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## Ectopic pregnancy implanted under the diaphragm: A rare case report

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## Abstract

### BACKGROUND

Abdominal pregnancy is a rare type of ectopic pregnancy. We describe here a case of ectopic pregnancy implanted under the surface of the diaphragm, presenting the particular features of imaging findings from ultrasound, computed tomography (CT) and magnetic resonance imaging (MRI).

### CASE SUMMARY

A 30-year-old woman presented with complaint of intermittent abdominal pain, that had begun 5 d earlier. She had no current or abnormal vaginal bleeding, and her serum human chorionic gonadotropin level (13372.08 IU/L) indicated pregnancy. Vaginal ultrasound showed a mixed echogenic mass in the right ovary. CT (plain) scan showed a curved high density mass beneath the subhepatic space. MRI scan showed a curved mixed signal, with restricted diffusion beneath the subhepatic space. Abdominal ultrasound demonstrated a mixed echogenic mass in the right lobe of the liver near the apex of the diaphragm, with a visible yolk sac and germ cell region with a bud. Subsequent laparoscopy visualized a dark red mass under the right diaphragm, which was resected completely. Histopathological examination of the resected mass confirmed an ectopic pregnancy. The recovery was swift and uneventful, and the patient was discharged to home.

### CONCLUSION

Ectopic pregnancy should be in the differential diagnostic workup (*via* multiple imaging modalities) of childbearing woman with unexplained abdominal pain.

**Key Words:** Ectopic pregnancy; Diaphragmatic; Ultrasonography; Computed tomography; Magnetic resonance; Case report

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**Core Tip:** Diaphragmatic pregnancy is an extremely rare type of ectopic pregnancy and is easily misdiagnosed in practice. Here, we report a 30-year-old woman who experienced 5 d of intermittent abdominal pain, without bleeding, and was diagnosed with ectopic pregnancy implanted under the surface of diaphragm. Inclusion of vaginal and abdominal examinations by various routine imaging modalities (ultrasound, computed tomography and magnetic resonance imaging) will to help improve recognition of the disease and reduce clinical error.

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## INTRODUCTION

Ectopic pregnancy is rare, accounting for only 1.3%-2.4% of all pregnancies[1]. Nearly all ectopic pregnancies (95%) are tubal, with rarer locations of ectopic implantations involving the cervix, ovary and abdominal cavity[2]. We searched the English language literature from 1977 to January 2021 using the MeSH terms “ectopic”, “pregnancy”, and “non-tubal” or “abdominal”, but found only a few reports of ectopic pregnancies implanted under the diaphragm in particular.

Herein, we report a rare case of an ectopic pregnancy implanted under the diaphragm. Findings from ultrasound (US), computed tomography (CT) and magnetic resonance imaging (MRI) were key to the recognition and subsequent treatment of the condition. In the Discussion of this case report, we provide a brief review of the literature on this rare event.

## CASE PRESENTATION

### Chief complaints

A married, nulliparous, 30-year-old woman presented to our hospital with complaint of intermittent abdominal pain.

### History of present illness

The patient reported that the abdominal pain had begun 5 d prior. History-taking revealed normal menstruation and no current or past abnormal vaginal bleeding. The last menstrual period had occurred 13 d before admission.

### History of past illness

The patient's general medical history was unremarkable. Her nulliparous status included neither vaginal nor cesarean delivery. She had no use of an intrauterine device (IUD) and had no history of pelvic inflammatory disease or pelvic surgery.

### Physical examination

The patient experienced pressure pain in the upper abdomen.

### Laboratory examinations

Serum human chorionic gonadotropin (HCG) concentration was elevated to pregnancy levels (13372.08 IU/L; nonpregnant levels: < 10 mIU/L).

### Imaging examinations

Vaginal US found a mixed echogenic mass in the right ovary. Initially, the finding was considered to represent a corpus luteum, and the possibility of ectopic pregnancy could not be ruled out (Figure 1). In addition, a cystic lesion was found in the right adnexa and pelvic effusion was present.



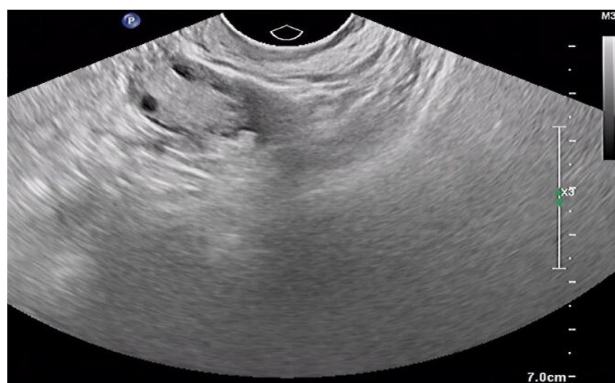


Figure 1 Vaginal ultrasound showed a mixed echogenic mass in the right ovary.

CT (plain) scan revealed a curved high density mass beneath the subhepatic space, which was interpreted as hemorrhage (Figure 2).

On MRI, a curved mixed signal, mostly low in T1-weighted imaging (WI) and high in T2WI, was observed beneath the subhepatic space. Diffusion-weighted imaging (DWI) showed restricted diffusion. After administration of gadolinium (Gd), a peripheral enhanced nodal was observed within the mixed curved signal (Figure 3). In combination with the HCG laboratory finding, the presence of the nodule could not preclude the possibility of an ectopic gestational sac.

Abdominal US demonstrated a mixed echogenic mass in the right lobe of the liver near the apex of the diaphragm. The mass was approximately 5 cm × 3 cm in size, with a cystic dark area measuring approximately 1.5 cm × 1.1 cm. A yolk sac and germ cell region with a bud of approximately 0.4 cm in length was visible, as was a seemingly primitive heart tube pulsation (Figure 4).

## FINAL DIAGNOSIS

Abdominal ectopic pregnancy.

## TREATMENT

The patient underwent laparoscopic exploration and surgical treatment. A cyst measuring 4 cm in diameter was seen in the right ovary. The uterus, left ovary and bilateral fallopian tubes appeared normal. After removing the blood accumulated in the abdominal cavity, a mass measuring 5 cm × 3 cm, with dark red surface, was apparent under the right diaphragm. The mass was dissected completely (Figure 5). Subsequent histopathological investigation revealed chorionic villi within the mass, with no features of abnormal trophoblastic proliferation, confirming the diagnosis of ectopic pregnancy (Figure 6).

## OUTCOME AND FOLLOW-UP

By postoperative day 5, the patient's HCG level had dropped substantially (to 327.58 IU/L). The patient experienced no vaginal bleeding during the postoperative recovery and was discharged to home.

## DISCUSSION

Less than 1% of ectopic pregnancies are implanted in the abdominal cavity[3,4]. While the underlying mechanism of this abnormal condition remains unclear, some risk factors have been identified, including pelvic inflammatory disease, pelvic surgery history, use of IUD, and previous ectopic pregnancy. Ectopic pregnancy under the diaphragm is extremely rare. The symptoms of abdominal pregnancy are usually non-



Figure 2 Computed tomography plain scan showed a curved high density mass beneath the subhepatic space.

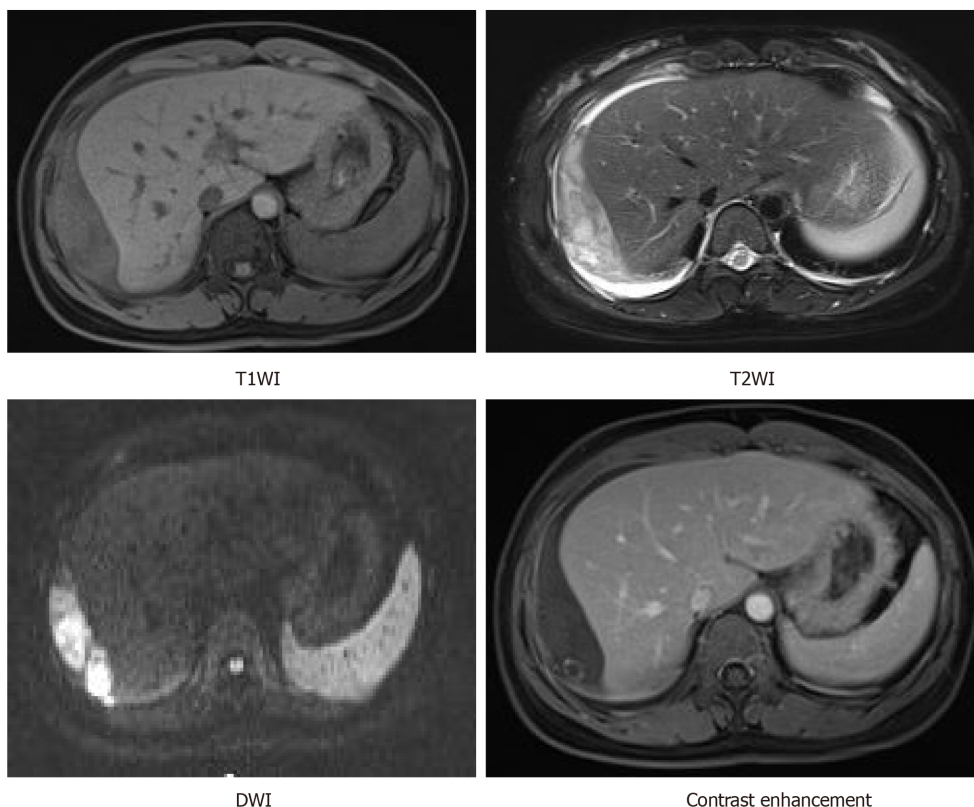
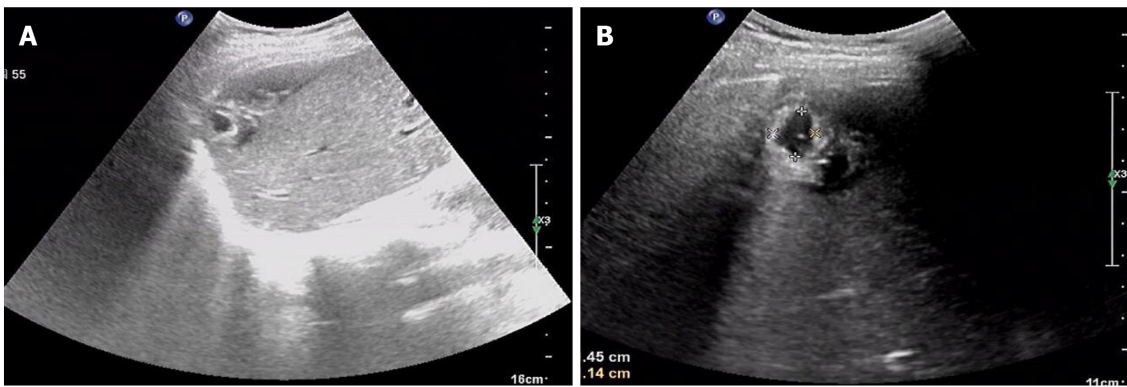


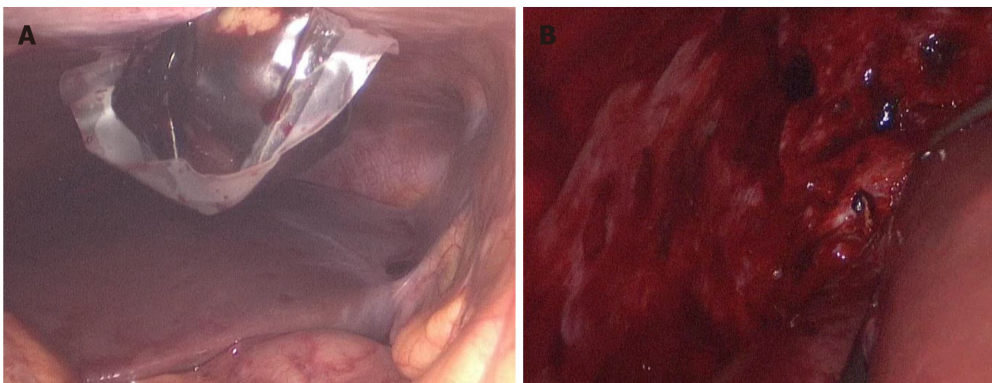
Figure 3 Magnetic resonance imaging scan showed a curved mixed signal beneath the subhepatic space, mostly low in T1-weighted imaging and high in T2-weighted imaging. Diffusion-weighted imaging showed restricted diffusion. A peripheral enhanced nodule was observed within the mixed curved signal after administration of gadolinium. T1WI: T1-weighted imaging; T2WI: T2-weighted imaging; DWI: Diffusion-weighted imaging.

specific, including abdominal or suprapubic pain, bloody vaginal discharge, and painful fetal movements. Although the beta subgroup of HCG is usually elevated in blood, some (approximately 1%) ectopic pregnancies present undetectable levels of HCG[5]. In this situation, imaging plays a more important role in diagnosis. US can detect fetal heartbeats, to make an accurate diagnosis, but its application is limited by the abdominal fat layer and gases in the intestine[6]. CT and MRI can provide more information about the tissue structure near the gestational sac; specifically, a contrast-enhanced CT and MRI will show ring-shaped intensity in ectopic pregnancy tissues[7, 8]. Our patient, described herein, was subject to vaginal and abdominal imaging examinations by US, plain CT, and contrast-enhanced MRI.

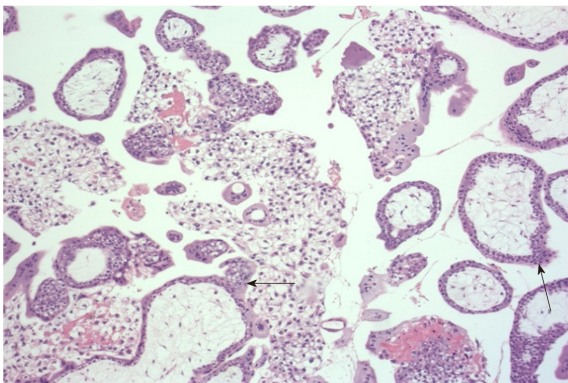
In our patient, plain CT scan showed a high density mass beneath the subhepatic space. In the related literature, Qian *et al*[9] reported on the enhanced-CT finding of nodular lesions at the top of the right hepatic diaphragm. Kuai *et al*[10] reported a case of ectopic liver pregnancy that showed a mixed density lesion within the right liver



**Figure 4** Abdominal ultrasound showed a mixed echogenic mass in the right lobe of the liver near the apex of the diaphragm. A: The mass was approximately 1.5 cm × 1.1 cm in size; B: The mass showed characteristic features of a gestational sac, with a bud of approximately 0.4 cm in length (indicated by a bright dot in the dark zone).



**Figure 5** A mass measuring 5 cm × 3 cm, with dark red surface, was found under the right diaphragm on operation.



**Figure 6** Histopathology findings confirmed the diagnosis of ectopic pregnancy. Chorionic villi were present within the mass, with no features of abnormal trophoblastic proliferation (black arrows).

lobe under the diaphragm on CT scan. Cai *et al*[11] reported the plain CT scan finding of a mass in the right hepatic lobe with a slightly low density peripheral region and an oval central portion with lower density, and the enhanced-CT scan finding of a significantly enhanced peripheral portion and nonenhanced center. In our patient, a curved mixed signal was observed beneath the subhepatic space on MRI, being mostly low in T1WI and high in T2WI, and showing restricted diffusion in DWI. After administration of Gd, a peripheral enhanced nodule was observed within the mixed curved signal. Wang *et al*[12] reported on a round lesion with low signal on T1WI and high signal on T2WI, and irregular mild enhancement in the venous phase. Cai *et al* [11] also reported on a mass in the right hepatic lobe showing increased glucose metabolism (SUVmax of 5.7) within the peripheral portion on positron emission

tomography (PET)-CT scan. Familiarity with the typical and atypical features of the various forms of ectopic pregnancies on US, CT, MRI and PET-CT will certainly help to improve the rate of accurate diagnosis.

The choices of treatment for ectopic pregnancy involve either a conservative nonsurgical approach (typically, methotrexate administration) or surgery. For example, Qian *et al*[9] reported a successful diaphragmatic ectopic pregnancy intervention using US-guided percutaneous microwave ablation, and Chen *et al*[13] described a diaphragmatic pregnancy case managed with laparoscopic management. In our case, the diaphragmatic pregnancy had ruptured, necessitating laparoscopic operation.

## CONCLUSION

Diaphragmatic pregnancy is very rare and more challenging to diagnose clinically. In any childbearing-age woman presenting with unexplained abdominal pain and abdominal bleeding, it is important to take a careful history that does not overlook information on menstrual cycle, menopause, vaginal bleeding, abortion, *etc.* The blood HCG test can clarify the general diagnosis of pregnancy, but imaging examination is necessary to determine if the pregnancy is ectopic. Moreover, a combination of multiple imaging modalities could assist the diagnoses of more difficult cases, such as the rare case described herein.

## REFERENCES

- 1 Taran FA, Kagan KO, Hübner M, Hoopmann M, Wallwiener D, Brucker S. The Diagnosis and Treatment of Ectopic Pregnancy. *Dtsch Arztebl Int* 2015; **112**: 693-703; quiz 704 [PMID: 26554319 DOI: 10.3238/arztebl.2015.0693]
- 2 Parker VL, Srinivas M. Non-tubal ectopic pregnancy. *Arch Gynecol Obstet* 2016; **294**: 19-27 [PMID: 27056054 DOI: 10.1007/s00404-016-4069-y]
- 3 Delabrousse E, Site O, Le Mouel A, Riethmuller D, Kastler B. Intrahepatic pregnancy: sonography and CT findings. *AJR Am J Roentgenol* 1999; **173**: 1377-1378 [PMID: 10541123 DOI: 10.2214/ajr.173.5.10541123]
- 4 Fylstra DL. Ectopic pregnancy not within the (distal) fallopian tube: etiology, diagnosis, and treatment. *Am J Obstet Gynecol* 2012; **206**: 289-299 [PMID: 22177188 DOI: 10.1016/j.ajog.2011.10.857]
- 5 Wong E, Suat SO. Ectopic pregnancy--a diagnostic challenge in the emergency department. *Eur J Emerg Med* 2000; **7**: 189-194 [PMID: 11142270 DOI: 10.1097/00063110-200009000-00005]
- 6 Brouard KJ, Howard BR, Dyer RA. Hepatic Pregnancy Suspected at Term and Successful Delivery of a Live Neonate With Placental Attachment to the Right Lobe of the Liver. *Obstet Gynecol* 2015; **126**: 207-210 [PMID: 26241274 DOI: 10.1097/AOG.0000000000000703]
- 7 Takahashi A, Takahama J, Marugami N, Takewa M, Itoh T, Kitano S, Kichikawa K. Ectopic pregnancy: MRI findings and clinical utility. *Abdom Imaging* 2013; **38**: 844-850 [PMID: 23161059 DOI: 10.1007/s00261-012-9969-0]
- 8 Harris GJ, Al-Jurf AS, Yuh WT, Abu-Yousef MM. Intrahepatic pregnancy. A unique opportunity for evaluation with sonography, computed tomography, and magnetic resonance imaging. *JAMA* 1989; **261**: 902-904 [PMID: 2643733 DOI: 10.1001/jama.261.6.902]
- 9 Qian H, Tian G, Zheng H, Liang W, Jiang T. Successful management of diaphragmatic ectopic pregnancy using ultrasound-guided percutaneous microwave ablation. *J Obstet Gynaecol Res* 2020; **46**: 181-185 [PMID: 31642129 DOI: 10.1111/jog.14131]
- 10 Kuai XP, Wang SY, Qiu JM. Ectopic pregnancy implanted in the liver under the diaphragm. *Taiwan J Obstet Gynecol* 2013; **52**: 586-587 [PMID: 24411049 DOI: 10.1016/j.tjog.2013.10.024]
- 11 Cai YY, Xiao EH, Shang QL, Xiao LZ. Ectopic pregnancy in the liver incidentally diagnosed by imaging: A case report. *Exp Ther Med* 2017; **14**: 373-376 [PMID: 28672941 DOI: 10.3892/etm.2017.4478]
- 12 Wang CL, Cheng L, Zhang ZQ, Yuan ZD. Imaging diagnosis of hepatic ectopic pregnancy: A report of one case. *Intractable Rare Dis Res* 2012; **1**: 40 [DOI: 10.5582/irdr.2012.v1.1.40]
- 13 Chen L, Liu J, Shu J, Zeng W, Zhao X. Successful laparoscopic management of diaphragmatic pregnancy: a rare case report and brief review of literature. *BMC Pregnancy Childbirth* 2019; **19**: 99 [PMID: 30922250 DOI: 10.1186/s12884-019-2248-0]





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