

Research Letter

Ectopic pregnancy implanted in the liver under the diaphragm

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Abdominal pregnancy has been defined as an ectopic pregnancy implanted in the peritoneal cavity but excludes pregnancies that are tubal, ovarian, or intraligamentous [1]. Abdominal pregnancy is rarely seen and accounts for approximately 1% of all ectopic pregnancies [2]. Ordinarily, the location of an abdominal pregnancy is pelvic, but very rarely it may be implanted in the upper abdomen (especially on the liver) [3]. In most cases, the attachment site of the placenta is on the lower surface of the right lobe of the liver [2]. Here we report a case of ectopic pregnancy implanted on the upper surface of the right liver lobe.

A 33-year-old Chinese woman (gravida 4, para 2) was admitted to our hospital's emergency department with severe pain in the right upper quadrant of her abdomen and right shoulder pain radiation for a duration of 1 day. She had undergone two cesarean deliveries (the first in 2003 and the second 9 months prior to her presentation) and had not used any contraceptive method afterwards. On admission, she claimed to have amenorrhoea for 5 weeks and a urinary pregnancy test was weakly positive. Her serum hCG was elevated at 186.14 mIU/mL. On examination, her pulse was 82 beats/minute and blood pressure was 108/80 mmHg. Her physical examination was normal except for right upper quadrant tenderness. On vaginal examination, the uterus was normal in size with no definite adnexal mass. There was no vaginal bleeding. Transvaginal and transabdominal ultrasound examination showed a normal-sized uterus with an endometrial thickness of 8.4 mm, normal bilateral adnexae, and a moderate amount of free fluid in the abdomen. A mixed echogenic mass of 91 mm × 37 mm in size was observed attached to the superior surface of the right liver lobe (Fig. 1). Because of this unusual finding, a computed tomography scan of the abdomen and pelvis was performed. A 90-mm-long mixed hypodense mass was evident on the upper surface of the right liver lobe (Fig. 2).

Exploratory laparotomy performed through a right subcostal incision revealed a moderate amount of free fluid in the abdomen and a mass of 40 mm × 50 mm covered with coagulated blood. The mass was completely resected from the liver. When bleeding occurred at the fundus of the mass, a suture was placed to achieve hemostasis. No other bleeding was identified from any other site. Perioperatively, the total blood loss was approximately 200 mL and no blood transfusion was required. After surgery, the patient was stable and her serial hCG levels returned to the normal range. Histopathological examination confirmed a hepatic ectopic pregnancy (chorionic villi were seen within the mass; Fig. 3). The patient was discharged 8 days after surgery with instructions for outpatient follow-up.

Nearly all ectopic pregnancies (97%) are implanted in the fallopian tube, and less than 1% of ectopic pregnancies are implanted in the abdominal cavity [2,4]. Abdominal pregnancy may be classified as primary or secondary. Many are the result of secondary nidation in the peritoneal cavity after tubal abortion, tubal rupture, or uterine rupture [5]. Most of these reimplantations take place in the pelvis [3]. Primary abdominal pregnancy is uncommon and must satisfy the criteria of



Fig. 1. Ultrasound examination reveals a mixed echogenic mass of 91 mm × 37 mm in size attached to the superior surface of the right liver lobe.

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Fig. 2. Computed tomography transverse image demonstrating a mixed dense lesion within the right liver lobe under the diaphragm.

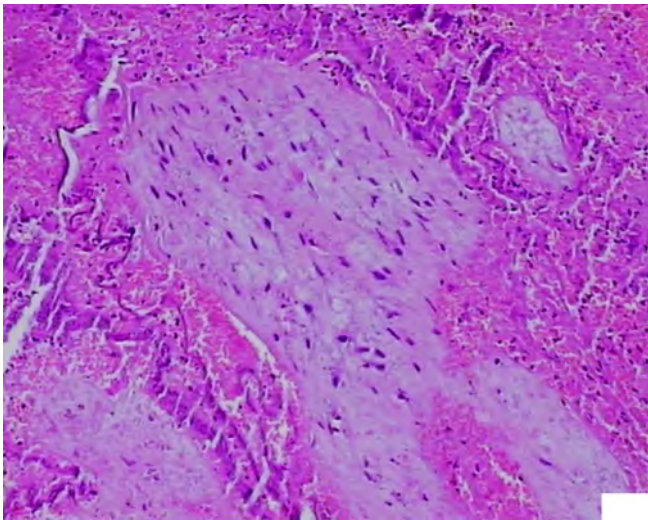


Fig. 3. Histopathological findings of a hepatic ectopic pregnancy (hematoxylin–eosin stain). Chorionic villi along with a blood clot are evident. Original magnification 200 \times .

Studdiford [1]. Hepatic pregnancy is an exceptionally rare category of abdominal pregnancy. It occurs on the lower surface of the right liver lobe because the rich vascular supply provides a favorable site for nidation [6].

Early diagnosis of hepatic pregnancy is essential because the maternal mortality rate is 7.7 times higher than the rate

observed in tubal ectopic pregnancies and 90 times higher than the rate for intrauterine pregnancy [7]. One of the factors contributing to high maternal mortality may be that hepatic ectopic pregnancy is commonly misdiagnosed as a traumatic liver rupture or tumor. Ectopic pregnancy should be suspected for any woman of reproductive age who presents with abdominal or pelvic symptoms.

Management approaches reported in the literature vary from conservative management to cases of wedge resection and right hepatic lobectomy. Hepatic ectopic pregnancies often require more treatment attempts than ectopic pregnancies at other sites. The initial treatment for all but one of the reported ectopic pregnancies was surgical, resulting in an average blood loss of 2400 mL, with six of the 13 patients receiving a transfusion at the time of laparotomy [7]. Because of persistent bleeding, staged surgery was used, with packs left in place and then removed the following day [8]. Another patient had an omental graft owing to persistent bleeding from the site of placental attachment on the liver [9].

In conclusion, for patients with increasing serum hCG levels and no pregnancy identified in the uterus or pelvis, a thorough examination of the entire pelvis and abdomen should be carried out. A high index of suspicion is vital for diagnosing hepatic ectopic pregnancy and reducing maternal mortality.

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