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Case Report

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A Case Report of a 20-Week Unruptured Tubal Ectopic Pregnancy: An Exceptionally Rare Clinical Entity

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Abstract

Background: Ectopic pregnancy remains one of the most common causes of pregnancy-related deaths in the first trimester. About 2.4% of ectopic pregnancies occur in the interstitial part of the fallopian tubes. Given the nonspecific symptoms and the increased risk of hemorrhage associated with interstitial pregnancy localization, early diagnosis is crucial and should be based not only on clinical presentation but also on adjunctive diagnostic modalities. Early diagnosis leads to better treatment-related outcomes. Tubal ectopic pregnancies rarely progress into the second trimester and are typically diagnosed during the first trimester.

Case Presentation: A 25-year-old primigravida at 20 weeks of gestation was initially diagnosed with a single live intrauterine pregnancy but presented with hypovolemic shock and was intraoperatively found to have an unruptured ectopic pregnancy. Postoperatively, the patient remained hemodynamically stable and was discharged on the fifth day. To date, the highest gestational age reported for a tubal ectopic pregnancy is 14 weeks.

Conclusion: Ectopic pregnancies should be diagnosed in the first trimester via expert ultrasound. In this case, delayed second-trimester ultrasound in a low-income patient led to missed diagnosis. Clinical judgment must guide antenatal care, and surgery should not be delayed despite an unidentified source of hemoperitoneum.

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Introduction

Pregnancy occurring outside the normal uterine cavity is termed ectopic pregnancy. Its estimated incidence in the general population is 1%–2% (1). Ruptured ectopic pregnancy is a potentially life-threatening condition and continues to be a major cause of maternal morbidity, mortality, and early pregnancy loss despite major advances in its early diagnosis and treatment (2). The highest gestational age reported till now in tubal ectopic pregnancy is 14 weeks (3).

Case Presentation

A 25-year-old primigravida at 20 weeks of gestation was referred in July 2024 to Government Medical College and Hospital, Nagpur, Maharashtra, India, with complaints of severe epigastric pain, burning micturition, intermittent high-grade fever, palpitations, and multiple episodes of vomiting for the past 2-3 days. The patient was admitted to the ICU with hypovolemic shock. On admission, the patient was in moderate condition, with a blood pressure of 90/50 *mmHg*, an SpO_2 of 94% on room air, and pallor. Abdominal examination revealed guarding, tenderness, and rigidity. On abdominal examination, the uterus was palpable, corresponding to approximately 20 weeks of gestational age, with detectable fetal heart tones. Speculum examination showed a healthy cervix and vagina, a closed cervical os, and no vaginal bleeding. An external ultrasound examination re-

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vealed a single live intrauterine fetus corresponding to 19.4 weeks of gestation, with a normal anomaly scan. The provisional diagnosis was acute gastroenteritis complicated by hypovolemic shock and sepsis in a primigravida at 20 weeks' gestation. Ultrasonography demonstrated moderate hemoperitoneum, heterogeneous hepatic echotexture, and splenic parenchymal abnormalities. Ultrasound-guided abdominal paracentesis yielded hemorrhagic fluid. Admission laboratory results revealed anemia (hemoglobin 7 *g/dL*), leukocytosis (WBC 18,000/mm^3), and thrombocytopenia (platelets 220×10^3/mm^3).

Other routine investigations were within normal limit. Over 5–6 *hr*, the patient's abdominal distension, tenderness, and guarding worsened, accompanied by a drop in hemoglobin from 8 *g/dL* to 5.6 *g/dL*. Immediately, one unit of packed cell volume (PCV) was transfused. Although the source of bleeding was unidentified and the patient's clinical condition was deteriorating, an urgent decision was made to perform an exploratory laparotomy by the obstetric team with intraoperative assistance from a surgeon. One unit of PCV and two units of fresh frozen plasma (FFP) were transfused. Upon laparotomy, approximately one liter of hemoperitoneum was evacuated. An intact mass measuring approximately 20×25 *cm* was identified in the ampullary region of the left fallopian tube, which corresponded to the 20-week uterine size palpated during preoperative abdominal examination. The mass was exteriorized and diagnosed as a left-sided unruptured tubal ectopic pregnancy (ampullary region) (Figure 1).

The surface of the mass was intact but minimal oozing at multiple points was seen. A clamp was applied at the base, and the mass was removed.

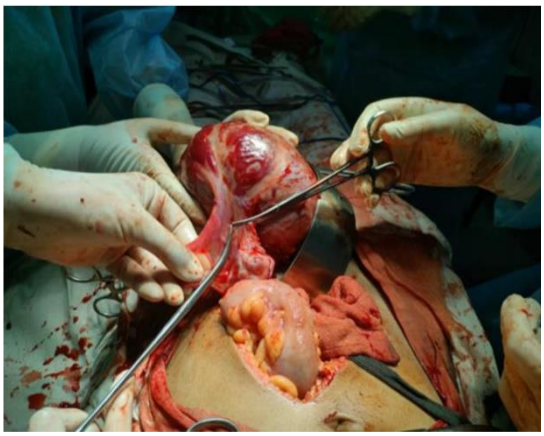

Figure 1. Intraoperative view of the tubal mass, clinically palpable and initially mistaken for a uterine pregnancy

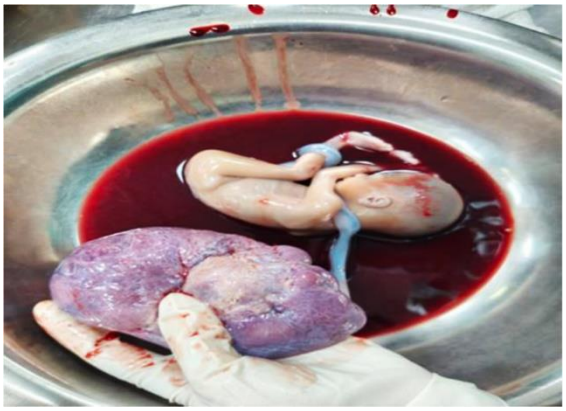

Figure 2. Cross-section of the excised tubal mass revealing a 419 *g* fetus with attached placenta

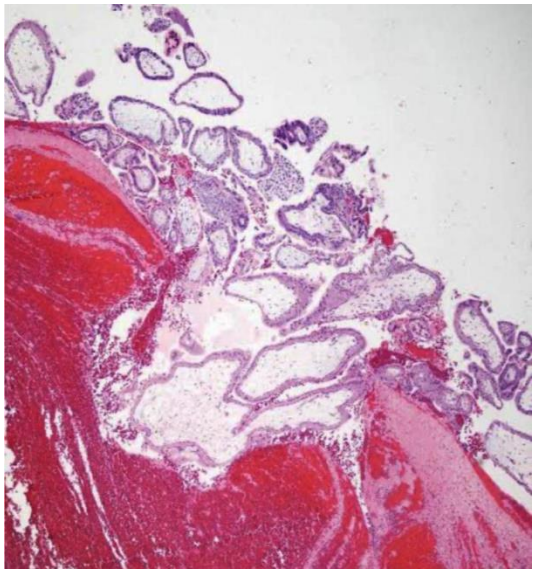

Figure 3. Histopathological section demonstrating chorionic villi consistent with ectopic pregnancy

No other sources of intra-abdominal bleeding were identified by the surgical team. Upon sectioning the mass, a fetus approximately 20 weeks of gestational age, with placenta was visualized (Figure 2) and sent for histopathological examination. The weight of fetus was found to be 419 grams. Histopathology report confirmed the diagnosis of tubal ectopic pregnancy (Figure 3).

Discussion

Ectopic pregnancy is a common cause of morbidity and mortality in women, with an incidence ranging from 10 to 39.5 *per* 1,000 deliveries (4, 5). The ampullary portion of the fallopian tube is the most common location. Bouyer et al. (6) in a

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10-year population-based study of 1,800 ectopic pregnancy cases, reported that 73% were located in the ampullary region, while only 4.5% were extratubal (ovarian and abdominal).

The mortality rate associated with ectopic pregnancy ranges from 2% and 2.5% (7). Ectopic implantation in the fallopian tube is the most common type and accounts for 90% of all ectopic pregnancies. The ampullary portion of the fallopian tube is the most common site of ectopic implantation. The pathology behind ectopic pregnancy in the fallopian tube is the impaired migration of the fertilized oocyte. Delayed transport of the fertilized oocyte in the fallopian tube may result in its implantation in the tubal mucosa prior to reaching the endometrial cavity. Diagnosis of an ectopic pregnancy can be made based on clinical history, serum hCG concentration, transvaginal ultrasonography, and sometimes serum progesterone measurement. Tubal ectopic pregnancy typically manifests during the first trimester with abdominal pain and light abnormal uterine bleeding; however, these nonspecific symptoms may mimic other early pregnancy complications. Patients presenting with these symptoms should undergo quantitative hCG blood testing to confirm or exclude pregnancy.

Cases of ectopic pregnancies reaching advanced gestational ages have been reported in locations other than the fallopian tube, which are more distensible to accommodate a developing fetus (8). However, literature documenting tubal ectopic pregnancies progressing to advanced gestation remains limited. In 2018, a 35-year-old woman presented with complaints of sudden suprapubic abdominal pain, vomiting, and vaginal spotting. The ultrasound revealed a left adnexal ectopic pregnancy with a crown-rump length of over 41 mm, which corresponded to 11 weeks of gestation. The patient underwent exploratory laparotomy and was discharged in stable condition on postoperative day four (9).

The largest reported case of a ruptured tubal pregnancy was documented by Kim et al. in 2019. The patient, a 39-year-old woman, presented with multiple episodes of fainting, abdominal pain, and vaginal bleeding. Her serum beta-human chorionic gonadotropin (β-hCG) level was 55,713 *mIU/ml*. Ultrasound imaging showed a right adnexal mass, and the biparietal diameter (BPD) of the fetus was 2.2 *cm*, corresponding to 13 weeks of pregnancy. Emergency laparoscopic surgery was performed to manage the condition (10).

The large reported case of a tubal ectopic pregnancy occurred at the 14th week of gestation. The patient's β-hCG level was 56,748 *mIU/ml*. Ultrasound measurements revealed a BPD of 2.47 *cm*, which corresponded to 14 weeks and 2 days of gestation, and a femur length (FL) of 1.41 *cm*, corresponding to 14 weeks and 1 day. The surgical pathology report confirmed the diagnosis of tubal ectopic pregnancy, as the fallopian tube contained chorionic villi, decidual reaction, and a gestational sac, all indicative of the ectopic nature of the pregnancy (2).

In this case, the diagnosis was missed on ultrasonography; however, heterotopic pregnancy should always be considered and excluded when clinically suspected. Transvaginal sonography demonstrated a specificity of 99.9% for diagnosing tubal ectopic pregnancies in the first trimester; therefore, human error is likely to have contributed to the misdiagnosis in this case.

Serial measurement of β-hCG levels is the most sensitive method for evaluating fetal viability but lacks specificity for diagnosing ectopic pregnancy. Transvaginal ultrasonography (TVUS) is the gold standard imaging technique for the early identification and localization of ectopic gestation. Local and systemic methotrexate administration is the most widely used method for the treatment of interstitial pregnancies in young, hemodynamically stable patients in the absence of ectopic mass rupture. Some researchers advocate for local injection of methotrexate or potassium chloride into the gestational sac, which requires special equipment and trained personnel. Laparoscopic surgery remains the standard surgical treatment for interstitial pregnancies in hemodynamically stable patients.

Laparotomy may be needed in the case of massive intra-abdominal hemorrhage. The clinical case presented in this article was characterized by diagnostic difficulties, as the patient exhibited symptoms and signs mimicking acute gastroenteritis at 20 weeks of gestation. In the present case, the patient exhibited preoperative hemodynamic instability associated with hemoperitoneum, while the exact source of hemorrhage remained unidentified. Regarding this case, a surgical cause of hemoperitoneum or an obstetric cause, such as ovarian cyst rupture, uterine rupture, or heterotopic pregnancy with hemoperitoneum, was suspected. Upon exploration, an unruptured tubal pregnancy containing a 20-week fetus was identified.

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The mass was removed en bloc, and upon opening the sac after removal, a non-viable fetus was observed. Although the diagnosis was missed on ultrasonography, clinical vigilance remained essential to ensure optimal outcome. The case was exceptionally rare, as the tubal pregnancy progressed to 20 weeks of gestation without rupture. The fetus was initially assessed as viable on operative ultrasonography; however, no signs of fetal viability were noted after removal. The patient was subsequently discharged in stable condition.

Conclusion

Although ectopic pregnancies should be diagnosed during the first trimester through expert ultrasonography, in this case, the patient belonging to a lower socioeconomic background, underwent ultrasonography only in the second trimester, resulting in a missed diagnosis until 20 weeks of pregnancy. Clinical judgement should always guide the management of antenatal patients and surgical exploration should not be delayed solely due to the unidentified source of hemoperitoneum.

Conflict of Interest

Authors declare no conflict of interest.

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