West Texas Journal *of* Medicine

Case Report

Management of an Unruptured Distal Tubal Ectopic Pregnancy with Ovarian Involvement in West Texas via Laparoscopic Salpingo-Oophorectomy

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Abstract

Background: Ovarian ectopic pregnancies are rare and account for less than 3% of all ectopic pregnancies. They pose significant diagnostic and management challenges due to their insidious presentation.
Case Presentation: We present the case of a 31-year-old gravida 2, para 0 female with pelvic pain, vaginal bleeding, and a positive pregnancy test at 8 weeks gestation. Transvaginal ultrasound revealed a right distal tubal ectopic pregnancy with ovarian involvement and fetal cardiac activity. The patient underwent successful laparoscopic right salpingo-oophorectomy and chromotubation with complete resolution of symptoms.
Conclusion: This case highlights the importance of early recognition and surgical management of ovarian ectopic pregnancies, as well as the utility of minimally invasive techniques for optimal outcomes.

Keywords: Ovarian ectopic pregnancy, distal tubal ectopic pregnancy, laparoscopy, salpingo-oophorectomy, gynecologic emergencies.

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Introduction

Ectopic pregnancies occur when a fertilized ovum implants outside the uterine cavity, most commonly in the fallopian tubes. Ovarian ectopic pregnancies are exceedingly rare, accounting for 0.5% to 3% of ectopic pregnancies, and are associated with significant diagnostic and management challenges.[1-3] Ovarian ectopic pregnancy accounts for about 10% of deaths related to pregnancy and requires a low threshold for clinical investigation, intervention, and treatment.[5] Due to the mild and non-specific presentation of ovarian ectopic pregnancies compared to tubal ectopic pregnancies, there is a greater likelihood that cases present later in gestation.[6] Diagnosis typically relies on clinical presentation and imaging, with transvaginal ultrasound being the most effective modality. In 2022, the Texas Maternal Mortality and Morbidity Review Committee identified obstetric hemorrhage as the leading cause of pregnancy-related deaths in the state, with ruptured ectopic pregnancies being a significant contributor.[4] Prompt surgical management is often required to prevent complications such as

rupture and hemorrhage.[1] This report discusses a case of right distal tubal ectopic pregnancy with ovarian involvement successfully managed via laparoscopic salpingo-oophorectomy.

Case Presentation

History of Present Illness:
A 31-year-old gravida 2, para 0 female presented to the emergency department with dull, constant pelvic pain radiating within the pelvis and vaginal spotting for one day. The patient endorsed accompanying nausea and diarrhea.

History:
- **Past Medical History:** None
- **Past Surgical History:** None
- **Obstetric History:**
  - G2P0100
  - History of a preterm delivery at 24 weeks gestation, fetal death
- **Gynecologic History:**
  - Denies history of abnormal Pap smears
  - Denies history of STI/STD
- **Social History:** Denies tobacco, alcohol, and recreational drug use
- **Medications:** Prenatal vitamins
- **Allergies:** NKDA

Physical Exam:
- **Vital Signs:** Temperature 36.8 C, HR 85 bpm, RR 18 rpm, BP 124/60 mmHg, SpO_2 100%, BMI 27.46 kg/m^2; vitals are afebrile, normotensive and stable.
- **Gastrointestinal:** Moderate tenderness in the right lower quadrant on abdominal palpation; no rebound tenderness or significant guarding.
- Mental status, HEENT, respiratory, cardiovascular, neurologic, dermatologic, MSK examinations unremarkable.

Diagnostic Workup:
- **Laboratory Findings:** Elevated quantitative β-hCG of 50,198 mIU/mL, hemoglobin of 10.2 g/dL, hematocrit of 31%, and mild leukocytosis (WBC count of 12.0 x10^3/μL). Patient's blood type is O+.
- **Imaging:** Transvaginal ultrasound confirmed the absence of an intrauterine pregnancy and identified a right adnexal mass (5.9 x 3.4 cm) containing a gestational sac with a crown-rump length of 1.9 cm and fetal cardiac activity (171 bpm). Free fluid was noted in the pelvis, raising concern for potential rupture (Figure 1).
- **Tissue Pathology:** Right fallopian tube and ovary, salpingectomy: tubal ectopic pregnancy with features consistent with rupture, unremarkable fetal tissue present, negative for hydatidiform changes or evidence of malignancy.

Management and Treatment:
The patient was taken to the operating room for laparoscopic management. Intraoperative findings included a large right ectopic pregnancy in the distal tube involving a portion of the ovary and moderate hemoperitoneum. The right ovary, fallopian tube, and ectopic pregnancy were removed via laparoscopic salpingo-oophorectomy. Chromotubation confirmed patency of the left fallopian tube and hemoperitoneum was evacuated. Estimated blood loss was 300 mL, and there were no intraoperative complications (Figure 2).

Outcome and Follow-Up:
Postoperatively, the patient recovered uneventfully and met all postoperative milestones. She was discharged the following day with instructions to follow up with her obstetrician in one week. The excised specimen further confirmed the diagnosis of a distal tubal ectopic pregnancy with ovarian involvement and was sent to pathology to check for chromosomal abnormalities. Pathological examination confirmed a distal tubal ectopic pregnancy with ovarian involvement. Chromosomal analysis of the fetal tissue revealed no abnormalities, ruling out gestational trophoblastic disease or other fetal chromosomal anomalies.

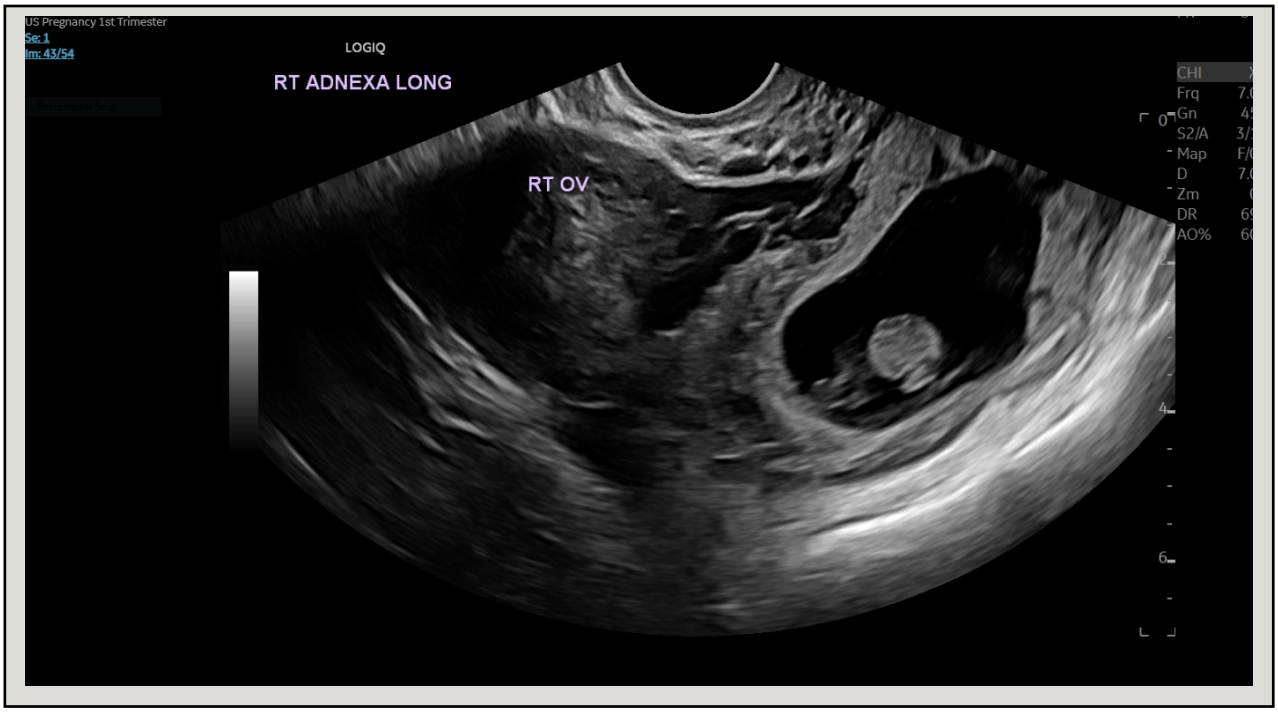

Figure 1. Transvaginal ultrasound showing a right adnexal ectopic pregnancy adjacent to the right ovarian stroma. *Photo taken by Northwest Texas Hospital, Amarillo, Texas.*

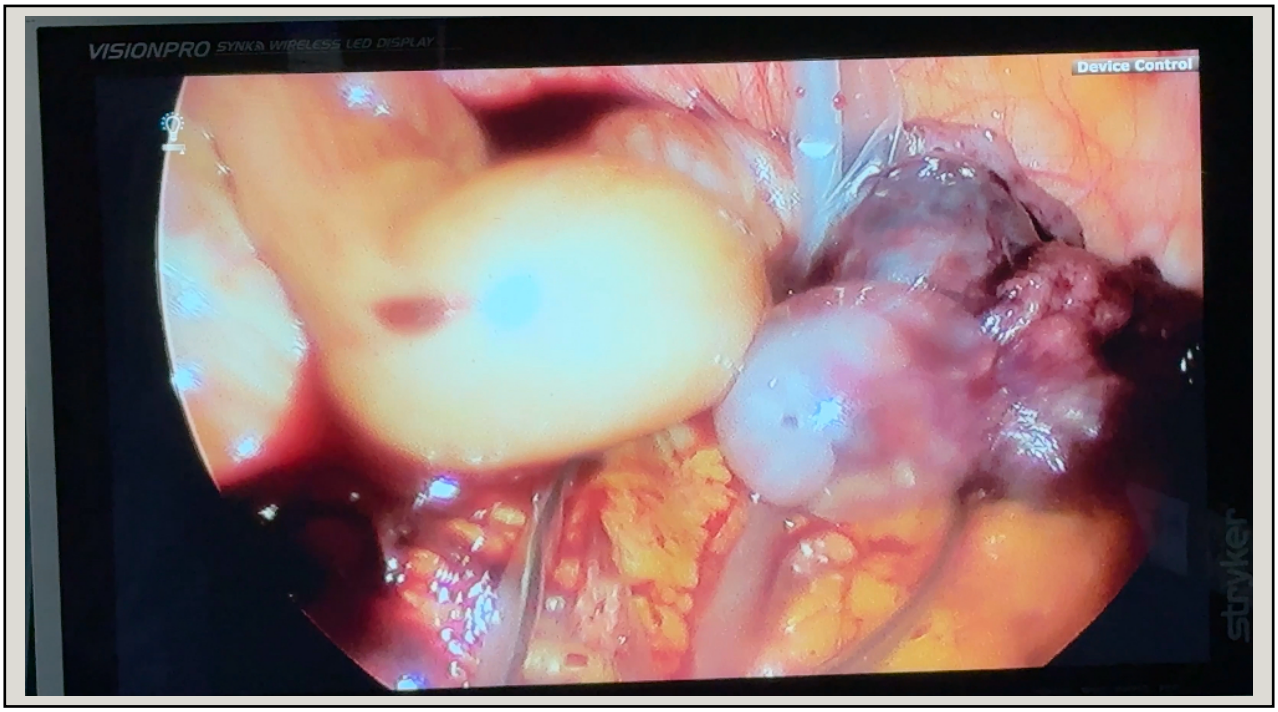

Figure 2. Laparoscopic view showing the ectopic pregnancy within the right ovary. The gestational sac is prominently visible with surrounding hemorrhage, consistent with hemoperitoneum. *Photo taken by Joey Holzer, MSIII.*

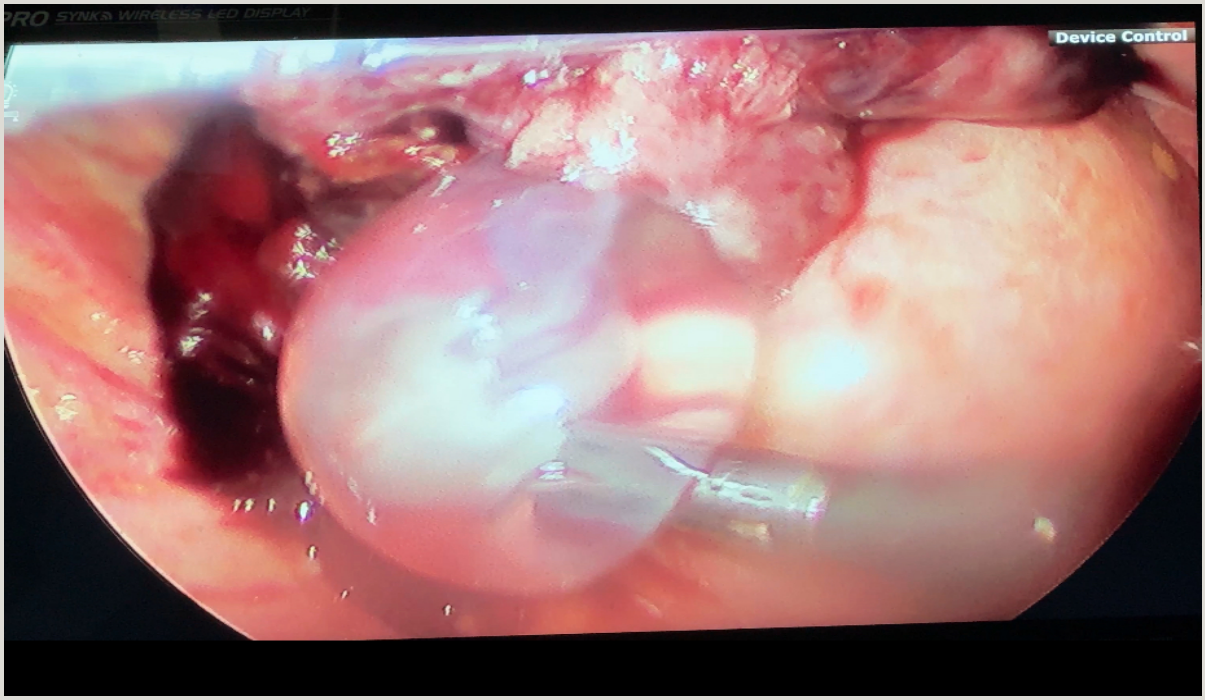

Figure 3. Laparoscopic view of the ectopic pregnancy and hemoperitoneum, with visualization of surrounding structures. The gestational sac is clearly identifiable within the right ovary, highlighting the extent of the hemorrhage. *Photo taken by Joey Holzer, MSIII.*

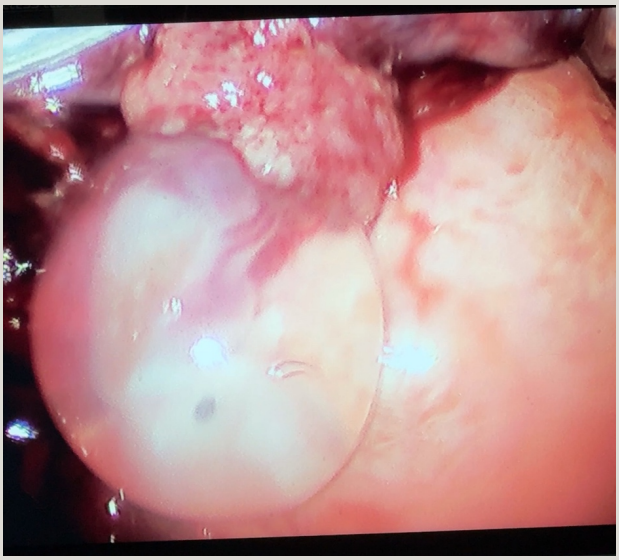

Figure 4. Close-up laparoscopic view of the ectopic pregnancy within the right ovary. The gestational sac is seen intact, further confirming the diagnosis of an ovarian ectopic pregnancy. *Photo taken by Joey Holzer, MSIII.*

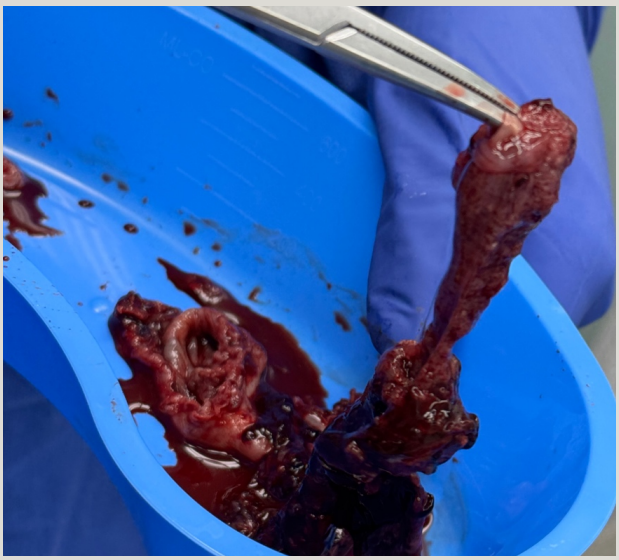

Figure 5. Postoperative specimen showing the right ovary, fallopian tube, and ectopic pregnancy after laparoscopic salpingo-oophorectomy. The ruptured sac is visible along with the surrounding hemorrhagic tissue. *Photo taken by Joey Holzer, MSIII.*

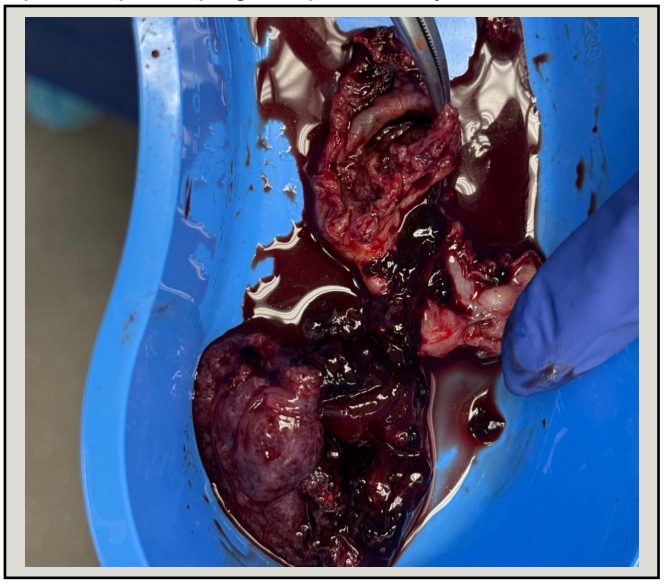

Figure 6. Close-up of the excised right ovary and ectopic pregnancy, demonstrating the gestational sac (in hemostats) and surrounding hemorrhagic tissue in detail. *Photo taken by Joey Holzer, MSIII.*

Discussion

Ovarian ectopic pregnancies are rare but pose significant risks, including rupture and hemorrhage with a significantly higher risk of hemoperitoneum than with tubal ectopic pregnancy.[7] The rarity and atypical presentation of ovarian ectopic pregnancies often delays diagnosis, increasing maternal morbidity and mortality. Early recognition of this condition through transvaginal ultrasound, which can detect an adnexal mass separate from the ovary and uterus, is essential.[1,2]

Other reported cases of ovarian ectopic pregnancy similarly present later in gestation than a tubal ectopic pregnancy (6-8 weeks for tubal location vs. ≥8 weeks for non-tubal location) with a chief complaint of mild abdominal pain (this patient rated her pain as a 3/10 on presentation) in a young female.[8] This case differs from the usual presentation in that there is no history of inflammatory tubal disease, no history of sexually transmitted infections, no history of assisted reproductive technology or use of ovulation induction agents, and no history of intrauterine device use.

Surgical management remains the treatment of choice, with laparoscopy offering several advantages, including reduced recovery time, minimal scarring, and lower postoperative morbidity. In this case, the laparoscopic approach allowed for definitive treatment and preservation of fertility via chromotubation to confirm left tubal patency. Similar cases in the literature emphasize the importance of early intervention and individualized surgical planning.[1-3]

Conclusion

This case highlights the critical role of early diagnosis and surgical management in ovarian ectopic pregnancies. Laparoscopic techniques offer a safe and effective approach, particularly in hemodynamically stable patients, allowing for optimal outcomes and fertility preservation.

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