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# Ruptured ectopic pregnancy with a negative urine pregnancy test

Mallory Hughes, MD, Andrew Lupo, and Adrienne Browning, MD

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Ectopic pregnancy is commonly seen as a differential diagnosis of first-trimester vaginal bleeding. Often the diagnosis is made based on a combination of exam findings, transvaginal ultrasound, and a positive pregnancy test. Our case describes a patient with a history of ectopic pregnancy treated with methotrexate and serial human chorionic gonadotropin measurements that were decreasing appropriately. At the time of evaluation, her urine pregnancy test was negative; however, she was confirmed to have a ruptured tubal ectopic pregnancy. This case highlights the variable presentation of ectopic pregnancies and the importance of combining exam findings with ultrasound and laboratory results.

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**R**uptured ectopic pregnancies are gynecologic emergencies that require prompt surgical evaluation. Diagnosis of an ectopic pregnancy includes history and exam findings, ultrasound evidence, and an elevated beta-human chorionic gonadotropin (hCG) level. This case of a ruptured ectopic pregnancy without an elevated beta-hCG is presented to emphasize the importance of clinical judgment in acute gynecologic settings.

## CASE DESCRIPTION

A 25-year-old gravida 2 para 0 female with a history of ectopic pregnancy presented to the emergency department with sharp, right lower abdominal pain for 24 hours associated with near syncope. Three weeks earlier she was diagnosed with possible ectopic pregnancy. Due to an inappropriate rise in hCG, she had been given methotrexate. During the 2 weeks before admission, her hCG levels had gradually declined but had not reached zero. She had been sexually active after her diagnosis and took oral contraceptives, and her partner wore condoms.

On exam she was awake, alert, and in no distress. Her temperature was 98.6°F; heart rate, 99 beats per minute; blood pressure, 124/60 mm Hg; respiratory rate, 14 breaths per minute; and oxygen saturation, 99% on room air. There was tenderness to palpation in the left and right lower quadrants with voluntary guarding, but no distension or rebound tenderness. Bimanual examination revealed cervical motion tenderness and right adnexal and uterine tenderness. The uterus was small and

anteverted. The speculum examination revealed scant white discharge without bleeding. The cervical os was closed.

Laboratory studies showed a white blood cell count of 5.9 K/uL; hemoglobin, 10.9 g/dL; and hematocrit, 33.8%. A urine pregnancy test was negative, and a serum hCG of 15 mIU/mL was within normal limits. An ultrasound showed a normal uterus and a 4 × 2.6 × 4.6 cm heterogeneous right adnexal mass with free fluid (*Figure 1*). Ruptured ectopic pregnancy was suspected despite a negative pregnancy test.

The patient was taken to the operating room for a diagnostic laparoscopy. Exam under anesthesia disclosed a fluid wave on the abdomen. On entry to the abdomen, 500 mL of blood was found. The right fallopian tube was disrupted, and a clot with products of conception was extruding through the opening (*Figure 2*). A right salpingectomy was performed with excellent hemostasis. The ovaries and uterus were normal. The patient tolerated the procedure well and was discharged home on the day of surgery in stable condition. An ectopic pregnancy was confirmed by pathologic examination.

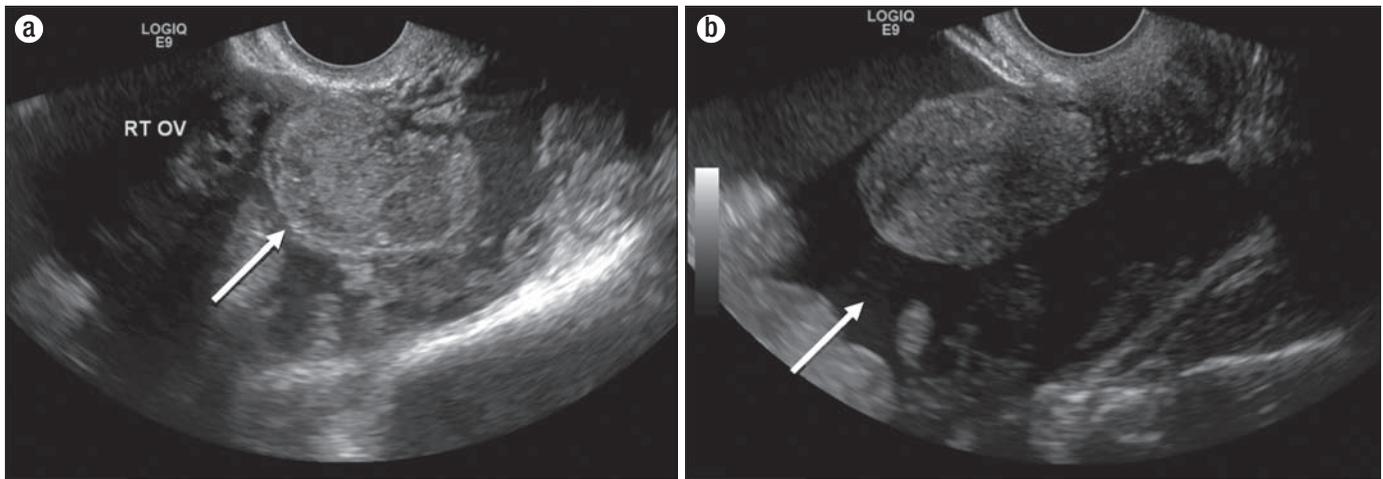
## DISCUSSION

Ectopic pregnancies in which the zygote is implanted outside the endometrial cavity comprise 2% of all pregnancies (1) and often present with vaginal bleeding or abdominal pain. The condition is diagnosed by a transvaginal ultrasound and elevated hCG, as recommended by the American Congress of Obstetricians and Gynecologists (2, 3). A combination of ultrasound and hCG has a 96% sensitivity and 97% specificity for ectopic pregnancy (1). Commonly in ectopic pregnancy, the hCG is elevated and increases abnormally, rising <53% in 48 hours (4). In the case described herein, however, ultrasound findings were concerning for hemoperitoneum. The patient's history of ectopic pregnancy and physical exam prompted surgical management despite a negative pregnancy test.

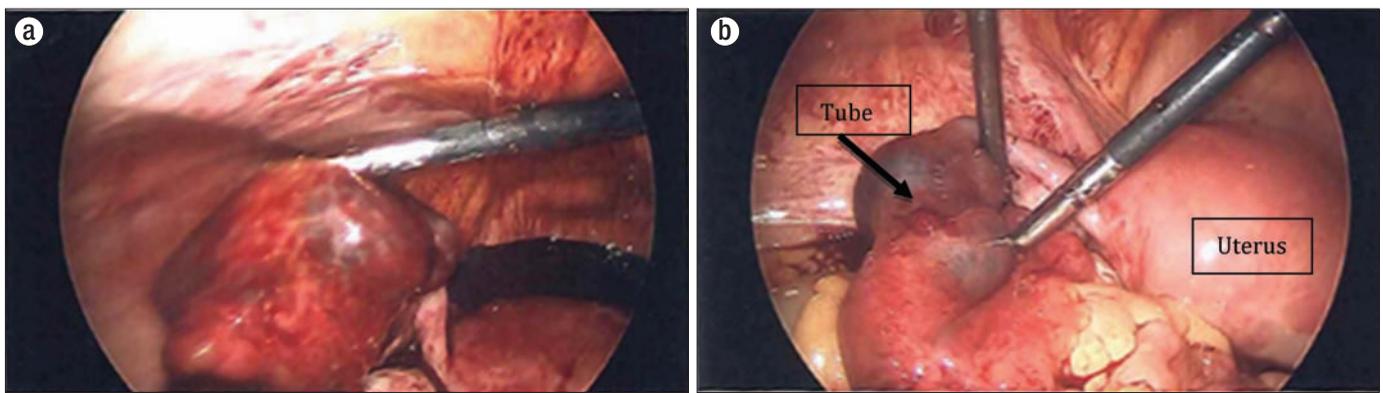
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From the Department of Obstetrics and Gynecology, Baylor University Medical Center at Dallas (Hughes, Browning), and Texas A&M Health Science Center College of Medicine (Lupo), Dallas, Texas.

**Corresponding author:** Adrienne Cones Browning, MD, Department of Obstetrics and Gynecology, Baylor University Medical Center at Dallas, 3500 Gaston Avenue, Hoblitzelle #215, Dallas, TX 75246 (e-mail: Adrienne.Browning@BSWHealth.org).



**Figure 1.** Ultrasound findings demonstrate (a) a complex adnexal mass (arrow) and (b) a large amount of free fluid (arrow) surrounding the uterus and ovary.



**Figure 2.** Dilated fallopian tube with ectopic pregnancy and hemorrhage within the tube.

Daniilidis et al described similar findings. Since 1987, eight cases of ruptured ectopic pregnancy have been reported with a negative urine pregnancy test. These patients were taken to the operating room for suspected hemoperitoneum (5). These cases and ours suggest that ectopic pregnancy should be considered even with a negative pregnancy test.

Our patient previously had methotrexate. Current recommendations for methotrexate therapy in ectopic pregnancy include a single or multidose regimen in patients who are hemodynamically stable and have no medical contraindications for methotrexate. Surveillance after methotrexate includes serial hCG levels. Treatment failure is defined as failure of hCG to decrease by at least 15% from day 4 to day 7 after treatment (2). Recommendations include following hCG weekly after 7 days until levels are negative. Our patient had regular follow-up with reported decreasing hCG levels, but they did not reach zero.

This highlights the importance of combining physical exam findings with hCG levels to ensure successful management of ectopic pregnancies.

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