Clinical Case

Pregnancy of Unknown Location Following Exploratory Laparotomy for Complex Ectopic Pregnancy: A Diagnostic Dilemma

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ABSTRACT

Introduction: To present a complex case initially managed as a suspected ruptured ectopic pregnancy but characterized by highly contradictory intraoperative findings, leading to post-surgical biochemical failure (Pregnancy of Unknown Location) which required successful secondary medical intervention.

Case Summary: A 24-year-old female, G3 P1L1 A1, presented with acute abdominal pain and a positive Urine Pregnancy Test (UPT). Initial ultrasound suggested a ruptured right tubal ectopic pregnancy with free fluid. The patient underwent an Exploratory Laparotomy. Crucially, intraoperative findings demonstrated no fresh or old hemoperitoneum, contradicting the ruptured diagnosis. Post-operatively, serum beta-hCG levels continued to rise, peaking at *1203 mIU/mL* (up from 42.17 mIU/mL pre-op), confirming the presence of Pregnancy of Unknown Location. The patient was successfully treated with intravenous Methotrexate (MTX). Follow-up imaging (MRI) was inconclusive for a definitive ongoing ectopic but was suggestive of a right adnexal aborted gestational sac.

Conclusion: This case highlights the limitations of ultrasound in definitively diagnosing rupture and underscores the necessity of managing persistent, rising beta-hCG after surgical exploration as "Pregnancy of Unknown Location (PUL)", which mandates definitive medical therapy.

Key words: Ectopic pregnancy, Pregnancy of unknown location, Methotrexate, Exploratory Laparotomy

INTRODUCTION

Ectopic pregnancy (ECTOPIC PREGNANCY), defined as the implantation of a fertilized ovum outside the uterine cavity, Ectopic Pregnancy presents a significant health risk. While accounting for approximately 1-2% of all pregnancies in developed countries,[1] it tragically remains the leading cause of first-trimester maternal mortality, contributing to nearly 4-10% of all pregnancy-related deaths worldwide.[2]

A prompt and accurate diagnosis of ECTOPIC PREGNANCY is paramount, relying heavily on a combination of serum human chorionic gonadotropin (beta-hCG) levels and transvaginal ultrasound (TVUS) findings. Management is typically dictated by clinical status, with urgent surgical intervention mandatory for "Ruptured ectopic pregnancy" which presents with hemodynamic instability or clear evidence of hemoperitoneum. In cases where the pregnancy location is unknown (PUL) or the ectopic is non-acute, conservative medical management is often favoured.

This case of Ectopic Pregnancy describes a highly atypical and diagnostically challenging scenario. The patient presented with classic symptoms and an ultrasound suggestive of a "Ruptured right tubal ectopic pregnancy. However, the subsequent Exploratory Laparotomy yielded a crucial, contradictory finding of neither fresh nor old hemoperitoneum. This lack of intra-abdominal bleeding, combined with a post-operative rise in beta-hCG, necessitated a rapid shift in diagnosis from an acute surgical case to one of Pregnancy of Unknown Location, thereby complicating the management pathway and requiring successful secondary medical therapy. This case serves as a critical example of diagnostic complexity where surgical exploration does not confirm the initial radiological suspicion.

CASE ECTOPIC PREGNANCY

Patient: xyz , 24-year-old female, G3 P1 L1A1 (Prev lscs).
Presentation: The patient presented to the emergency room (L.T.M.G. Hospital) with an acute onset of abdominal pain,

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vomiting, spotting per vaginum and amenorrhea for approximately 7.5 weeks with USG s/o Right ruptured tubal ectopic pregnancy with mild to moderate hemoperitoneum, culdocentesis attempted but couldn't be completed as patient was non cooperative.

Examination finding on admission.

General Condition: Fair
Afebrile
P: 114/ sec
BP:100/60 mmHg
CVS: S1S2 +
RS: Air entry bilateral equal
P/A: Soft

- Guarding present in lower abdomen

P/S: Cervix: Minimal bleeding seen

- Vagina: Healthy

P/V: Uterus: Bulky

- Pouch of Douglas fullness and tenderness present.

Ultrasound (Abdomen + Pelvis) s/o Ruptured Right tubal Ectopic pregnancy with hemoperitoneum

Figure 1: Intraoperative View of the Pelvis During Exploratory Laparotomy

Component	Finding/Observation	Diagnostic Implication
Initial β-hCG (27/11/25)	**42.17 mIU/mL**	Positive pregnancy status.
Negative History (Crucial)	**Absence of syncope, dizziness, hypovolemic shock, or significant vaginal bleeding.**	Challenged the likelihood of acute, life-threatening rupture despite abdominal pain.
Pre-op USG (28/11/25)	Suggested **Ruptured right tubal pregnancy** with an adnexal mass (1.4×1.5 cm) and echogenic free fluid in the pelvis.	Indicated urgent surgical management. **(Diagnosis later proved inaccurate)**
Procedure Performed	**Exploratory Laparotomy** (Exp. Lap-4 SA).	Performed due to high suspicion of rupture. **Crucial Detail:** No Salpingectomy or Oophorectomy was performed.
Intraoperative Finding (CRITICAL)	Yellow-colored Ascitic Fluid seen. **Explicitly NO fresh or old hemoperitoneum found.**	**Contradiction:** Vigorously challenged the pre-operative diagnosis of rupture. The lack of blood suggested a tubal abortion or non-hemorrhagic fluid source.

Post-operative Course and Biochemical Failure:

The patient's beta-hCG levels failed to drop and demonstrated a highly concerning post-operative rise, confirming persistence of trophoblastic tissue after the initial surgical intervention, leading to the diagnosis of Pregnancy of Unknown Location.[3]

- beta-hCG on 7/12/25: 1203 mIU/mL (PEAK)
- Definitive Management:

The patient was successfully treated with Methotrexate (MTX) for the persistent, rising beta-hCG. Patient received dose of 60mg/m2 .

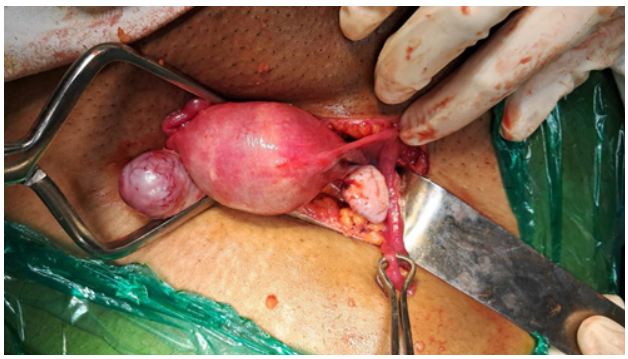

Figure 2: Serial Serum \beta-hCG Monitoring and Biochemical Course

Date	β-hCG Level (mIU/mL)	Clinical Interpretation
27/11/25	42.17	Admission / Pre-operative baseline.
02/12/25	165.49	**Post-Op Rise: Paradoxical rise indicating ectopic trophoblastic tissue.**
07/12/25	1203.00	Diagnostic Peak: Confirmation of persistent trophoblast.
10/12/25	1003.60	Post-Methotrexate (MTX) initial monitoring.
13/12/25	520.33	Response to medical therapy (approx. 50% drop).
17/12/25	266.00	Continued biochemical decline.
21/12/25	124.00	Biochemical resolution: Near-complete clearance.

Figure 3: Follow-up MRI of the Right Adnexa

Follow-up and Resolution:

USG (1/12/25) remained inconclusive, showing a small adnexal lesion but no clear G-sac.

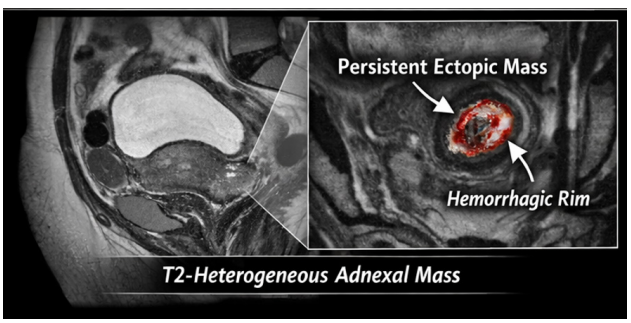

Figure 4: Pre-operative Ultrasound Assessment of the Pouch of Douglas

The MRI subsequently revealed finding of small cystic lesion measuring 1.31.2 cm in right adnexa, and is seen abutting the right ovary likely suggestive of Right Adnexal Aborted Ectopic G-sac or Haemorrhagic follicle with minimal endometrial haemorrhage.

Tumour markers CA-125 mildly raised (118 U/ml), CA 15-3, CA19-9, AFP, CEA were within normal limits.

Beta-hCG on 13/12/25: 520.33 mIU/mL, confirming the success of Methotrexate in achieving biochemical resolution.

DISCUSSION

This case of ectopic pregnancy presents a critical diagnostic dilemma in obstetrics. The initial presentation and Ultrasound findings suggested a life-threatening ruptured ectopic, leading to the Exploratory Laparotomy.

However, the definitive operative finding of no hemoperitoneum invalidated the pre-operative diagnosis of acute rupture.

The core of the case rests on the post-operative course. The sharp rise in beta-hCG (peaking at 1203 mIU/mL) following the surgery confirmed that viable trophoblastic tissue persisted. This condition is termed Pregnancy of Unknown Location and occurs when the ectopic tissue is not fully cleared, often complicating conservative surgery (though in this case, only an exploratory laparotomy was performed before the rise).

1. Surgical vs. Medical Management: The patient's clinical status shifted from a surgical emergency to a medically managed condition. The Exploratory Laparotomy served only a diagnostic role by ruling out a hemoperitoneum. The definitive treatment required was Methotrexate,[4] underscoring the vital role of biochemical surveillance in post-surgical care for ECTOPIC PREGNANCY.
2. Imaging Limitations: The initial USG's suggestion of a ruptured ectopic with hemoperitoneum was incorrect. The presence of non-hemorrhagic free fluid or minor tubal abortion can mimic rupture, leading to potential overtreatment.
3. Final Aetiology: The MRI, suggestive of an aborted gestational sac and minimal endometrial haemorrhage, aligns with a final picture of a spontaneously resolving or non-acute ectopic/tubal abortion, the process of which was interrupted and complicated by the Pregnancy of Unknown Location.

CONCLUSION

The case illustrates the potential for diagnostic complexity and ectopic pregnancy in early pregnancy complications. A pre-operative diagnosis of ruptured ectopic pregnancy must be confirmed by active bleeding or hemoperitoneum at surgery. In this instance, the Exploratory Laparotomy's finding of no blood, combined with the subsequent rising beta-hCG, led to the definitive diagnosis of Pregnancy of Unknown Location. This condition was successfully resolved with Methotrexate, validating the medical approach as the definitive treatment for this surgically unresolved complication.

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REFERENCES

1. American College of Obstetricians and Gynecologists. ACOG practice bulletin no. 193: tubal ectopic pregnancy. Obstet Gynecol. 2018;131(3):e65-77.
2. World Health Organization. Trends in maternal mortality: 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: WHO; 2019.
3. Barnhart KT, Dunsmoor-Su R, Coutifaris C. Effect of serum beta-hCG on the diagnosis of ectopic pregnancy and clinical outcome. Obstet Gynecol. 1999;94(5 Pt 1):712-7.
4. Practice Committee of the American Society for Reproductive Medicine. Medical management of ectopic pregnancy. Fertil Steril. 2021;115(5):1116-26.