# EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE

BROWARD HEALTH
Care Warriors



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| Vol 4 | Issue 46


## Ectopic Pregnancy

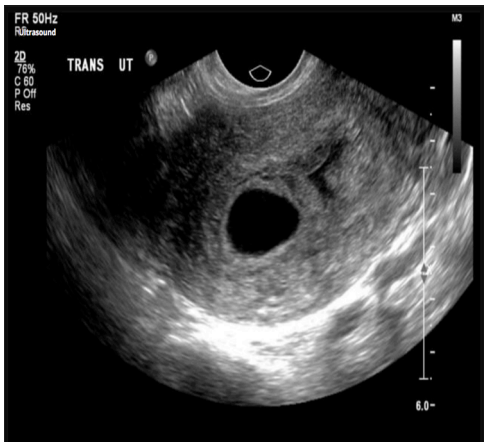
A 21-year-old G1 P1 female presents to the ED with right lower quadrant abdominal pain for three days. The pain came on gradually and is crampy in nature at a 5 out of 10. She admits to nausea with one episode of non-bilious, non-bloody vomiting. She denies fever, chills, diarrhea, constipation, chest pain, SOB, breast tenderness, vaginal discharge, or vaginal bleeding. She thinks her last menstrual period was 32 days ago. On physical exam, the patient's abdomen is soft without rebound or guarding. She has mild tenderness in her right pelvic region. A serum pregnancy test is positive. The patient's hCG is 5114mIU/mL. A transvaginal ultrasound shows a 5 week gestational sac with no fetal pole or yolk sac. The radiologist advises that ectopic pregnancy cannot be ruled out. What is the next step in management?

**A. Immediate surgical consultation**

**B. Begin Methotrexate therapy**

**C. Bring the patient back for repeat hCG measurement and ultrasound in 24-48 hours**

**D. Bring the patient back for repeat hCG measurement and ultrasound in 48-72 hours**




Radiopaedia

**Ultrasound image of a gestational sac without fetal pole.**

*EM Case of the Week is a weekly "pop quiz" for ED staff.*

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.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The correct answer is **D.** Bring the patient back for repeat hCG measurement and ultrasound in 48 hours.

There is much variability in the hCG levels in individual pregnant women that a single measurement alone cannot diagnose a viable intrauterine pregnancy. It is recommended to repeat the hCG every 48-72hours. The serum hCG should rise by around 66% in 48 hours. An hCG that does not rise appropriately is indicative of an ectopic or nonviable pregnancy.
An ultrasound showing only a possible gestational sac may either be a sign of an early IUP or a pseudosac from an ectopic pregnancy.

**Introduction**

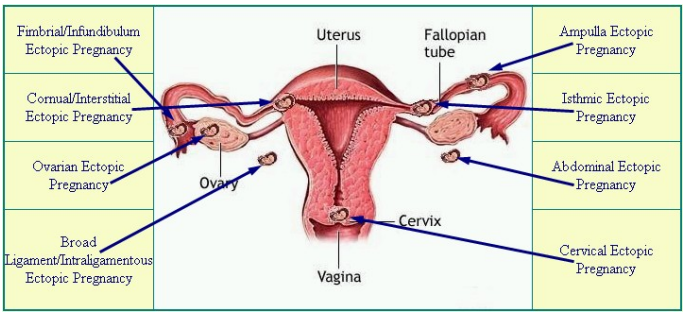
An ectopic pregnancy is a pregnancy that occurs outside of the uterus. The most common site for ectopic pregnancy is in the fallopian tube, at around 84%. Other possible sites are abdominal, intramural, cervical, interstitial, and ovarian. Ectopic pregnancies are never viable pregnancies. They are also at risk of rupturing which can leading to a life threatening hemorrhage.

**Discussion**

All women of reproductive age should be considered pregnant until proven otherwise, and all pregnant women are at risk of ectopic pregnancy until proven otherwise.

The most common clinical manifestations of ectopic pregnancy are vaginal bleeding and abdominal pain. The abdominal pain is usually in the lower abdominal/pelvic region. It may be localized to one side or diffuse. The vaginal bleeding varies in volume and consistency with no specific type of bleed being pathognomonic for ectopic pregnancy.

Steps for evaluation: 1. Confirm that the patient is pregnant. 2. Evaluate the patient for hemodynamic instability. 3. Determine whether the pregnancy is intrauterine or ectopic. 4. Determine the site of the ectopic pregnancy and check for rupture.




**Ectopicpregnancyfoundation.org**

**Treatment**

Once an ectopic pregnancy has been diagnosed there are two potential treatment routes: medical and surgical.

Surgical intervention is indicated if the patient is hemodynamically unstable, if there are signs and symptoms of impending on ongoing rupture, or if there is a need for a concurrent surgical procedure such as sterilization.

The patient is also a surgical candidate if the hCG is >5000mIU/mL, there is cardiac activity on TVUS, or if the patient has a contraindication to methotrexate therapy.

Contraindications to methotrexate include: heterotopic pregnancy with coexisting viable intrauterine pregnancy, hypersensitivity to methotrexate, breastfeeding, clinically important laboratory abnormalities, and immunodeficiency.

Methotrexate treatment for ectopic pregnancy has been found to have comparable efficacy to laparoscopic salpingostomy and results in similar fertility outcomes according to randomized controlled trials.

Without treatment, the rate of tubal rupture is high with one study finding 18% of women out of 843 suffering rupture.

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April 2016 | Vol 3 | Issue 1

**Table 3. Success Rates of Methotrexate Therapy for Ectopic Pregnancy Based on Initial β-hCG Level**

| *Initial β-hCG level* | *Success rate (%)* |
|---|---|
| < 1,000 mIU per mL (1,000 IU per L) | 88 |
| 1,000 to 2,000 mIU per mL (1,000 to 2,000 IU per L) | 71 |
| 2,000 to 3,000 mIU per mL (2,000 to 3,000 IU per L) | 59 |
| 3,000 to 4,000 mIU per mL (3,000 to 4,000 IU per L) | 50 |
| > 4,000 mIU per mL (4,000 IU per L) | 42 |

*β-hCG = beta subunit of human chorionic gonadotropin.*

*Information from reference 26.*

The rate of recurrent ectopic pregnancy is 5-20% for the first ectopic and rises to >30% in women with two consecutive ectopic pregnancies.

Following treatment, medical or surgical, serial hCG levels are required weekly until the patient obtains an hCG level below 10mIU/mL. If the levels do not decline appropriately then a second or post surgical dose of methotrexate is required.

Patients with a previous history of ectopics are encouraged to be evaluated early in subsequent pregnancies

## Take Home Points

- The presence of an early gestational sac without a yolk sac or fetal pole may either represent an early IUP or an ectopic pregnancy. Follow up with HCG and TVUS in 48-72 hours
- Once ectopic pregnancy is confirmed management is either surgical or medical.
- If the patient is hemodynamically unstable and tubal rupture is suspected immediate surgical management is required.
- If the patient is a candidate, medical therapy has comparable efficacy to surgical treatment, without the surgical risks.
- Close follow up is required after treatment to ensure hCG levels fall


## ABOUT THE AUTHOR

This month's case was written by Rebecca Hunt. Rebecca is a 4th year medical student from NSU-COM. She did her emergency medicine rotation at Broward Health North in January 2018. Rebecca plans on pursuing a career in Internal medicine with a specialization in Nephrology after graduation.

## REFERENCES

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