

**CASE REPORT****Heterotopic Abdominal Pregnancy With Successful Healthy Live Birth: Case Report**Ineke Septya Putri^{1,*}, Afika Danedea Pramitha¹, Niken Wening Surjnti¹, Imelda Monicha²

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Corresponding Author: Ineke Septya Putri, inekeseptya@gmail.com**Submitted:** September 01, 2025**Accepted:** July 28, 2026**Published:** August 13, 2026**DOI:** <https://doi.org/10.25077/aoj.10.2.343-353.2026>**Abstract**

Introduction: Nowadays, use of assisted reproductive technologies (ART) including ovulation induction, in vitro fertilization (IVF), intrauterine insemination (IUI) and intracytoplasmic sperm injection (ICSI) lead to rise in both ectopic pregnancy as well as heterotopic pregnancy up to 1,5% in pregnancies after ART.

Case presentation: A 27-year-old primigravida woman at her seventh week of gestation came to the emergency room with complaints of weakness and vomiting every taking meal for 2 days. There was no fever and no abdominal pain. History of ovulation induction with clomiphene citrate therapy was carried out 10 weeks previously. On physical examination, we found her blood pressure was drop until 80/60 mmHg with heart rate of 114 bpm. Also we found anemic eyes and pale acral. We suspected it was an ectopic pregnancy. After one day of treatment in the ward, the patient was increasingly weak, pale, with worsened abdominal pain. The laboratory test showed the haemoglobin drop until 2,9 g/dL and sonography finding was excessive hemoperitoneal bleeding. The patient underwent emergency laparotomy and found the uterus was normal according to 8-9th weeks of pregnancy but an irregular tumor attached to the splenic flexure of the colon. The pathology anatomy showed it was vili choroalis.

Conclusion: It is very important to give more attention to the main complaints after doing ART and also we need to consider the possibilities of heterotopic pregnancy due to misdiagnosed oftenly. Therefore, appropriate and effective treatment should be implemented for positive outcome.

Keywords: Heterotopic pregnancy, Heterotopic abdominal pregnancy, Hemoperitoneal bleeding, Laparotomy, Assistive Reproductive Technologies

INTRODUCTION

Ectopic pregnancy is the implantation of blastocyst outside of the uterine cavity but this incident can occur simultaneously with normal pregnancy inside of the uterine cavity called a heterotopic pregnancy. This combine of intra and extra-uterine gestation is very rare with an estimated incidence of 1 in 30.000 pregnancies¹. Nowadays, use of assisted reproductive technologies (ART) including ovulation induction, in vitro fertilization (IVF), intrauterine insemination (IUI) and intracytoplasmic sperm injection (ICSI) lead to rise in both ectopic pregnancy as well as heterotopic pregnancy up to 1,5 % in pregnancies after ART².

The most common type of heterotopic pregnancy is intrauterine combined with tubal or cervical pregnancy (Talbot et al., 2011) , while intrauterine pregnancy combined with abdominal pregnancy especially colon is very rare. Due to this rare phenomenon, no management standards have been developed yet but to keep preserving and continue a properly located pregnancy, pharmacological therapy like methotrexate is excluded³. Surgical and conservative management are the best option. Heterotopic abdominal pregnancy is difficult to diagnosed. Symptoms may be absent or ambiguous. Laboratory test are typically not specific, sonographically findings may not be recognized, and the diagnosis is often missed.

We present a case of a woman preserving the intrauterine pregnancy after had a complication of heterotopic abdominal pregnancy especially colon with hemorrhagic shock, diagnosed at 7-8 weeks of pregnant after ovarian stimulation and undergo a surgical management. After searching for related case report which published over the past 10 years. We found various management and outcomes following this incidence and we compare with our case report in the discussion part.

CASE REPORT

A 27-year-old primigravida at her seventh week of gestation came to the emergency room with complaints of weakness and vomiting every taking meal for 2 days. There was no fever and no abdominal pain. The patient also didn't have any vaginal bleeding and denied any other illnesses and allergies. Two days earlier she came to the hospital for a check-up at the obstetric clinic and had an ultrasound examination. The result was normal pregnancy with gestational sac (+) intrauterine and Crown Rump Length (CRL) equivalent to 7-8 weeks. History of ovulation induction with clomiphene citrate therapy was carried out 10 weeks previously. On physical examination, we found her blood pressure was drop until 80/60 mmHg with heart rate of 114 beat per minute or tachycardia. Also we found anemic eyes and cold pale acral. Laboratory testing on admission showed Hb was 9,1 g/dL and elevated white blood cell count $33.4 \times 10^3/\mu\text{L}$ with an increase in segment neutrophils of up to 96%, a hematocrit of 26 vol% along with a normal blood platelet level of $268 \times 10^3/\mu\text{L}$. The results of other examinations showed a creatinine level was 1,17 mg/dL. The patient was given immediately resuscitated with IV fluids to improve blood pressure temporarily and was advised to be hospitalized and referred to Obsgyns department with an initial diagnosis hyperemesis gravidarum and anemia in pregnancy. The other therapy that given was nephroferous

drip and anti-emetic.

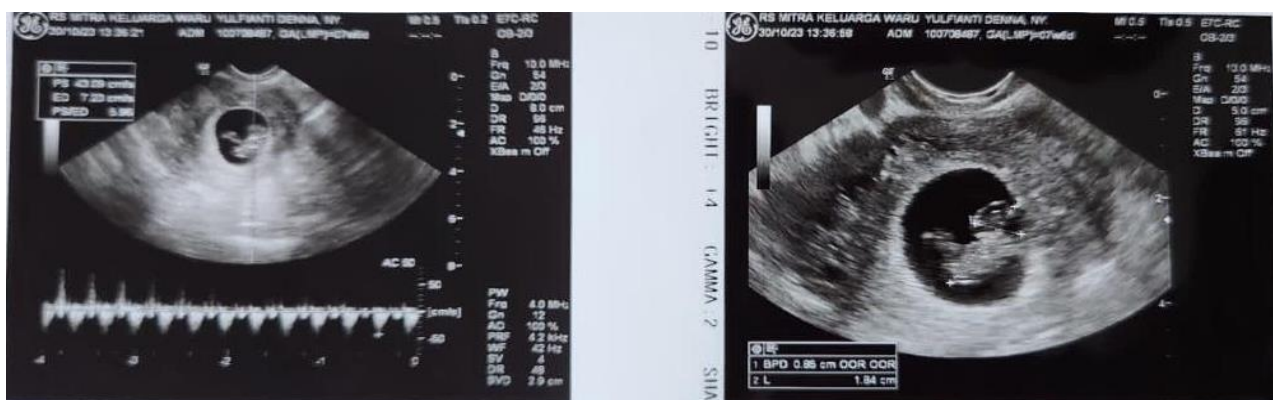
After one day of treatment in the ward, the patient was increasingly weak, pale, with additional complaints of abdominal pain. On physical examination, Blood Pressure was drop again until 80/60 mmHg with heart rate of 110 bpm, still anemic eyes and cold wet pale acral. A laboratory examination showed that the Hemoglobin had dropped drastically to 2.9 g/dL and an ultrasound examination showed a suspicious free fluid approximately 1,5 liters, it supposed to intra-abdominal bleeding. The patient was immediately prepared for emergency laparotomy under general anesthesia.

The operation by the obstetrician was began with pfannenstiel incision and we found a lot of hematoma filled the pelvic cavity approximately 2,5 liters. The uterus was normal with anteflexion position according to pregnancy 8-9 weeks and both of adnexal and parametrium was normal too. There was no bleeding from the gynecology organ and we decided to consult to surgery department. The operation was continued by the surgeon. A midline incision was made after we closed the pfannenstiel incision layer by layer and found an irregular tumor attached to the splenic flexura of the colon. When the tumor was touched and held, the tumor- like tissue suddenly detaches from the colon. Then the tumor tissue was sent to the pathology department. The anatomical pathology of the tissue was a proliferation of choralis villi with a distribution of trophoblast cells between the bleeding areas. It can be concluded that the tissue was actually part of the placenta.

After surgery, the patient was treated in the intensive care unit and there were no complications found during the postoperative course. She planned to have whole blood (WB) transfusion until hemoglobin raised to 10 or more. Post transfusion of four bags of WB, the patient's condition get better with BP 103/61mmHg and Heart rate of 87 bpm. The conjunctiva showed no more anemic. On laboratory examination, the HB was increase to 7,5 g/dL and planned to give transfuse again of 2 bags Packed Red Cell (PRC). Post transfusion of 2 bags PRC, the hemoglobin was raising until 9.9 g/dL and the patient was transferred to general ward. While in there, the patient was given 1 bag of PRC again and the Hb had reached 11.3 g/dL. The patient feels very well, no weakness, no more abdominal pain and no more paleness. Before being discharged, the patient underwent an ultrasound examination and found the uterus enlarged normally for pregnant, positive intrauterine gestational sac with CRL equal to 7-8 weeks, Fetal heart rate detected normally, both adnexal and parametrium was in normal range too. The patient was discharged on her seventh postoperative day while keep preserving healthy live fetus in the uterus and was planned for check up 1 week after.

In June 4th (at 39/40 weeks of gestation), the patient arrived at the emergency department complaining of strong contractions. A cardiotocography (CTG) was conducted, revealing abnormal fetal heart rate (FHR) readings. The CTG was repeated after 1 hour, yielding the same abnormal results, with an FHR of 80 bpm. It was decided to perform an emergency cesarean section (C-section) on the same day. During the surgical procedure, exploration revealed a term gravid uterus, normal adnexa (fallopian tubes and ovaries), and then the baby was delivered by head expulsion. The baby,

a boy, weighed 3430 grams, measured 49 cm in length, and had Apgar scores of 8-9, but the amniotic fluid was cloudy. The placenta was delivered with gentle traction. Following the baby's birth, the surgical wound was sutured with one layer. The uterine contractions were weak, requiring massage. Intravenous metronidazole and ceftriaxone were administered, followed by intramuscular oxytocin, resulting in gradual improvement of contractions. Finally, abdominal cavity lavage was performed with 1000cc of normal saline, with no evidence of active bleeding upon evaluation



Literature Review

We searched on the PubMed, Web of Science and Scopus database using the terms "Heterotopic abdominal pregnancy", "abdominal pregnancy AND heterotopic pregnancy" and "abdominal pregnancy with intrauterine pregnancy". The search included studies published from 2007 to 2024, as well as references and review articles relevant to case reports. Reports of interstitial heterotopic pregnancy were excluded. All case reports of heterotopic abdominal pregnancy were included, regardless of treatment or outcome, and data on clinical manifestations, medical history, treatments, and outcomes were recorded. However, some reports did not provide complete information on all these aspects.

After reviewing many articles, 13 case from database were chosen (as shown in **Table 1**). With the addition of the current case, the total number of cases amounted to 14.

Author (year)	MA	Method of Conception	Gravidity	GA (Weeks)	Clinical Appearance	Site of implantation	Treatment	Pregnancy Outcome	Duration of Hospitalized or need ICU
Knopman et al. (2007)	37yo	IVF-ET	Multigravida	9	Lower abdominal and rectal pain	Right uterus and acral ligament	Emergency laparoscopy	No outcome	No data
Shafiet al. (200G)	26yo	Spontaneous	Primigravida	13	Pain in right lower abdomen, vomiting, febrile	Ileocolic region	Emergency laparotomy	Delivered normal female baby by caesarean section	Discharge on day 5th post operative day
Georgiou et al. (2011)	37yo	IVF with implantation of two embryos	Primigravida	12	No symptom	Bowel, mesentery and omentum	Laparoscopy and laparotomy	Delivered live female infant in poor condition requiring 30s of CPR	No data
Huang K et al. (2014)	30yo	Spontaneous	No data	26	No symptom	upper anterior sigmoid colon and the rectum	Laparotomy	Delivered normal baby with AS 9-10 weighed 1990g	Discharge 14th post-operative day
Abed et al. (2016)	28yo	Spontaneous	Multigravida	14	Abdominal pain and vomiting	greater omentum below the right hepatic loop.	Emergency laparotomy	Preserving viable IUP	No data
Maciel et al. (2017)	34yo	Spontaneous	Multigravida	16	No symptom	Left broad	Laparotomy	Vaginal birth of healthy male baby	Discharged on the 2nd

Author (year)	MA	Method of Conception	Gravidity	GA (Weeks)	Clinical Appearance	Site of implantation	Treatment	Pregnancy Outcome	Duration of Hospitalized or need ICU
Ashraf ganjo ei et al. (201G)	32yo	Spontaneous	Multigravida	13	Acute abdominal pain, nausea, and vomiting	ligament Culdesac	Laparotomy emergency	at 37 weeks Vaginal birth of healthy baby at 37 weeks	day after delivery Discharged on few days post-operative day
Wang et al. (2020)	33yo	Embryo transfer	Multigravida	7	Left back pain after curettage due to fetal arrest	Left psoas major muscle	Laparotomy	Both embryo arrest, and d curettage w as performed	No data
Ozawa et al. (2021)	36yo	Spontaneous	No data	6	Extreme abdominal pain	Vesico-uterine pouch	Laparotomy	Delivered healthy baby at term	No data
Momt ahan et al. (2021)	31yo	Spontaneous	primigravida	37	Labor pain	Caecum, Right adnexa , and pelvic cavity right side	C-section and T shaped extend ed skin incision	Two healthy babies post C-Section (IUP and EUP)	Transferred to the ICU post-operation while intubated.
Ku Chee et al. (2022)	30yo	IVF-ET (double frozen ET)	primigravida	8,3	Sudden onset, sharp, colicky abdominal pain with	Uterosacral ligament	Four-port laparoscopy	Preserving viable IUP	discharged well on the 2nd day post-operative

Author (year)	MA	Method of Conception	Gravidity	GA (Weeks)	Clinical Appearance	Site of implantation	Treatment	Pregnancy Outcome	Duration of Hospitalized or need ICU
Utalo dan Getu (2022)	25yo	Spontaneous	Multigravida	38	Advanced labor pain of 18 h duration	Small bowel mesentery and broad ligament	Laparotomy	Delivered normal alive female baby spontaneously	The patient was discharged on day 8 th post-operative
Julien et al. (2024)	34yo	Spontaneous	Multigravida	8	Pain on defecation	Pouch of Douglas	Exploratory laparoscopy	Preserving viable IUP	Discharged on the 2 nd day after admission

From the reported cases, it was found that mothers experiencing heterotopic abdominal pregnancy varied in age, with the youngest being 25 years old and the oldest 37 years old. Out of a total of 14 cases of abdominal heterotopic pregnancy, 9 occurred spontaneously and 6 cases occurred after assisted reproductive technology (ART). Spontaneous heterotopic pregnancies, some of which had a history of pelvic inflammatory disease (PID) and curettage. Based on clinical manifestations, 7 out of 13 patients experienced abdominal pain accompanied by nausea and vomiting, 2 patients experienced labor pains, and one patient complained of pain during defecation. 3 other patients reported no complaints, and none of the patients experienced vaginal bleeding. All cases underwent transvaginal ultrasound (TVUS), and some patients underwent MRI to determine the exact location of the gestational sac.

All cases were treated with laparotomy or laparoscopy, except for one case of a 31-year-old primigravida mother. Heterotopic pregnancy in this patient occurred spontaneously. The mother had no complaints during her pregnancy and it was only known through ultrasound examination that she had twins pregnancy with a thick membrane between the two fetuses. During the birth process, it was discovered that only one baby was born. No additional fetuses were found in the uterine cavity. After the placenta was delivered, the uterus was brought out through the incision, revealing an intact amniotic sac in the abdominal cavity. The skin incision was extended to form a T-shape, and a baby girl was delivered with Apgar scores of 8 at one minute and 10 at five minutes. Her weight was 2200 grams.

Overall, 76.9% (10 out of 13) of the reported intrauterine pregnancies (IUPs) had a positive outcome. All the newborns were healthy. There's also a healthy livebirth from EUP reported in one case, and the other one live at birth but died on day seventh.

DISCUSSION

Symptoms of heterotopic pregnancy are usually mild and can be assessed as the usual pains experienced in early pregnancy¹. Moreover, cervical bleeding, which is a common symptom of ectopic pregnancy, is absent in 50% of cases and typically not present in heterotopic pregnancy. Bleeding is rarely occurred in heterotopic pregnancies due to the intact endometrium of the intrauterine pregnancy¹. Cervical heterotopic pregnancy is becoming more common due to the rise in pregnancies from IVF treatment¹⁷. Abdominal pregnancy have a significant risk to both the mother and fetus, making the early diagnosis crucial. This is mainly because of the potential for massive hemorrhage from partial or complete placental separation. The placenta can attach to the uterine wall, bowel, mesentery, liver, spleen, bladder, and ligaments, any of which can separate during pregnancy, leading to severe blood loss¹⁸.

The guidelines for diagnosing primary abdominal pregnancy were established several decades ago by Studdiford in 1942. These criteria include: (i) intact fallopian tubes and ovaries without signs of recent or past injury; (ii) absence of a connection between the uterus and placenta; and (iii) initial implantation in the peritoneum without subsequent implantation after the initial placement in the fallopian tube. Heterotopic pregnancy is clinically difficult to diagnosed and often leading to misdiagnosed. The existence of an intrauterine pregnancy, whether viable or not, might masking the ectopic aspect of a heterotopic pregnancy, leading to a delay in diagnosis²⁰. There are some types of heterotopic pregnancy, like intrauterine with tubal, cervical, abdominal, cornual or ovarian pregnancy and most of case were located in the fallopian tube²¹.

The primary method for diagnosing Heterotopic Pregnancy is ultrasonography, particularly transvaginal ultrasonography (TVUS). TVUS has demonstrated a sensitivity of 92.4% and a specificity of 100% for detecting HP, with positive and negative predictive values of 100% and 99.9%, respectively²⁰. Before ultrasonography became widely available, the definitive diagnosis was made by opening the peritoneal cavity through laparotomy or laparoscopy. Nowadays, diagnosis mainly depends on transvaginal ultrasonography. In uncertain or unclear situations, magnetic resonance imaging (MRI) can be useful²². When we found a case with complicated heterotopic pregnancy where the intrauterine pregnancy is intended to be preserved, pharmacological treatment is not an option. Instead, surgical options such as laparoscopy or laparotomy are available. Some research indicates that performing laparoscopy during pregnancy may carry a higher risk of fetal loss, (includes the research done by Cohen-Kerem et al., in 2005 with the result pooled relative risk=1.91; 95% CI 1.31–2.77) compared to laparotomy, although the literature presents inconsistent findings. In an examination of 81 case of heterotopic pregnancy carried out by Li et al. in 2013 at a tertiary health facility, surgery was the primary approach in the majority of cases (64%), with conservative

management employed in the remaining cases.

In pregnancy patient, it is essential to consider the risks of anesthesia given to mothers and the potential effects of medications on fetal development during medical procedures. Certain studies suggest an increased risk of neurological issues, including hydrocephalus, eye abnormalities, and microcephaly in the fetus when general anesthesia is used during the first trimester of pregnancy²⁴. In this case, the patient with a heterotopic pregnancy and a history of laparotomy underwent an emergency cesarean section (C-section) due to abnormal NST (non-stress test) results. The CTG (cardiotocography) showed a fetal heart rate of 80 bpm, indicating bradycardia. During the C-section, an exploration revealed cloudy amniotic fluid or Meconium-stained amniotic fluid (MSAF). MSAF is usually associated to fetal distress, low birth weight, NICU admissions, and neonatal mortality. However, in our case, a baby boy was born healthily with a birth weight of 3430 grams, length of 49 cm, and an Apgar score of 8-9.

Other case reports of heterotopic pregnancies especially heterotopic abdominal pregnancy have been documented. **Table 1.** summarizes the specifics of several cases. We identified a total of 13 relevant articles, from 2004 to 2023. We exclusively choose full-text articles, focusing on studies involving women aged 18 years and above.

CONCLUSION

Clinicians should consider the possibility of heterotopic pregnancy in any patient presenting with amenorrhea, abdominal pain, adnexal mass, peritoneal irritation, and an enlarged uterus, even when an intrauterine.

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