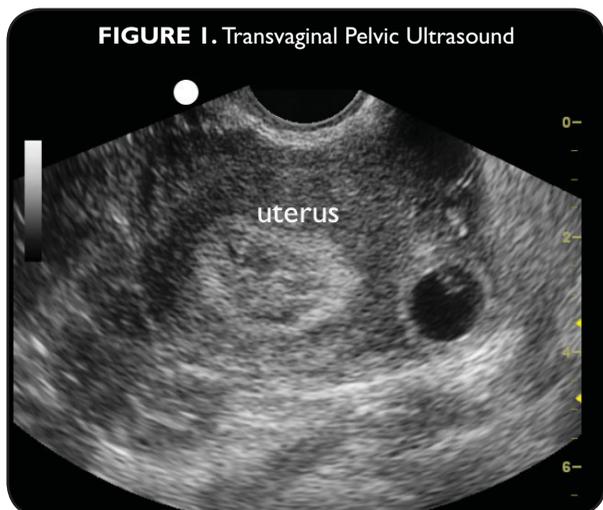


>> EMERGENCY ULTRASOUND

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PRESENTATION



>> A 32-year-old woman presents to your emergency department for evaluation of left lower quadrant abdominal pain of 1 day's duration. She is gravida 2 para 2 with her last menses occurring 6 weeks ago. After she missed her last period, she took a home pregnancy test, which was positive. She is currently awaiting a first appointment with her obstetrician for this pregnancy.

She describes the pain as dull and steady, radiating to her back. She denies associated vaginal bleeding. The pain came on gradually earlier in the day and did not respond to acetaminophen, prompting the visit to the emergency department.

The patient appears to be in mild distress and is sitting up in the stretcher, conversing with her husband. Her vital signs are blood pressure, 90/70 mm Hg; heart rate, 100 beats/min; temperature, 99°F. Palpation of her lower abdomen finds focal tenderness in the left lower quadrant and suprapubic regions. A urine pregnancy test is positive. Speculum exam shows that the cervical os is closed and there is no bleeding. Transvaginal ultrasound is performed and you obtain the image shown in Figure 1.

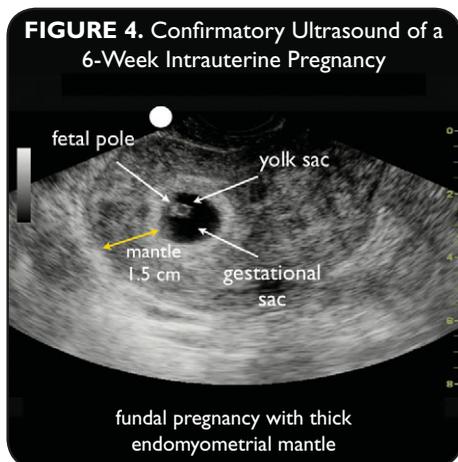
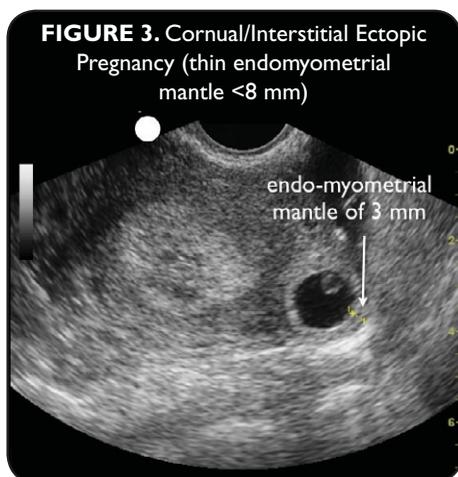
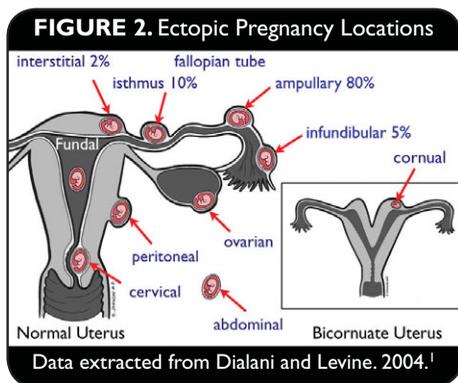
What is your diagnosis?

Turn page for conclusion >>



"Emergency Ultrasound" presents clinical cases involving the diagnostic use of bedside ultrasound in the emergency department. Cases can be explored in more detail on the Web in the SoundBytes section of CMEDownload.com, which can be accessed directly at www.sound-bytes.tv. To view a narrated movie of a similar case complete with ultrasound video, click the link entitled "A tale of two pregnancies (part 2)."

DIAGNOSIS AND DISCUSSION



>>Figure 1 demonstrates a cornual ectopic pregnancy in a patient with a partial bicornuate uterus. Clinicians typically think of the location of the embryo as outside the uterus in an ectopic pregnancy; however, there are variants involving implantation inside the uterus. Figure 2 shows ectopic pregnancies in both a normal and a bicornuate uterus.¹ The classic presentation of an ectopic pregnancy inside the uterus is a cornual ectopic pregnancy, where the presence of a bicornuate uterus allows implantation of the embryo in a position high in the cornual limb. Rarely, the same situation can occur in a patient with a normal uterus; this is termed *interstitial ectopic pregnancy*. In other rare cases, embryos can implant ectopically in the cervix. Because these aberrant implantations involve sites other than the classic fundal location of the uterus, the pregnancy will not have the ability to develop normally. In a normal fundal intrauterine pregnancy, the uterus can enlarge dramatically to accommodate the growth of the fetus. However, embryos implanted outside the fundal region, such as the cornual ectopic pregnancy in this case, will have their growth constricted and will inevitably rupture the uterus. Rupture typically occurs a bit later than with the classic ampullary tubal ectopic pregnancy, where growth is even more constrained. Because of the high degree of vascularity in ectopic pregnancy in general and proximity of the cornua to large blood vessels, rupture in a cornual pregnancy causes more hemorrhage than a tubal pregnancy.

As Figure 1 shows, the cornual or interstitial ectopic pregnancy is positioned in an eccentric location, off to the side of the uterus. With experience, clinicians can identify a bicornuate uterus by scanning through the uterus in a short-axis plane and noting the two cornual limbs rising toward the superior aspect of the uterus. In a cornual pregnancy (Figure 3), the embryo lies to the side in one of the cornual limbs with a thin (less than 8 mm) endomyometrial mantle (the distance from the gestational sac to the outer myometrial wall). In a normal fundal pregnancy the embryo is located directly in the middle of the uterus and has a wide (usually greater than 1 cm) endomyometrial mantle (Figure 4). While a short-axis view is best for measuring the mantle, clinicians should always examine in long-axis plane as well to fully investigate the width of the mantle.

In this case, because the embryo was implanted notably off to the side, the mantle measured only 3 mm, resulting in a diagnosis of ectopic pregnancy. Interestingly, a fetal heartbeat could be seen within the embryo. Ob-Gyn was consulted stat, and the patient was sent to the operating room.

REFERENCE

1. Dialani V, Levine D. Ectopic pregnancy: a review. *Ultrasound Q.* 2004;20(3):105-117.

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