
CASE REPORT

Sonohysterography Assisted Transabdominal Ultrasonography in Advanced Abdominal Pregnancy : A Case Report

Densak Pongrojpaw MD,
Atiwut Kamudhamas MD.

Department of Obstetrics and Gynecology, Faculty of Medicine, Thammasat University, Pathumthani 12120, Thailand

ABSTRACT

Abdominal pregnancy is a potentially life – threatening form of ectopic pregnancy. This paper reports a case of advanced abdominal pregnancy which was diagnosed preoperatively by sonohysterography assisted transabdominal ultrasonography. Exploratory laparotomy was performed, placenta was left in-situ. The postoperative course was uneventful. Serum - hCG and ultrasonography were used to follow up placental resorption.

Key words : abdominal pregnancy, sonohysterography, ultrasonography

Abdominal pregnancy is a rare event with high fetal and maternal morbidity and mortality rates.⁽¹⁻³⁾ The incidence seems to be higher in patients of low socioeconomic status and in developing countries.⁽⁴⁾ The prognosis is poor with an estimated maternal mortality rate of 5.1 per 1000 cases, 7.7 times greater than other forms of ectopic pregnancy and 90 times higher than that from intrauterine pregnancy.⁽³⁾ The early diagnosis of abdominal pregnancy is frequently difficult, only 20-40% of women with abdominal pregnancy have an accurate preoperative diagnosis.⁽⁴⁾ Delayed diagnosis is mainly due to difficulties in clinical assessment caused by variation in presentation. We present a case of advanced abdominal pregnancy that was preoperatively diagnosed by sonohysterography assisted ultrasonography.

Case report

A 43 – years old G₅P₃ pregnant woman presented with lower abdominal pain at emergency room, Thammasat University Hospital on July 9, 2002. Her last menstrual period was 5 months ago. Her past history and family history were unremarkable. She had twice antenatal attentions at primary care level clinic elsewhere. She has felt her baby's quickening for 1 month. On physical examination, she had body temperature of 37°C, a blood pressure of 100/60 mmHg and a pulse rate of 100/min. The abdomen was generally distended with tenderness and rebound tenderness. Uterine height of fundus was at $\frac{1}{4}$ above umbilicus, Fetal heart sound was auscultated with a rate of 150 /min. Transabdominal ultrasonography was performed and revealed a 25 weeks fetus by biparietal parameter, abdominal circumference and femur length

measurement. Free fluid, suspected blood, was seen in her abdominal cavity. A solid mass, uterus liked structure, was detected anteriorly to the baby. Our first impression was abdominal pregnancy. We thus used sonohysterography to confirm that the fetus was outside the uterus by instillation of normal saline through the cervix. The normal sized uterus was then identified with normal appearing endometrial cavity.

An emergency exploratory laparotomy was performed under general anesthesia. There was approximately 800 ml of hemoperitoneum. Gestational sac was posterior to the uterus, the placenta densely attached right adnexa and ascending colon with couple of active bleeding sites. The left fallopian tube and left

ovary were normal. The fetus was manually delivered, umbilical cord was sutured-ligated and cut at its insertion. Bleeding sites at placenta were sutured and compressed. The placenta was left in *–situ* without any attempt to deliver. Blood clot was removed. Estimated blood loss during the procedure was 1000 ml. Six units of packed red blood cell were replaced. The fetus was male, body weight 620 grams, Apgar 1,0 at 1 and 5 minute. The patient's postoperative course was uneventful. She was discharged at 4th day after the operation and was appointed weekly. Serum *–hCG* and ultrasonography were used to follow placental resorption. Her serum *–hCG* level dropped precipitously and became undetectable after 8 weeks.



Fig. 1. Sonohysterographic findings show the fetus outside the normal uterus.

Discussion

Abdominal pregnancy has been thought to be a rare condition. The estimate incidence is 1 in 8,000-10,000 of births⁽¹⁻³⁾ and 1% of ectopic pregnancy.^(1,2,5) Abdominal pregnancy may be primary, from direct implantation of the blastocyst on the peritoneal surface or abdominal viscera, or secondary resulting from extrusion of an embryo from uterine tube.⁽⁶⁾ The risk factors are similar to those of tubal ectopic pregnancy, such as pelvic infection, ectopic gestation, endometriosis, history of infertility, and previous tubal

surgery.^(1,4) Unlike tubal ectopic pregnancy, threatened abortion is an additional associated risk factor.⁽⁷⁾ Age and parity do not influence the occurrence of abdominal pregnancy.⁽⁸⁾ Average age is 30.5 years and range from 19-42 years.^(2,7-8) The most frequent symptoms are abdominal pain, nausea and vomiting, general malaise, amenorrhea, and vaginal bleeding. The most common sign is abdominal tenderness.^(1,3,8) Advanced abdominal pregnancy should be suspected in patients present with hemoperitoneum, abnormal presentation, painful fetal movement and spurious labor.⁽¹⁾

Although ultrasonography has become an increasingly invaluable diagnostic tool in obstetric practice, but its use in abdominal pregnancy most often do not allow an unequivocal diagnosis to be made.⁽³⁻⁴⁾ Magnetic resonance imaging (MRI) has been used to confirm abdominal pregnancy following a suspicious sonographic finding.^(4,9) MRI is also safe for fetal radiation than computed tomography. Martin et al⁽³⁾ used hysteroscopy for diagnosing or confirm abdominal pregnancy. Tromans et al⁽¹⁰⁾ reported that elevated maternal serum alpha fetoprotein (MSAFP) for supporting the differential diagnosis of abdominal pregnancy. In our patient, we used real-time ultrasonography for diagnosis and sonohysterography for supporting the diagnosis.

Once the diagnosis of an abdominal pregnancy is made, intervention should be considered in order to decrease complication. In case of gestational age less than 24 weeks, amniotic fluid volume is absent or minimal, conservative treatment is rarely performed because fetal survival is extremely poor, so pregnancy termination should be made as soon as diagnosed.^(4,11) If the gestational age is greater than 24 weeks, debate has arisen. Some authors^(5,12) await fetal viability in hospital expectant management. The fetal malformation and complication, for example deformation of facial, joints and pulmonary hypoplasia are frequent.⁽⁵⁾ Dubinsky et al⁽¹²⁾ reported expectant management in advanced abdominal pregnancy and found that the fetus with placenta attached to the uterus appears to be a factor related to fetal survival.

Laparotomy is the choice of treatment. Laparoscopic surgery can be used successfully for treatment of abdominal pregnancy if the gestational sac is small and stable hemodynamic status.⁽¹³⁻¹⁴⁾ Intraoperative decision regarding removal or manipulation of the placenta at surgery for abdominal pregnancy is an important management issue. Several approaches have been advocated :1) avoidance of placental manipulation, ligating the umbilical cord close to the placenta and leaving the organ in-situ with no further treatment ;2) ligation of the placental blood

supply, if accessible, and removed of pelvic organs upon which implantation has occurred; 3) leaving the placenta in-situ with later use of methotrexate to increase the rate of destruction and absorption of trophoblastic tissue.^(3-4,8) The use of methotrexate is controversial, it may cause accelerated placental destruction with accumulation of necrotic tissue and infection with abscess formation.⁽⁸⁾ Serial ultrasonography and serum -hCG have been used to follow up placental involution.⁽⁴⁾

Mekki et al⁽¹⁵⁾ studied the outcome of placental management in abdominal pregnancy, placental excision cause more massive hemorrhage, longer operative time, more cost, more morbidity and increase risk of excised other pelvic organs such as uterus, ovary. In our patient we could not identify placental blood supply. We ligated the umbilical cord near its insertion, left the placenta in-situ and used ultrasonography and serum -hCG level for following up the placental absorption.

In conclusion, we present a case of advanced abdominal pregnancy that was diagnosed preoperatively by sonohysterography assisted abdominal ultrasonography. We comment that in cases of abdominal pregnancy, fast and accurate diagnosis is essential as the maternal mortality rate is high. In order to improve accuracy of diagnosis, we believe sonohysterography is very beneficial. Moreover, this method is non-invasive, less expensive and takes less time to confirm diagnosis compare with other additional methods to assist ultrasonographic diagnosis.

References

1. Pisarka MD, Carson SA. Incidence and risk factors for ectopic pregnancy. *Clin Obstet Gynecol* 1999;42:1-8.
2. Atrash HK, Friede A, Hogue CJR. Abdominal pregnancy in the United States : frequency and maternal mortality. *Obstet Gynecol* 1987;69:333-7.
3. Martin JN Jr, Sessums JK, Martin RW, Pryor JA, Morrison JC. Abdominal pregnancy : current concepts of management. *Obstet Gynecol* 1988;71:549-57.
4. Costa SD, Presley J, Bastert G. Advanced abdominal pregnancy. *Obstet Gynecol* 1991;46:515-25.
5. Catwright PS, Brown JE, Davis RJ, Thieme GA, Boehm FN. Advanced abdominal pregnancy associated with fetal pulmonary hypoplasia : Report a case. *Am J Obstet Gynecol* 1986;155:396-7.

6. Stufford JC, Ragan HD. Abdominal pregnancy. *Obstet Gynecol* 1977;50:548.
7. Hallatt JG, Grove JA. Abdominal pregnancy : A study of twenty-one consecutive cases. *Am J Obstet Gynecol* 1985;152:444-9.
8. Rahman MS, Al-Suleiman SA, Ranman J, Al-Sibai MM. Advanced abdominal pregnancy – Observations in 10 cases. *Obstet – Gynecol* 1982;59:366-72.
9. Harris MB, Angtuaco T, Frazier CN, Mattison DR. Diagnosis of a viable abdominal pregnancy by magnetic resonance imaging . *Am J Obstet Gynecol* 1988;159: 150-1.
10. Tromans PM, Coulson R, Labb MD. Abdominal pregnancy associated with extremely elevated serum alphafetoprotein : Case report. *Br J Obstet Gynaecol* 1984;91:296.
11. Tulandi T, Salen A. Surgical management of ectopic pregnancy. *Clin Obstet Gynecol* 1999;42:31-8.
12. Dubinsky TJ, Guerra F, Gormaz G, Maklad W. Fetal survival in abdominal pregnancy : a review of 11 cases. *J Clin Ultrasound* 1996;24:513-7.
13. Tsudo T, Harada T, Yoshioka H, Terakawa N. Laparoscopic mangement of early primary abdominal pregnancy. *Obstet Gynecol* 1997;90:687-8.
14. Chung MT, Lin YS , Wu MP, Huang KF. Laparoscopic surgery for omental pregnancy. *J Am Assoc Gynecol Laparosc* 2002;9:84-6.
15. Mekki Y, Gilles JM, Mendez L, O' Sullivan MJ. Abdominal pregnancy : to remove or not to remove the placenta. *Prim Care Update Ob Gyns* 1998;5:192.