CASE REPORT

A Near Miss Case of Heterotopic Pregnancy Coexisting with Uterine Perforation, Detected after Surgical Evacuation of an Intrauterine Pregnancy

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Abstract

Aim: The management of a missed diagnosis of heterotopic pregnancy complicated by uterine perforation.

Background: Heterotopic pregnancy (HP) is an exceptional condition where at least two pregnancies are present simultaneously at different implantation sites and one of them is located in the uterine cavity.

Case description: We report an interesting near miss case of a 23-year-old P3L3A1 with a heterotopic pregnancy who was misdiagnosed as a case of acute abdomen with hemoperitoneum due to uterine perforation, postsurgical evacuation for an intrauterine pregnancy. Exploratory laparotomy was performed which confirmed the diagnosis of heterotopic pregnancy where the ectopic pregnancy was located in the right fallopian tube which was managed by right-sided salpingectomy and uterine rent repair was performed.

Conclusion: A high index of suspicion followed by an early surgical laparoscopic/laparotomy intervention can minimize maternal morbidity and mortality in a heterotopic pregnancy.

Clinical significance: How a benign and assumably routine case of missed abortion escalated to an eventual diagnosis of a heterotopic pregnancy.

Keywords: Assisted reproductive technique, Heterotopic pregnancy, Ruptured ectopic, Salpingectomy, Uterine perforation.

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Background

The prevalence of HP varies from 1 in 30,000 in a natural cycle to around 1 in 100 in an assisted one. It was first described at an autopsy by Duverney in 1708, and it was later identified in ovulation inducement, *in vitro* fertilization (IVF)-embryo transfer, and gamete intrafallopian transfer.[1] Even in the era of high-resolution ultrasound imaging and Doppler techniques, the diagnosis is mostly based on the presence of acute abdominal symptoms.

Case Description

A 23-year-old P3L3A1 came to the emergency department of a private hospital with complaints of pain in the right iliac fossa of abdomen and 8–10 episodes of vomiting since 1 day. The urine pregnancy test was positive. The patient gave a history of suction and evacuation being performed two days prior to the first trimester spontaneous missed abortion. The patient was admitted for 1 day for the procedure and was discharged. A day later the patient was presented to our emergency services in tertiary care hospital with above symptoms.

On arrival, patient had severe pallor, pulse rate of 110/minute, and blood pressure of 90/60 mm Hg with cold extremities. On per abdominal examination, there was rebound tenderness in the right iliac fossa with guarding. The abdomen appeared to be distended and there was a dull note of percussion. On per vaginal examination, the uterus was bulky with right-sided forniceal fullness with tenderness and the left fornix was free. There was minimal vaginal bleeding with fullness in the pouch of Douglas. All routine investigations were sent. Her complete blood count revealed hemoglobin of 7 gm/dL with a fall in hemoglobin of 4 gm/dL in 2 days. An initial impression of acute abdomen with suspected uterine perforation following suction evacuation was made. Ultrasonography revealed mild ascites with a uterus full of blood clots. An erect X-ray of the abdomen was clinically unremarkable. Contrast-enhanced computed tomography was performed which revealed perforation on the fundal aspect of the uterus measuring 3 mm with moderate-high-density free fluid in the abdomen with 45 × 57 × 53 mm hyperdense lesion with multiple peripherally enhancing hyperdense cystic areas which were noted in right adnexa with right ovary not seen separately, likely suggestive of complex tubo-ovarian mass. Ultrasonography-guided tapping was performed which confirmed hemoperitoneum.

Emergency exploratory laparotomy was performed with surgeons on standby given the above findings by taking a vertical midline infraumbilical incision. Intraoperatively, there was a right-sided tubal abortion near the fimbrial end of the fallopian tube with clots of 160 gm and hemoperitoneum of about

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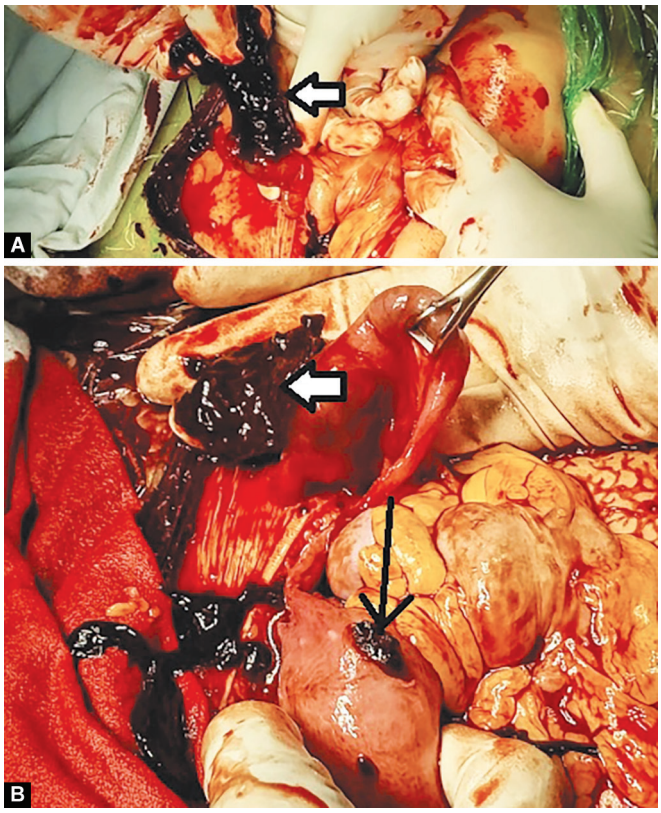

Figs 1A and B: Ruptured tubal ectopic pregnancy (solid arrow) and uterine perforation (line arrow)

350 mL. There was a uterine perforation in the fundo-posterior region more toward the right-side measuring about 0.5 × 0.5 cm (Fig. 1). Given the above findings, right-sided salpingectomy was performed along with uterine rent repair. Bowel tracing was done and there was no evidence of bowel perforation. An abdominal wash was given and intra-abdominal drain was kept *in situ* for 5 days. The patient was transfused 3 units of packed red cells and 4 units of fresh frozen plasma. The patient was shifted to high dependency unit for monitoring and postoperative period was uneventful. The patient was discharged postoperatively on day 7. The material was histopathologically examined and revealed a dilated congested segment of the right fallopian tube and remnants of a blood clot, decidual tissue, and chorionic villi, as well as trophoblasts within the dilated fallopian tube, indicating tubal ectopic pregnancy.

Discussion

The most common site for ectopic pregnancy is the fallopian tube, both in spontaneous and ART-induced heterotopic pregnancies. HP is a rare entity, the incidence of heterotopic pregnancy is escalating, and is a consequence of modern reproductive medicine.[2] Even if an intrauterine pregnancy (IUP) has been confirmed, doctors should maintain a high index of suspicion in all patients presenting with amenorrhea, abdominal pain, adnexal mass, peritoneal irritation, and an enlarged uterus because spontaneous HP is a potentially dangerous illness. Suspicion should be raised in women who have ectopic pregnancy risk factors as well as in low-risk women who have free fluid with or without an adnexal mass and an intrauterine pregnancy. An HP can be difficult to diagnose because pain and bleeding can be attributed to a threatened abortion or, in our instance, uterine perforation. If ART is not used, the index of suspicion for an HP is usually quite low, which might result in deadly complications if diagnosed too late. The existence of an IUP, whether viable or not, can disguise the ectopic component of an HP, causing diagnostic delay, as in this case.

The type of operation, the woman's reproductive health features, and the projected embryo implantation potential are the three main risk factors for HP. A number of IVF parameters have been linked to an increased risk of HP. Patients who start their cycles with GNRh agonist are predisposed to a higher risk of heterotopic pregnancy than those with Recombinant HCG as they have poor endometrial receptivity. The rate of HP after a single embryo transfer is 1.7%, while the rate after four embryo transfers is 2.5%. Depth of embryo transfer may also have an effect; a prospective study revealed an increased incidence of 1.5% in case of deep transfer and 0.4% in mid-fundal transfer.[3] The transfer of fresh embryos is associated with a higher HP risk as compared to thawed embryos as controlled ovarian hyperstimulation and hyperestrogenic environment prior to fresh embryo transfer negatively affect endometrial receptivity.[4]

In cases of spontaneous conception, the cause of HP can be attributed to previous ectopic pregnancy, tuberculosis treatment, pelvic inflammatory disease, previous surgery for endometriosis. The intrauterine pregnancy masks any underlying β-hCG changes from the extrauterine pregnancy and vice versa; often the diagnosis is made intraoperatively as was in our case. Timely laparotomy or laparoscopy helps in prompt diagnosis. Treatment in the case of heterotopic pregnancy should be prompt to avoid maternal morbidity and mortality. Laparoscopy (salpingostomy or salpingectomy) is the preferred treatment since it provides superior intrauterine pregnancy outcomes and has the fewest side effects. HP is a devastating condition as the false reassurance of seeing an IUP detracts from the serious risks posed by the ectopic and any clinical symptoms get attributed to either the normal pregnancy spectrum or a surgical pathology. The dictum "think ectopic" is forgotten in the presence of an intrauterine pregnancy as stated by Talbot et al, with potential serious consequences holds true as depicted in our case.

Clinical Significance

Every physician who treats women of reproductive age should be aware of the possibility of HP, which can occur even when there are no predisposing risk factors. A vertical midline incision should be preferred in the case of acute abdomen where there is dilemma in the diagnosis between gynecological or surgical causes of acute abdomen as surgical causes are better dealt with this incision.

Conclusion

A high index of suspicion followed by an early surgical laparoscopic/laparotomy intervention can minimize maternal morbidity and mortality in heterotopic pregnancy.

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