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Case Report

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Ectopic Pregnancy: A Case of Consecutive Occurrences of Different Types

Wania Mohammad Akram[1], Swetha Kannan[1], Urooj Shahid[1], Aisha Sajjad[1], Shameema Asif Muhammed[1]

Abstract

Ovarian ectopic pregnancy, a rare manifestation of ectopic gestation, involves the implantation of a fertilized egg on the ovarian surface. This condition poses diagnostic challenges and is associated with significant maternal morbidity if not promptly managed. This report presents the case of a 33-year-old nulliparous woman with a history of polycystic ovary syndrome (PCOS) undergoing ovulation induction therapy. Following her first conception in October 2021, she presented with symptoms of per vaginal spotting and low back pain, prompting a diagnosis of left adnexal ectopic pregnancy confirmed by transvaginal ultrasound and serum beta-human chorionic gonadotropin (B-HCG) levels. Medical management with methotrexate was initiated successfully.In August 2022, the patient conceived again, with subsequent ultrasound revealing a large pelvic collection suggestive of a complex ectopic pregnancy involving both ovaries. Despite initial stability, she developed abdominal pain necessitating emergency laparoscopy, which revealed an ovarian ectopic pregnancy with hemoperitoneum. Laparotomy was performed due to the complexity of the presentation, and histopathology confirmed viable chorionic villi within ovarian tissue.This case underscores the clinical management challenges posed by ovarian ectopic pregnancies, particularly in patients with previous ectopic pregnancies. The discussion reviews current literature on diagnostic modalities, treatment strategies, and outcomes associated with ovarian ectopic pregnancies, emphasizing the role of surgical intervention in cases refractory to conservative management. Tailored approaches considering individual patient factors are crucial to optimize outcomes and preserve fertility in such complex scenarios

Keywords: Ectopic pregnancy; polycystic ovary syndrome (PCOS)

Background: Ectopic pregnancy, a condition characterized by the implantation and development of an embryo outside the uterine cavity [4]. Among the rarest forms of ectopic pregnancies is ovarian pregnancy, constituting 0.15–3% of all ectopic gestations. This unique occurrence results from the fertilized egg implanting on the surface of the ovary [6].

There have been two hypothesized methods for explaining ovarian ectopic pregnancy. One idea is that fertilization occurs properly, and implantation in the ovary happens after the conceptus refluxes from the tube. The alternative theory holds that ovarian implantation is caused by a variety of ovum release problems. However, the exact cause remains unknown [5].Researchers have found that

OEP is frequently associated with a history of ectopic pregnancies, IVF-ET therapy, endometriosis, IUDs, Fallopian tube lesions, PID, contraceptive use, Cesarean sections, Chlamydia infection, age, and socioeconomic status [5].

Patients mostly exhibit symptoms similar to those associated with ectopic pregnancy at other locations. Chronic pelvic discomfort is the most common

Affiliation:

[1]Gulf Medical University, UAE

***Corresponding author:**
Wania Mohammad Akram, Gulf Medical University, UAE.

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clinical sign of an ovarian pregnancy, and an adnexal mass may be evident upon examination. Additionally, vaginal bleeding and a positive pregnancy test is also present The diagnosis is frequently made during surgery and requires histological confirmation [7].

The investigations for ovarian ectopic pregnancy typically involve a combination of clinical assessment, laboratory assessments and imaging. Transvaginal Ultrasound is the primary imaging modality for diagnosing ovarian ectopic pregnancy. Laparoscopy is considered the gold standard for confirming the diagnosis of ovarian ectopic pregnancy. It aids in direct visualization of the pelvic organs, confirms the presence of the ectopic pregnancy in the ovary and also provides an opportunity for surgical intervention, such as the removal of the ectopic pregnancy or repair of any damaged tissue [3].

Smaller, earlier lesions can be managed by cystectomy or wedge resection. Larger masses may warrant laparoscopic oophorectomy or laser ablation. Emergency laparotomy should be opted if the patient is hemodynamically unstable [1]. Although ovarian ectopic pregnancies are rare, complications due to rupture can be severe, often fatal. Spontaneous bleeding due to rupture is one of the leading causes of maternal mortality in the first trimester worldwide, accounting for 4 to 10% of all pregnancy related deaths. Following the evacuation of an ovarian ectopic pregnancy, some of the villi and trophoblastic tissue from the ectopic fetal mass may persist, hence serial B-HCG monitoring is crucial [2].

Case report

The patient was a 33-year old nulliparous woman, married for 7 years and was undergoing treatment for primary infertility. Patient has a history of PCOS and was undergoing ovulation induction since 2021. The patient complained of getting her menses every 2 months accompanied with excess flow. Her medications included glucophage and folic acid. Progesterone, metformin and clomiphene citrate were prescribed keeping in mind her desire to conceive.

First pregnancy was in October 2021, after ovulation induction. Patient was 5 weeks +3 pregnant and came to OPD with complaints of per vaginal spotting and low back pain. Tansvaginal ultrasound showed thickened endometrium with a small well defined mass measuring 1.5x 1 cm in the adnexa within a sac-like structure. Serum B-HCG, pelvic scan, CBC, blood typing, LFTS and RFTS were ordered. Serum B-HCG was 660 mIU/ml. Pelvis scan showed left adnexal inhomogeneous echotexture lesion suggestive of organizing hematoma with collapsed gestational sac within it, suggestive of left adnexal ectopic pregnancy. Patient was admitted for medical management. Methotrexate 80 mg was given intramuscularly.

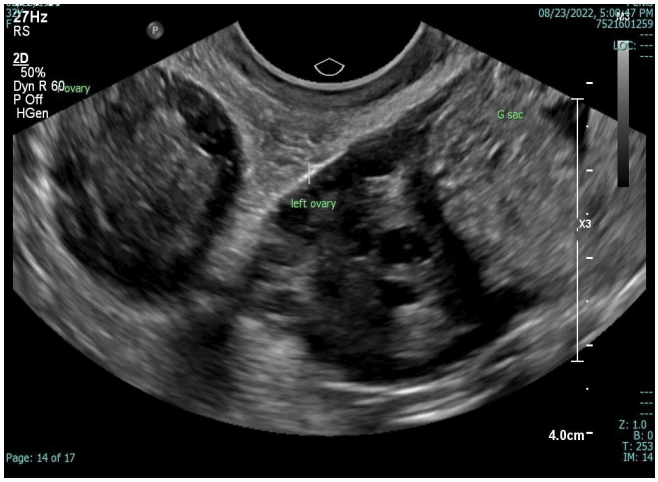

Figure 1: Homogenous area of collection seen in the Pouch of Douglas, engulfing both right and left ovaries (measuring 5 cm each)

In August 2022 the patient conceived again after ovulation induction. Patient underwent serum B-HCG testing the previous day which confirmed her pregnancy (B-HCG level 1833 mIU/ml). Ultrasound showed no intrauterine or extrauterine pregnancy. As the patient was asymptomatic, she was advised to repeat B-HCG which was 1648 mIU/ml. Meanwhile the patient developed abdominal pain and came to the emergency department. Ultrasound was done which showed a homogenous area of collection in the pouch of douglas, measuring more than 5.0cm engulfing both the ovaries. No definite intra or extrauterine gestational sac was seen. Moderate free fluid with fine echos seen in the pelvic cavity.

Patient was vitally stable. She was taken for laparoscopy which showed broad fundus; hemoperitoneum around 200 ML; right and left fallopian tube was intact. Right ovary was normal, the left ovary enlarged with a hematoma. Ovarian ectopic seen in the posterior lateral aspect of ovary which was excised and sent for histopathology.

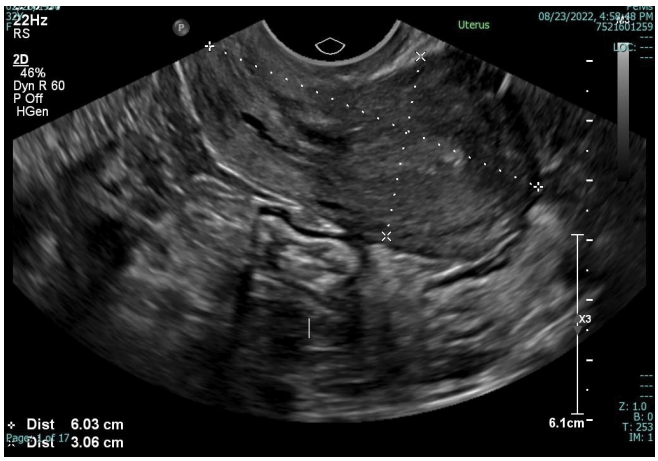

Figure 2: Enlarged size of the uterus

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Figure 3: No intra or extrauterine gestational sac seen

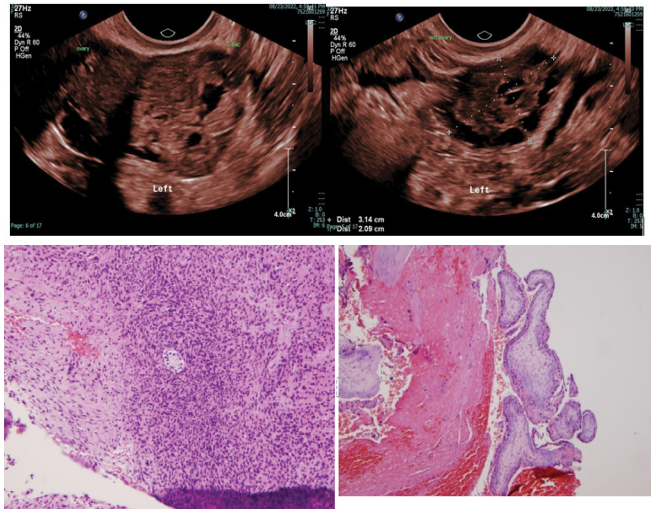

Figure 4: Histopathology of resected specimen showed ovarian tissue with viable ovarian stroma in periphery and central area shows hemorrhagic and necrotic chorionic villi and decidual tissue.

Patient had an uneventful postoperative period. Her B-HCG was followed up until it was negative. Histopathology confirmed the diagnosis which showed ovarian tissue with viable ovarian stroma in the periphery and central area of hemorrhagic, necrotic, viable chorionic villi and decidual tissue.

Discussion

Ovarian ectopic pregnancy is a rare but clinically significant form of ectopic pregnancy, characterized by the implantation of a fertilized egg on the surface of the ovary. Management of ovarian ectopic pregnancies poses unique challenges due to their unusual location and potential for severe complications such as rupture.

In cases where conservative management with methotrexate or laparoscopic intervention is not feasible or effective, as in the case of our patient who had a previous ectopic pregnancy treated medically, laparotomy becomes necessary. This surgical approach allows for direct visualization and intervention, which is crucial in cases of significant hemorrhage or when the ectopic pregnancy is not amenable to less invasive techniques.

Literature supports various approaches to managing ovarian ectopic pregnancies, with laparotomy reserved for cases where laparoscopy or medical management is contraindicated or has failed. According to a study by Jiang et al., [7] surgical intervention, including laparotomy, remains a viable option for the management of ectopic pregnancies, particularly in cases of severe bleeding or hemodynamic instability . Bouyer et al. also underscored the importance of tailored management strategies based on individual patient factors and clinical presentation, emphasizing the role of surgery when indicated [6].

Our patient's history of PCOS and previous ectopic pregnancy highlights the complexity of managing fertility-related conditions and underscores the need for individualized treatment approaches. While laparotomy is associated with increased surgical risks and longer recovery times compared to laparoscopy, it remains a critical option in cases necessitating definitive surgical intervention.

In conclusion, the management of ovarian ectopic pregnancy, especially in patients with a history of ectopic pregnancy, necessitates a multidisciplinary approach tailored to the patient's clinical condition and fertility goals. Future research should continue to explore optimal treatment strategies, taking into account both clinical outcomes and patient preferences.

Conflict of Interest: None

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