Section 2—Answer

A 37-year-old, G3P1E1 (via vagina delivery) woman, with a past history of left side tubal pregnancy, s/p laparoscopic salpingectomy denied any systemic disease before. Her last period was 8 weeks ago. Abnormal vagina spotting was noted since 10 days ago. Pregnancy test was done which showed positive. She went to our outpatient department for further help. In our clinic, pelvic examination revealed vagina spotting with no adnexa tenderness. Transvaginal sonography was performed and empty uterine cavity was found. An intrauterine gestational sac located at right lateral fundus. Besides, the surrounded myometrium thickness was thin. Bilateral adnexa were checked and no abnormal findings were noted.

What is the diagnosis?

Interpretation

Transvaginal sonography showed thick endometrium with empty uterine cavity (Fig. 1a). After the probe shifted to right side, an eccentric location gestational sac was found at right lateral fundus area (Figs. 1b and 2). The gestational sac was surrounded by thin myometrium and closed to the uterine serosa (Figs. 1b and 2). An echogenic line runs from the endometrial cavity to the cornual region, abutting the interstitial gestational sac (called "Interstitial line sign" (Fig. 3)). Bilateral adnexas were checked and no other abnormal findings were found. After explanation, the patient received laparoscopic surgery for management. During the operation, an engorged mass at right cornual area was found (Fig. 4). Cornual wedge resection was performed and the wound repaired with 1-0 V-loc (Fig. 5). Left fallopian tube was absent due to past history of tubal pregnancy status post salpingectomy (Fig. 6). Pathology report also proved the diagnosis of cornual pregnancy (chorionic villi and trophoblast are identified in the specimen).

Discussion

Cornual ectopic pregnancy is an uncommon variant of ectopic pregnancy. It account for only 2–4% of tubal pregnancies or approximately 1 in 2500–5000 live births.
Despite the currently diagnostic method, early identification of cornual pregnancy remains difficult. The mortality rate is as high as 2.5% (7 times greater than that of ectopic pregnancies in general) [1]. Factors that increase the risk of interstitial pregnancy including rudimentary horn, previous salpingectomy (ipsilateral or bilateral) or other tubal damage (tubal ligation or salpingostomy), conception after in vitro fertilization, and history of pelvic inflammatory disease [1,2]. The most common symptoms of cornual pregnancy are abdominal pain and vaginal bleeding in the first trimester of pregnancy.

Transvaginal sonography is the primary method of diagnosis of cornual pregnancies before surgery. The differentiating diagnosis included angular pregnancy. Ultrasonographic feature of an cornual pregnancy is the paucity of myometrium around the superolateral portion of the sac; conversely, the intrauterine angular pregnancy will be surrounded on all sides by at least 5 mm of myometrium [3].

Timor-Tritsch et al. delineated three ultrasonographic criteria for diagnosis: (1) an empty uterine cavity, (2) a chorionic sac separate and at least 1 cm from the lateral edge of the uterine cavity, and (3) a thin (5 mm) myometrial layer surrounding the gestational sac. These parameters were found to have a specificity of 88–93% but

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**Figure 1** a. Transvaginal sonography demonstrated the sagittal view of uterus and empty uterine cavity was found. b. Right lateral view of uterus. An intrauterine gestational sac at right lateral fundus area was surrounded by thin myometrium.

**Figure 2** Doppler ultrasound showed rich vasculature around the gestational sac.

**Figure 3** "Interstitial line sign" visualization of echogenic line runs from the endometrial cavity to the corneal region, abutting the interstitial mass or gestational sac.
carried a sensitivity of only 40% [4,5]. Ackerman et al. described the “interstitial line sign”, which refers to the visualization of an echogenic line that runs from the endometrial cavity to the cornual region, abutting the interstitial mass or gestational sac. This echogenic line has been reported to be 80% sensitive and 98% specific for the diagnosis of interstitial pregnancy [5].

Magnetic resonance imaging is another choice for diagnosis. Bourdel et al. suggested three criteria for the diagnosis of interstitial pregnancy: (1) eccentricity of the gestational sac, (2) presence of a myometrial tissue that surrounds the entire gestational sac with a thickness of 5 mm, and (3) detection of an interstitial line sign that connects the endometrium to the trophoblast [6].

References

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