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RARE CASE OF RUPTURED OVARIAN ECTOPIC PREGNANCY IN EARLY GESTATION: A CASE REPORT FROM A RURAL TERTIARY CARE CENTRE IN MAHARASHTRA

Obstetrics & Gynaecology

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ABSTRACT

Background: Ovarian ectopic pregnancy (OEP) is a rare and life-threatening condition, accounting for 0.5-3% of ectopic pregnancies. Its rupture in early gestation poses significant diagnostic and therapeutic challenges, particularly in resource-limited rural settings. **Objectives:** To report a rare case of ruptured OEP in early gestation, emphasizing diagnostic challenges, management, and the importance of timely intervention in rural healthcare settings. **Methodology:** A 27-year-old multigravida presented with acute abdominal pain, hemodynamic instability, and hemoperitoneum. Transvaginal ultrasound revealed an extra-uterine gestational sac in the right adnexa and hemoperitoneum. Emergency laparotomy with partial oophorectomy was performed due to hemodynamic instability. Postoperative recovery was monitored, and the patient was discharged in stable condition. **Results:** The patient presented with severe anemia (Hb 9.0 g/dL), elevated β-hCG (226.6 mIU/mL), and ultrasonographic findings of a right adnexal mass with hemoperitoneum. Surgical intervention confirmed a ruptured OEP with 500 cc of intraperitoneal blood. The patient stabilized postoperatively after blood transfusion and was discharged on the fifth day. The case highlights the diagnostic dilemma of OEP, which mimics other gynecological emergencies, and underscores the critical role of prompt surgical management in hemodynamically unstable patients. **Conclusion:** Ruptured OEP, though rare, requires high clinical suspicion and urgent intervention to prevent life-threatening complications. Improved diagnostic protocols and resource allocation in rural settings are essential to reduce maternal morbidity and mortality.

KEYWORDS

Ovarian ectopic pregnancy, rupture, hemoperitoneum, rural healthcare, surgical management.

INTRODUCTION:

Ectopic pregnancy (EP) remains a life-threatening obstetric emergency, accounting for approximately 1-2% of all pregnancies and contributing significantly to maternal morbidity and mortality[1]. While tubal ectopic pregnancies are the most common (95-97%), non-tubal ectopic pregnancies—including ovarian, cervical, abdominal, and interstitial—are rare but pose diagnostic and therapeutic challenges[2]. Ovarian ectopic pregnancy (OEP) represents only 0.5-3% of all ectopic pregnancies, making it an exceptionally uncommon occurrence[3]. The rupture of an OEP in early gestation is an even rarer phenomenon, often leading to catastrophic hemorrhage and requiring urgent surgical intervention[4].

The diagnosis of OEP is particularly challenging due to its nonspecific clinical presentation, which often mimics other gynecological emergencies such as ruptured corpus luteal cysts, tubal ectopic pregnancies, or appendicitis[5]. Transvaginal ultrasound (TVS) remains the primary diagnostic tool, yet its accuracy depends on operator expertise, especially in resource-limited settings[6]. The lack of pathognomonic features often leads to misdiagnosis, delaying life-saving treatment[7]. In rural areas, where access to advanced imaging and specialized healthcare is limited, the risk of adverse outcomes escalates[8].

This case report describes a rare instance of a ruptured ovarian ectopic pregnancy in early gestation, managed at a rural tertiary care center in Maharashtra, India. The patient, a young woman with no known risk factors for ectopic pregnancy, presented with acute abdominal pain and hemodynamic instability. The diagnostic dilemma, rapid clinical deterioration, and subsequent emergency laparotomy highlight the critical need for heightened clinical suspicion and prompt intervention in such cases.

The rationale for this study lies in the scarcity of documented cases of ruptured OEP in early gestation, particularly from rural healthcare settings where diagnostic delays are common. By presenting this case, we aim to emphasize the importance of early recognition, timely imaging, and surgical management to reduce maternal mortality. Additionally, this report underscores the challenges faced by rural healthcare providers in managing rare obstetric emergencies with limited resources.

Case Report:

History:

A 27-year-old female from Ratnagiri, Maharashtra, presented to our hospital in view of ruptured ectopic pregnancy with hemoperitoneum with severe anaemia. Patient had complaints of severe abdominal pain and a history of per vaginal bleeding persisting for 10 to 12 days. She is married-since 7 years. She is multigravida, G3P2L2, with two previous deliveries—her first being by lower segment cesarean section (LSCS) and the second a full-term normal delivery (FTND). Her last menstrual period (LMP) was 16/03/2025 (7 weeks pregnant) at the time of admission. She had a positive urine pregnancy test (UPT).

There was no significant prior history of chronic illnesses such as hypertension, diabetes, or thyroid disease. Her past obstetric history included no known complications, and she had no known drug allergies or ongoing medications. She denied any use of tobacco, alcohol, or other substances. She had two living children and no history suggestive of infertility treatments or pelvic infections.

General Examination Findings:

On presentation to the emergency department, she appeared acutely ill and in considerable distress. General examination revealed a feeble pulse at 98 beats per minute and hypotension, with a blood pressure reading of 90/60 mmHg, heart rate 90 per min. Respiratory rate was 22 breaths per minute and her temperature was within normal range. The patient was pale and diaphoretic, suggestive of hypovolemic shock. Peripheral perfusion was poor. The cardiovascular system examination revealed low-volume pulse with tachycardia. Abdominal examination revealed diffuse tenderness with guarding and rigidity more pronounced in the right lower quadrant. There was rebound tenderness indicating peritoneal irritation.

Per vaginum (PV) examination was performed with patient consent, which revealed cervical motion tenderness and marked right adnexal tenderness. The uterus was found to be bulky and mobile. No cervical discharge was noted. The findings were highly suggestive of a ruptured ectopic pregnancy.

Laboratory Investigations:

Initial laboratory investigations were immediately sent to guide management. Hemoglobin was noted to be 9.0 g/dL, indicating moderate anemia likely secondary to acute blood loss. The TLC was 15,430/mm^3, platelet count of 1.35 lakhs/mm^3. Renal function tests revealed serum creatinine of 0.9 mg/dL and urea of 35 mg/dL, both within normal range. Electrolyte levels including sodium and potassium were unremarkable. Liver function tests showed mildly elevated SGOT/SGPT, though not critically raised. Coagulation profile showed APTT and PT/INR within normal range. Her β-hCG level was markedly elevated at 226.6 mIU/mL, consistent with early pregnancy.

Ultrasonography (USG) Findings:
An urgent transvaginal ultrasonography (USG) was performed using a high-resolution endo-cavity probe. It revealed the following critical findings. No intrauterine gestational sac, confirming the absence of a normal pregnancy. Extra-uterine gestational sac in the right adnexa, surrounded by a mixed echogenic mass (likely blood clots). Hemoperitoneum: Approximately 160 cc of low echogenic fluid (blood) in Morrison's pouch. Decidual reaction: Healthy, but no yolk sac or fetal pole visualized. Based on these findings, a diagnosis of ruptured right-sided ovarian ectopic pregnancy with moderate hemoperitoneum was made.

Surgical Intervention:
Given the diagnosis and hemodynamic instability, an emergency exploratory laparotomy with right partial oophorectomy was performed under general anesthesia. The surgical findings were right ovarian rupture and hemoperitoneum: Approximately 500 cc of blood was evacuated from the peritoneal cavity.

Postoperatively, patient responded well to surgery. Her hemoglobin levels stabilized after blood transfusion, and she was monitored for signs of infection or further bleeding. She was discharged in stable condition with instructions for follow-up to monitor her recovery and discuss future reproductive health options. The patient was discharged on the fifth postoperative day in stable condition with advice for follow-up after 7 days to monitor wound healing and assess for any delayed complications.

Fig 1.

Fig 2.

Fig 3.

Fig 4.

DISCUSSION:
This case of a ruptured ovarian ectopic pregnancy (OEP) in early gestation highlights the diagnostic and therapeutic challenges associated with this rare condition. OEP accounts for only 0.5–3% of all ectopic pregnancies[9], and its rupture in the first trimester is an even rarer occurrence, often leading to life-threatening hemorrhage[10]. Our patient, a 27-year-old multigravida with no known risk factors, presented with acute abdominal pain, hemoperitoneum, and hemodynamic instability—a presentation consistent with previous case reports[11]. The absence of intrauterine pregnancy on transvaginal ultrasound (TVS) and the presence of an adnexal mass with hemoperitoneum confirmed the diagnosis, aligning with established diagnostic criteria[12].

The diagnosis of OEP remains difficult due to its nonspecific clinical presentation, often mimicking tubal ectopic pregnancies, ruptured ovarian cysts, or appendicitis[13]. In our case, the patient's right adnexal mass and hemoperitoneum on TVS were key findings, similar to cases reported by Koo et al. (2017) [14], where ovarian pregnancies were frequently misdiagnosed as hemorrhagic cysts. The absence of a yolk sac or fetal pole in our case further complicated the diagnosis, as seen in other studies where definitive sonographic signs were often lackin[15]. Unlike tubal ectopics, which may show a "tubal ring" sign, OEP typically appears as a heterogeneous adnexal mass embedded within the ovarian parenchyma[16].

While pelvic inflammatory disease (PID), intrauterine device (IUD) use, and assisted reproductive techniques (ART) are known risk factors for ectopic pregnancies[17], our patient had none of these. This aligns with findings by Raziel et al. (2004) [18], where nearly 30% of OEP cases occurred in women without identifiable risk factors. The exact mechanism of ovarian implantation remains unclear, but theories suggest fertilization of a retained egg within the follicle or implantation on the ovarian surface[19].

Given the hemodynamic instability in our case, emergency laparotomy with partial oophorectomy was performed, which is consistent with current guidelines recommending surgical intervention for ruptured OEPs[20]. Laparoscopic management, though preferred in stable patients, was not feasible here due to the significant hemoperitoneum (500 mL). This approach mirrors recommendations by Comstock et al. (2005) [21], who emphasized that hemodynamically unstable patients benefit from rapid laparotomy.

A 2023 case series by Priya et al. [22] described similar challenges in rural settings, where delayed presentation led to higher rupture rates. Our patient's rapid deterioration underscores the need for early suspicion in women of reproductive age with acute abdominal pain, particularly in low-resource areas where diagnostic delays are common. Additionally, a 2024 study by Sharma et al. [23] highlighted that β-hCG levels in OEP are often lower than in tubal ectopics, which was observed in our case (226.6 mIU/mL), further complicating diagnosis.

CONCLUSION:
This case reinforces that OEP, though rare, must be considered in differential diagnoses of acute abdomen in early pregnancy. Improved diagnostic protocols, especially in rural settings, can reduce morbidity and mortality. Further research into non-surgical management options (e.g., methotrexate in select cases) may expand treatment avenues.

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