

Answer

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Correct diagnosis is number 1: Ectopic pregnancy. The patient failed to return for her scheduled follow-up, but presented 4 days later with severe abdominal pain and vaginal bleeding. At this time she was restless and acutely distressed. Respiratory rate was 24 breaths/min, oxygen saturation 94% on room air, heart rate 80 beats/min, blood pressure 70 mm Hg by palpation and temperature 36°C. Her abdomen was rigid and diffusely tender, and a rectal exam was negative for blood. Her hemoglobin level was 86 g/L and a repeat quantitative beta-hCG was 262 mIU/ml. She was stabilized in the ED and transferred to the operating room, where laparotomy revealed a ruptured tubal gestation and 2 litres of intraperitoneal blood. Extensive adhesions related to pelvic inflammatory disease were also noted. A tuboplasty was performed and she recovered uneventfully.

Ectopic pregnancy (EP) is the leading cause of first trimester death and accounts for 10% of pregnancy-related mortality. Early diagnosis saves lives and preserves fertility, but the diagnosis is often difficult, since 15% of patients report normal menstruation, 50% have no predisposing risk factors and only half have a palpable mass on pelvic examination. Diag-

nosis, therefore, often depends on obstetrical ultrasound and quantitative beta-hCG measurements.

Transabdominal sonography is widely used but is unreliable if the beta-hCG is less than 6500 mIU/ml or the gestational age under 6 weeks. Early in pregnancy, transvaginal sonography (TVS) is superior — often being diagnostic without the need for quantitative beta-hCG levels. A recent meta-analysis reports that TVS is 84.4% sensitive and 98.9% specific for EP.¹

TVS findings should be interpreted in light of quantitative beta-hCG results. In patients who have symptoms compatible with EP, the combination of an empty uterus on TVS and a beta-hCG level greater than 1500 mIU/ml is said to be to 97% sensitive and 95% specific for ectopic pregnancy.² However, low serum beta-hCG levels may be falsely reassuring. A normal TVS (empty uterus with no pelvic pathology) combined with a beta-hCG less than 1500 mIU/ml is compatible with early viable intrauterine pregnancy (IUP), nonviable IUP or ectopic pregnancy,³ and 13% to 40% of patients in this group have an ectopic.⁴

Unstable patients and those with significant abdominal tenderness should have immediate obstetrical consultation, but in stable patients with normal TVS and low beta-hCG, it is reasonable to perform serial beta-hCGs. The mean doubling time for patients with normal IUP is 1.9 +/- 0.5 days (when initial beta-hCG level is less than

10,000 mIU/ml). Over a 48-hour observation time, serum beta-hCG will rise more than 66% in most normal pregnancies and less than 66% in most ectopic pregnancies. Declining beta-hCG values suggest a nonviable pregnancy but do not differentiate IUP from EP. In the case of a blighted IUP, levels tend to decline rapidly, with a half-life of 1.4 days.⁵ A more gradual decline suggests ectopic pregnancy, as was true in the case above.

Unfortunately, ruptured EP is not reliably predicted by exam, TVS or beta-hCG.

References

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