

Interstitial Pregnancy: Pitfalls in Ultrasound Interpretation

Steven Zweig, MD
Columbia, Missouri

The manifestations of ectopic pregnancy are diverse, and its occurrence is life threatening. Consequently, this diagnosis must be considered in any woman of childbearing age presenting with acute abdominal pain with or without vaginal bleeding. Reported here is a woman with a ruptured interstitial pregnancy who two days before presentation had an ultrasound examination describing a normal intrauterine pregnancy.

CASE REPORT

A 26-year-old primigravida woman presented to the Family Practice Center with severe lower abdominal pain that developed abruptly on awakening. She had had a positive urine pregnancy test four weeks previously, and a pelvic examination three weeks previously had revealed a normally shaped, nontender, anteverted uterus approximately "six weeks" in size. Because the patient could not recall her last menstrual period, an ultrasonogram had been obtained two days prior to presentation. It displayed a single intrauterine pregnancy with normal fetal heart activity estimated to be nine weeks' gestation.

In addition to pain on presentation, the patient complained of chills, shortness of breath, and nausea, vomiting clear fluid several times at home and in the examining room. She denied diarrhea, melena, dysuria, vaginal discharge, or vaginal bleeding. The night before she had eaten a late dinner that was larger than usual and heavy in fried foods. She had a history of pelvic inflammatory disease four years previously, but no history of abdominal surgery.

Physical examination revealed a thin woman in moderate distress with a pulse of 76 beats/min, blood

pressure 130/70 mmHg, respiration 20/min, temperature 37.2°C. Her abdomen was flat with decreased bowel sounds and with diffuse abdominal tenderness most severe in the suprapubic region. There was no rebound tenderness. Vaginal and cervical tenderness was elicited upon placing the speculum. There was a thin white cervical discharge without bleeding. The cervix and uterus were tender, and the uterine size was consistent with a nine-week gestation. The adnexa and cul-de-sac were normal. The remainder of the examination was unremarkable. Hematocrit was 34 percent, white blood count $6.4 \times 10^3/\mu\text{L}$, with 48 polymorphonuclear leukocytes, 2 band forms, 43 lymphocytes, 6 monocytes, and 1 eosinophil. Urinalysis was normal.

The differential diagnosis at that time included appendicitis, gastroenteritis, ruptured ovarian cyst, and endometritis. She was admitted to the hospital for observation, and intravenous fluids were begun. Two hours after admission her abdominal pain persisted and her blood pressure dropped to 80/0 mmHg. A repeat complete blood count showed $10.3 \times 10^3/\mu\text{L}$ white blood cells with a left shift and a hematocrit of 26 percent. The patient was taken to the operating room conscious but in hemorrhagic shock. At surgery, the fallopian tubes and ovaries were normal but the uterus was ruptured and was bleeding from the posterior cornual area. The left fallopian tube and ovary were excised to control bleeding, and a wide cornual resection was performed. The patient recovered uneventfully and was discharged from the hospital.

DISCUSSION

Interstitial or cornual pregnancy occurs when the fertilized ovum implants in the tubal segment that penetrates the uterine wall. This unusual form of ectopic pregnancy accounts for approximately 2.5 percent of all cases.¹ It is particularly hazardous as the diagnosis is frequently delayed for two reasons. First, the uterus may appear appropriately enlarged without asymmetry and the tubes and ovaries will feel normal on examina-

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From the Department of Family and Community Medicine, University of Missouri-Columbia, School of Medicine, Columbia, Missouri. Requests for reprints should be addressed to Dr. Steven Zweig, Department of Family and Community Medicine, School of Medicine, University of Missouri-Columbia, Columbia, MO 65212.

tion. Second, because this segment of the uterus grows with the enlarging gestation, rupture usually occurs later than with the more common tubal pregnancy. With the accompanying growth in vasculature supplying the pregnancy, hemorrhage upon rupture is frequently much more severe. Women with an interstitial pregnancy are two to five times as likely to present in shock as are those with a tubal ectopic pregnancy.²

This patient presented with several characteristics of ectopic pregnancy. She was pregnant, had severe lower abdominal pain of abrupt onset, and had a history of pelvic inflammatory disease. She also had marked cervical tenderness on examination and signs of intestinal hypomotility. However, the ultrasound two days prior to presentation that identified a viable intrauterine pregnancy made an ectopic pregnancy unlikely.

Ultrasound in the diagnosis of ectopic pregnancy is most helpful in excluding ectopic pregnancy by revealing a normal intrauterine pregnancy. Only 15 percent of women with an ectopic pregnancy will have an extrauterine gestational sac identified.³ Only recently have there been reported cases of interstitial pregnancy diagnosed by ultrasound prior to surgery. One paper reviewed four cases of interstitial pregnancy that differed from true intrauterine pregnancies in that in each case an incomplete myometrial mantle was visualized by scan; two of these cases were diagnosed at operation.⁴

A decidual cast may also produce a false-positive ultrasound diagnosis of an intrauterine pregnancy. Death of the ovum in an ectopic gestation will cause the intrauterine decidua to be sloughed, sometimes creating a decidual cast that may resemble an early intrauterine gestational sac.³ However, using real-time ultrasonography, two separate structures (the gestational sac and a separate crescent-shaped endometrial canal) should be identified in most viable pregnancies of eight weeks' gestation or less.⁵

A third circumstance in which one could be "deceived" by the ultrasound examination is that of combined intrauterine and ectopic pregnancy. Fortunately

the coexistence of intrauterine and extrauterine pregnancies is quite rare. The rate of occurrence has been estimated at 1 in 30,000, although a recent series reported an incidence of closer to 1 in 8,000 pregnancies.⁶ Adnexal mass is a common finding in combined pregnancies.

Ectopic pregnancy is an increasingly common phenomenon. The incidence rose from 4.5 per 1,000 pregnancies in 1970 to 9.4 per 1,000 in 1978, with 42,000 cases in the latter year.⁷ Fortunately the case fatality rate has declined, probably because more sensitive pregnancy tests and ultrasonography have led to earlier diagnoses. It is important to remember that ultrasound in this case was performed in the clinical context of an asymptomatic patient. However, one should avoid overdependence on the diagnostic technology currently available. With a clinical picture of ruptured ectopic pregnancy, even though a somewhat unusual one, the appropriate diagnosis was delayed in this patient because of reliance on the previously obtained "normal" scan. Although this is an uncommon case, the lesson from this case is that an ultrasonogram demonstrating an intrauterine pregnancy does not rule out an ectopic pregnancy.

References

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