestations in approximately 88.9% of cases [5,6]. In equivocal situations, exploratory laparoscopy may be necessary to establish the diagnosis and guide treatment [7].

Historically, surgical intervention via laparotomy has been the standard approach, particularly in unstable patients or in advanced gestation. However, minimally invasive techniques such as laparoscopy have increasingly gained favor due to reduced morbidity, faster recovery, and the potential to preserve the intrauterine pregnancy, with reported success rates of 58%-70% [4,7].

Most documented HP cases involve a singleton intrauterine pregnancy, though rare reports describe triplet, quadruplet, or multiple heterotopic pregnancies [8,9]. Crucially, delayed or missed diagnosis can substantially increase maternal and fetal morbidity and mortality [9,10].

In stable patients diagnosed early, conservative management options may be considered. These include ultrasound-guided injections of agents such as potassium chloride or methotrexate directly into the ectopic gestation, sometimes combined with suction evacuation. This strategy aims to resolve the ectopic pregnancy while preserving the intrauterine fetus; notably, systemic methotrexate is contraindicated as it endangers the intrauterine pregnancy [4,8,9].

Other specialized techniquesn such as managing cervical ectopic pregnancies with a Foley balloon or administering progesterone supplementation to support the viable pregnancy have also resulted in successful term deliveries [4,6]. Despite these modern advances, HP still carries a maternal mortality rate of approximately 0.50 per 100,000 live births [6,9].

Ultimately, clinicians must remain vigilant. In postpartum women presenting with acute abdominal pain, careful evaluation of the

pelvis and abdomen is essential [9,10]. While more common conditions such as chorioamnionitis, cesarean scar dehiscence, urolithiasis, or pyelonephritis should be considered, HP though rare must not be overlooked [1,9,10].

Conclusion

Heterotopic abdominal twin pregnancies are rare and often missed during pregnancy, only revealing themselves after delivery. Postpartum women with unexplained abdominal pain or fever should be carefully evaluated with imaging. Prompt diagnosis and surgical treatment are essential to prevent serious complications and ensure full recovery.

Consent and Ethical Approval

We declare that all necessary consent has been obtained. The patient has agreed to the publication of her clinical images and information in this journal, understanding that her identity will remain undisclosed.

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Competing Interests

The authors declare no conflict of interest.

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