

# A rare case of abdominal pregnancy

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## Summary

An extrauterine abdominal pregnancy is a very rare form of ectopic pregnancy in which implantation occurs within the peritoneal cavity, and outside the fallopian tube and ovary. It easily causes misdiagnosis and is closely related to maternal health. Only a few reported cases have been treated using laparoscopy. The authors report a case involving an extrauterine abdominal pregnancy diagnosed during laparoscopy located near the rectum. A 39-year-old gravida 3 para 1 who had a cesarean delivery 16 years ago was referred to the present department for evaluation of vaginal bleeding for 47 days. No abdominal tenderness was demonstrated on physical examination. The vaginal examination revealed an enlarged uterus. An ultrasound scan showed an empty uterine cavity. Adjacent to the right ovary, a mixed echo was noted in which a yolk sac was visible. A heart rate was detected. The serum beta hCG was 11,198 mIU/mL. Laparoscopic surgery was performed. On the right side of the sacral ligament there was a 3×3×2.5 cm purple-blue mass adherent to the rectum. The pregnancy was excised and removed from the abdomen in an endo-bag, and hemostasis was assured. During the postoperative course, intramuscular methotrexate therapy was administered (20 mg/m<sup>2</sup> twice a week ×5). The patient was discharged on the 26<sup>th</sup> post-operative day; she was asymptomatic and had no complaints. The serum beta hCG level was 3.98 IU/l at the time of discharge. This case shows that laparoscopic treatment of abdominal pregnancy is safe and feasible, and when necessary, can assist drug therapy.

**Key words:** Extrauterine; Abdominal pregnancy; Laparoscopy.

## Introduction

An extrauterine abdominal pregnancy is a very rare form of ectopic pregnancy in which implantation occurs within the peritoneal cavity, and outside the fallopian tube and ovary. Extrauterine abdominal pregnancy is estimated to occur in ten per 100,000 pregnancies in the United States [1]. Its diagnosis is frequently missed during antenatal care, despite the routine use of abdominal ultrasonography. Nevertheless, it is extremely important to detect it because the associated maternal mortality rate is estimated at about five per 1000 cases, which is approximately seven times higher than the estimated rate for ectopic pregnancy in general, and approximately 90 times the maternal mortality rate associated with normal delivery in the United States [1]. Survival of the newborn is also affected, with a perinatal mortality rate of 40%-95% [2]. The authors report a case involving an extrauterine abdominal pregnancy diagnosed during laparoscopy located near the rectum.

## Case Report

A 39-year-old gravida 3 para 1 who had a caesarean delivery 16 years ago was referred to the present department for evaluation of vaginal bleeding for 47 days. No abdominal tenderness was demonstrated on physical examination. The vaginal examination revealed an enlarged uterus. Transvaginal sonography revealed a uterus 61×56×60 mm in size with no intrauterine gestation. Adjacent to the right ovary, a mixed echo was noted in which a yolk

sac was visible. A heart rate was detected. The serum beta hCG was 11,198 mIU/mL.

On the day of admission, laparoscopic surgery was performed under general anaesthesia. The uterus was enlarged consistent with a two-month gestation and the bilateral attachments to the uterus were normal in appearance. No pelvic effusion was present. A diagnostic curettage performed in conjunction with the laparoscopy did not yield villous tissue. Color Doppler ultrasonography revealed a mass in the right pelvic. On the right side of the sacral ligament there was a 3×3×2.5 cm purple-blue mass adherent to the rectum. The pregnancy was excised and removed from the abdomen in an endo-bag, and hemostasis was assured. The intra-operative blood loss was estimated to be 100 cc. During the post-operative course, intramuscular methotrexate therapy was administered (20 mg/m<sup>2</sup> twice a week ×5). The serum beta hCG levels were monitored daily. The patient was discharged on the 26<sup>th</sup> post-operative day; she was asymptomatic and had no complaints. The serum beta hCG level was 3.98 IU/l at the time of discharge.

## Discussion

The majority of pregnancies located in the abdominal cavity result from re-implantation of tubal abortions. Thus, such pregnancies are not considered to be primary abdominal pregnancies [2]. The present reported case reported matches the criteria defined by Studdiford in 1942 [3] as a primary abdominal pregnancy. To be considered a primary abdominal pregnancy, the pregnancy must meet the following criteria: 1) intact fallopian tubes and ovaries must be normal, without evidence and signs of recent or remote injury; 2) no evidence of uteroperitoneal fistula; and 3) the

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gestation must be related exclusively to the peritoneal surface and be detected early enough to eliminate the possibility that it is a secondary implantation.

Primary abdominal pregnancies have been reported within the omentum, sigmoid colon, posterior peritoneum of the pelvis, spleen, liver, diaphragm, obturator foramen, posterior surface of the uterus, retroperitoneum, and pancreas [4–18]. The guidelines for the use of ultrasound to diagnose abdominal pregnancy requires the following: 1) demonstration of a fetus in a gestational sac outside the uterus, or an abdominal or pelvic mass identifiable as the uterus separate from the fetus; 2) failure to note a uterine wall between the fetus and urinary bladder; 3) recognition of a close approximation of the fetus to the material abdominal wall; and 4) localization of the placenta outside the confines of the uterine cavity.

Intraoperatively, the fallopian tubes and ovaries of the patient were normal bilaterally, the uterine surface was intact, and no active bleeding was present in the abdominal cavity. Therefore, the diagnostic criteria were met for a primary abdominal pregnancy.

An abdominal pregnancy is difficult to diagnose. Indeed, it is often diagnosed at the time of abdominal surgery. The most common method used to diagnose it is ultrasonography; however, the reported diagnostic error rates in different series have ranged from 50%-90% [19]. Magnetic resonance imaging can also be used to confirm the diagnosis of an abdominal pregnancy.

An abdominal pregnancy carries the risk of sudden, life-threatening intra-abdominal bleeding because of the unpredictability of placental separation and resulting massive haemorrhage. Preoperative systemic methotrexate with subsequent laparotomy for removal of the fetus and placenta may minimize potential blood loss, and may be a reasonable approach in the care of a patient with an abdominal pregnancy with placental implantation to the abdominal viscera and blood vessels. This treatment option, however, could be considered in the management of this potentially life-threatening condition, but more reports and experience are required.

In the current case, the gestational sac was located near the rectum. To avoid Sertoli cell residue, the authors proactively administered intramuscular methotrexate. The patient was asymptomatic and free of complaints at the time of discharge. After 26 days, the serum beta hCG level was normal.

## Conclusion

Abdominal pregnancies are rare. We should be compulsive in localizing early pregnancies to reduce the complications associated with abdominal pregnancies.

## References

- [1] Atrash H.K., Friede A., Hgue C.J.R.: "Abdominal pregnancy in the United States: frequency and mortality". *Obstet. Gynecol.*, 1987, 69, 333.
- [2] Martin J.N. Jr., Sessums J.K., Martin R.W., Pryor J.A., Morrison J.C.: "Abdominal pregnancy: current concepts of management". *Obstet. Gynecol.*, 1988, 71, 549.
- [3] Studdiford W.E.: "Primary peritoneal pregnancy". *Am. J. Obstet. Gynecol.*, 1942, 44, 487.
- [4] Daw E., Colaco E.: "Primary peritoneal pregnancy on the anterior surface of the uterus". *Br. J. Clin. Pract.*, 1978, 32, 205.
- [5] Kellet R.J.: "Primary abdominal (peritoneal) pregnancy". *J. Obstet. Gynaecol. Br. Commonw.*, 1973, 80, 1102.
- [6] Goh T.H., Rahman S.A.: "Primary peritoneal pregnancy implanted on the uterine fundus". *Aust. N. Z. J. Obstet. Gynecol.*, 1980, 20, 240.
- [7] Johnson A.G.: "Primary peritoneal pregnancy". *Br. Med. J.*, 1968, 4, 96.
- [8] Hatada Y.: "The pedunculated type of primary peritoneal pregnancy implanted on the infundibulopelvic ligament". *Obstet. Gynecol.*, 1993, 82, 693.
- [9] Copper J.A.: "Early primary peritoneal pregnancy". *J. Obstet. Gynaecol. Br. Commonw.*, 1968, 75, 232.
- [10] Friederich M.A.: "Primary omental pregnancy. 2 cases of primary peritoneal pregnancy". *Obstet. Gynecol.*, 1968, 31, 104.
- [11] Yackel D.B., Panton O.N., Martin D.J., Lee D.: "Splenic pregnancy: case report". *Obstet. Gynaecol.*, 1988, 71, 471.
- [12] Kahn J.A., Skjeldestad F.E., During V., Sunde A., Molne K., Jorgensen O.G.: "A spleen pregnancy". *Acta Obstet. Gynecol. Scand.*, 1989, 68, 83.
- [13] Cormio G., Santamato S., Vimercati A., Selvaggi L.: "Primary splenic pregnancy: a case report". *J. Reprod. Med.*, 2003, 48, 479.
- [14] Biolchini F., Giunta A., Bigi L., Bertellini C., Pedrazzoli C.: "Emergency laparoscopic splenectomy for haemoperitoneum because of ruptured primary splenic pregnancy". *ANZ J. Surg.*, 2010, 80, 55.
- [15] Panda S., Darlong L.M., Singh S., Borah T.: "Case report of a primary ovarian pregnancy in a primigravida". *J. Hum. Reprod. Sci.*, 2009, 2, 90.
- [16] Yildizhan R., Kolusari A., Adali F., Adali E., Kurdoglu M., Ozgokce C., Cim N.: "Primary abdominal ectopic pregnancy: a case report". *Cases J.*, 2009, 2, 8485.
- [17] Plotti F., Di Giovanni A., Oliva C., Battaglia F., Plotti G.: "Bilateral ovarian pregnancy after intrauterine insemination and controlled ovarian stimulation". *Fertil. Steril.*, 2008, 90, 2015.e3.
- [18] Chopra S., Keepanasseril A., Suri V., Gupta N.: "Primary omental pregnancy: Case report and review of literature". *Arch. Gynecol. Obstet.*, 2009, 279, 441.
- [19] Allibone G.W., Fagan C.J., Porter S.C.: "The sonographic features of intra-abdominal pregnancy". *J. Clin. Ultrasound*, 1981, 9, 383.

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