



Imaging of Pelvic Pain in the First Trimester of Pregnancy

Aimee D. Eyvazzadeh, MD^a, Deborah Levine, MD^{b,*}

- Normal pregnancy
- Subchorionic hemorrhage
- Spontaneous abortion
- Molar pregnancy
- Corpus luteum
- Hemoperitoneum
- Ectopic pregnancy
- Sonographic diagnosis of ectopic pregnancy
- Endometrial findings
- Adnexal findings
- Use of color Doppler in diagnosis of ectopic pregnancy

- Interstitial pregnancy
- Cervical ectopic pregnancy
- Scar pregnancy
- Ovarian and abdominal ectopic pregnancy
- Ovarian hyperstimulation
- Ovarian torsion
- Fibroids
- Urinary tract
- Gastrointestinal causes of pelvic pain
- Summary
- References

The noninvasive nature, safety, and reliability of ultrasonography make it the diagnostic method of choice for pregnant patients who have pelvic pain. Sonography provides information that allows for diagnosis of both pregnancy-related pain, such as a ruptured ectopic pregnancy, miscarriage, or threatened abortion; and may be useful in the diagnosis of pain unrelated to pregnancy, such as that seen in appendicitis and nephrolithiasis.

Normal pregnancy

Because of hormonal changes, rapid growth of the uterus, and increased blood flow, “crampy” pelvic

pain is common in early pregnancy. For the primipara, this pain can be quite worrisome. It is common for pregnant patients to present with pain in the first trimester and have normal findings on sonography. The first sonographic demonstration of early pregnancy is the intradecidual sign [Fig. 1] [1–3]. This is visualized as a discrete hypoechoic fluid collection with an echogenic rim that is eccentrically located in the endometrial cavity, and deviates the endometrial stripe. This is seen at 4.5 to 5 weeks of gestation [3]. Because small endometrial fluid collections can simulate the intradecidual sign, care should be taken to ensure that the collection has a well-defined echogenic rim, is just

This article was originally published in *Ultrasound Clinics* 1:2, April 2006.

^a Department of Obstetrics and Gynecology, Beth Israel Deaconess Medical Center, 330 Brookline Avenue, Boston, MA 02215, USA

^b Department of Radiology, Beth Israel Deaconess Medical Center, 330 Brookline Avenue, Boston, MA 02215, USA

* Corresponding author.

E-mail address: dlevine@bidmc.harvard.edu (D. Levine).

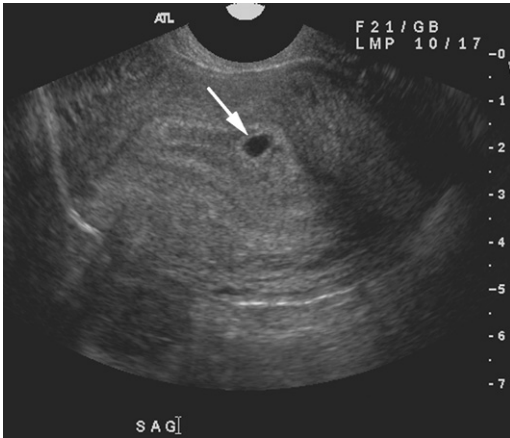


Fig. 1. Normal early pregnancy. Sagittal view of the uterus at 4 1/2 weeks gestational age shows an intra-decidual sign with a small sac (arrow) eccentrically located in the endometrium.

beneath the central endometrial echo, and has an unchanging appearance [1]. It is prudent to obtain follow-up in patients at high risk for ectopic pregnancy or patients who have symptoms in order to ensure that an intrauterine pregnancy is present.

Slightly later the decidua capsularis and decidua vera are seen as two distinct hyperechoic layers surrounding the early gestational sac; this is known as the double decidual sac sign [4]. The yolk sac is the next structure to be visualized. It appears as a small hyperechoic ring within the gestational sac, and is present at 5.5 weeks [Fig. 2]. Finally, the embryo can be seen adjacent to the yolk sac. Cardiac activity can usually be observed whenever an embryonic pole is seen, but should be visualized by the time the embryonic pole is 5 mm [5,6].



Fig. 2. Normal early pregnancy. Sagittal view of the uterus at 5 1/2 weeks gestational age shows a yolk sac (arrow) within the intrauterine gestational sac.

Subchorionic hemorrhage

Subchorionic hemorrhage is seen on ultrasound in 4% to 22% of patients who have symptoms of pain and bleeding in early pregnancy [7]. It is caused by a partial detachment of the trophoblast from the uterine wall. On ultrasound the placental margin is displaced by anechoic or heterogeneous hypoechoic material [8]. Small echogenic structures can be found in such areas, likely due to blood clots. Because the hematoma can dissect in the potential space between the chorion and endometrial cavity, it may be visualized separate from the placenta. Because it typically conforms to the shape of the uterus, it usually has a falciform shape [Fig. 3]. A small collection likely has no clinical significance, whereas moderate or large subchorionic hematomas have a poorer prognosis [9]. Seventy percent of subchorionic hematomas resolve spontaneously by the end of the second trimester [10]. As in all early pregnancy assessments, demonstration of cardiac activity is crucial in determining prognosis.

Spontaneous abortion

First-trimester spontaneous abortion occurs in 10% to 12% of clinically recognized pregnancies [11]. Pain may be constant or intermittent and crampy over the uterus or lower back. Most women with spontaneous abortion experience vaginal bleeding. Up to 25% of all pregnant women bleed some time during pregnancy, with about half of them eventually undergoing miscarriage. The term “threatened abortion” is used to define bleeding in the first 20 weeks of pregnancy with a closed internal os. Ultrasound in the case of a threatened abortion is used to detect an intrauterine pregnancy and to determine if a live embryo or fetus is present. The landmarks for normal pregnancy help to distinguish between a normal early intrauterine pregnancy and a miscarriage. To ensure high specificity in our diagnosis of spontaneous abortion, the authors use generous thresholds: visualization of a yolk sac by the time the gestational sac has a mean sac diameter of 13 mm, visualization of an embryo by the time the mean sac diameter is 18 mm, and visualization of cardiac activity by the time the embryonic pole is 5 mm [12]. Between 6.5 to 10 weeks of gestation, the length of the amniotic cavity is similar to that of the embryo. At times a failed early pregnancy will present as an “empty amnion sign” [13] [Fig. 4].

In addition to the absolute criteria mentioned above, sonographic findings in spontaneous abortion include a thin decidual reaction (less than 2 mm), weak decidual amplitude, irregular contour of the sac, absent double decidual sac sign, and low position of the sac.

Download English Version:

<https://daneshyari.com/en/article/4247765>

Download Persian Version:

<https://daneshyari.com/article/4247765>

[Daneshyari.com](https://daneshyari.com)