

A-2.8 KG NEONATE BORN FROM NEGLECTED ADVANCED ABDOMINAL ECTOPIC PREGNANCY: A CASE REPORT

Anberbir Girma¹, Tofik Mudesir¹, Dejene Asefa¹,
Tilahun Habte², Negase Abebe³, Temesgen Tilahun³

ABSTRACT

BACKGROUND: Abdominal pregnancy is a rare and life-threatening type of ectopic pregnancy, with an incidence of approximately 1 in 10,000 to 1 in 30,000 pregnancies. Diagnosis and management can be challenging, particularly in low-resource settings.

CASE REPORT: We report a case of advanced abdominal ectopic pregnancy resulting in a live female neonate weighing 2800 grams, delivered through laparotomy. The patient is a 30-year-old woman from rural Ethiopia, gravida 5 para 4, who does not recall her last normal menstrual period but has been amenorrheic for the past 8 and 1/2 months. She presented with abdominal discomfort and an increase in fetal movement in the upper abdomen over the past 20 days. Both the mother and the newborn are doing well and were discharged in good condition.

CONCLUSION: Advanced abdominal ectopic pregnancy is an exceedingly rare pre-operative diagnosis. Careful planning that involves a multidisciplinary team is crucial to avoid unforeseen life-threatening complications.

KEYWORDS: Advanced abdominal ectopic pregnancy, case report, laparotomy

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1 Department of Obstetrics and Gynecology, Jimma University, Jimma, Ethiopia

2 Department of Surgery, Jimma University, Jimma, Ethiopia

3 Department of Obstetrics and Gynecology, Wollega University, Nekemte, Ethiopia

INTRODUCTION

Abdominal pregnancy is one of the rare and life-threatening types of ectopic pregnancy that has implanted in the peritoneal cavity outside of the uterus, fallopian tube, ovary, and broad ligament. The incidence of abdominal pregnancy differs in various studies and ranges between 1:10,000 and 1:30,000 live births or 1% of ectopic pregnancies^{1, 2}. An abdominal ectopic pregnancy can be classified as primary or secondary. If the fertilization and implantation are in the peritoneal cavity from the outset, it is called a primary abdominal pregnancy, while if the abdominal pregnancy happens after tubal rupture, abortion, or uterine rupture with secondary implantation over the peritoneum, it is called a secondary type. Although it is difficult to differentiate between the two, secondary abdominal pregnancy is common^{2,4}. One of the most important factors that affect the management of abdominal ectopic pregnancy and its outcome is gestational age at the time of diagnosis. Depending on gestational age at the time of diagnosis, abdominal ectopic pregnancy is classified into early and advanced stages, even if there is no agreement among experts on the cutoff point. However, most experts agree that pregnancy beyond 20 weeks of gestational age is considered advanced^{2,5}. The risk of mortality, both in the mother and fetus, is much increased due to abdominal pregnancy management challenges and delays in diagnosis. A maternal mortality rate between 0.5 and 20% and a perinatal mortality rate between 40 and 95% were reported, which shows that the maternal mortality rates are 7.7 times higher than in tubal pregnancy and 90 times higher than in intrauterine pregnancy^{2, 6, 7}.

Risk factors for abdominal pregnancy are the same as those for tubal ectopic pregnancy and include tubal damage, pelvic inflammatory disease, endometriosis, assisted reproductive techniques, and multi-parity^{8,9}. Early diagnosis of an abdominal pregnancy is difficult since it is associated with a wide range of signs and symptoms, so a high index

of suspicion is important^{10, 11}. Ultrasound is the most effective method for diagnosing an abdominal ectopic pregnancy¹². Here we present a case of successfully managed advanced abdominal ectopic pregnancy with good perinatal outcome.

CASE PRESENTATION

This is a 30-year-old, gravida V, para IV woman from Ethiopia. She has two living children and has experienced two pregnancies that ended in early neonatal death. All of her previous deliveries were vaginal and took place at home. Her last delivery was six years ago. She does not recall her last menstrual period but claims to have been amenorrheic for the past eight and a half months. During this pregnancy, she attended only one antenatal care visit at a nearby health center, and no ultrasound was performed. She recently presented to Mizan Tepi University Hospital, complaining of abdominal discomfort and increased fetal movement in the upper abdomen for the past 20 days. Additionally, she had a history of dark red, non-clotted, and spotty vaginal bleeding, with one episode occurring 20 days ago. The hospital referred her to Jimma University Medical Center with a diagnosis of third-trimester pregnancy, suspected ectopic abdominal pregnancy, and bad obstetric history (BOH). She denied any history of abdominal trauma or chronic medical conditions. Her past surgical history is also unremarkable. She is farmer and had sub-optimal nutritional history.

Upon examination, the patient appeared emaciated. Her vital signs were within the normal range. She exhibited slightly pale conjunctiva. The lymphatic system, chest, and cardiovascular system were all assessed as normal. However, the abdominal examination revealed a distended abdomen, with easily palpable fetal parts. The fetus was in a transverse lie, with the fetal head located in the right flank. During the pelvic examination, the cervix was found to be posterior and not effaced.

An obstetric ultrasound showed a viable singleton pregnancy located in the abdominal cavity, with a gestational age of 35 weeks and 4 days. Most parts

of the uterus are clearly seen, but the placenta is attached to the outer posterior aspect of the uterine fundus. Free peritoneal fluid was present. The impression was an advanced abdominal ectopic pregnancy. All investigations were within normal limits, except for moderate anemia.

The patient was admitted to the maternity ward, and a consultation was held with the surgical team. Preoperatively, she received two units of cross-matched whole blood. After discussion and

obtaining informed consent, she was transferred to the operating theater, where a multidisciplinary team performed a laparotomy through a mid-line vertical skin incision. During the procedure, the gestational sac was ruptured to deliver a female neonate weighing 2800 grams, who had APGAR scores 6 and 9 at 1st and 5th minutes, respectively. The placenta was found attached to the posterior uterine wall at the fundus and extended to the right side of the adnexa (see Fig 1).

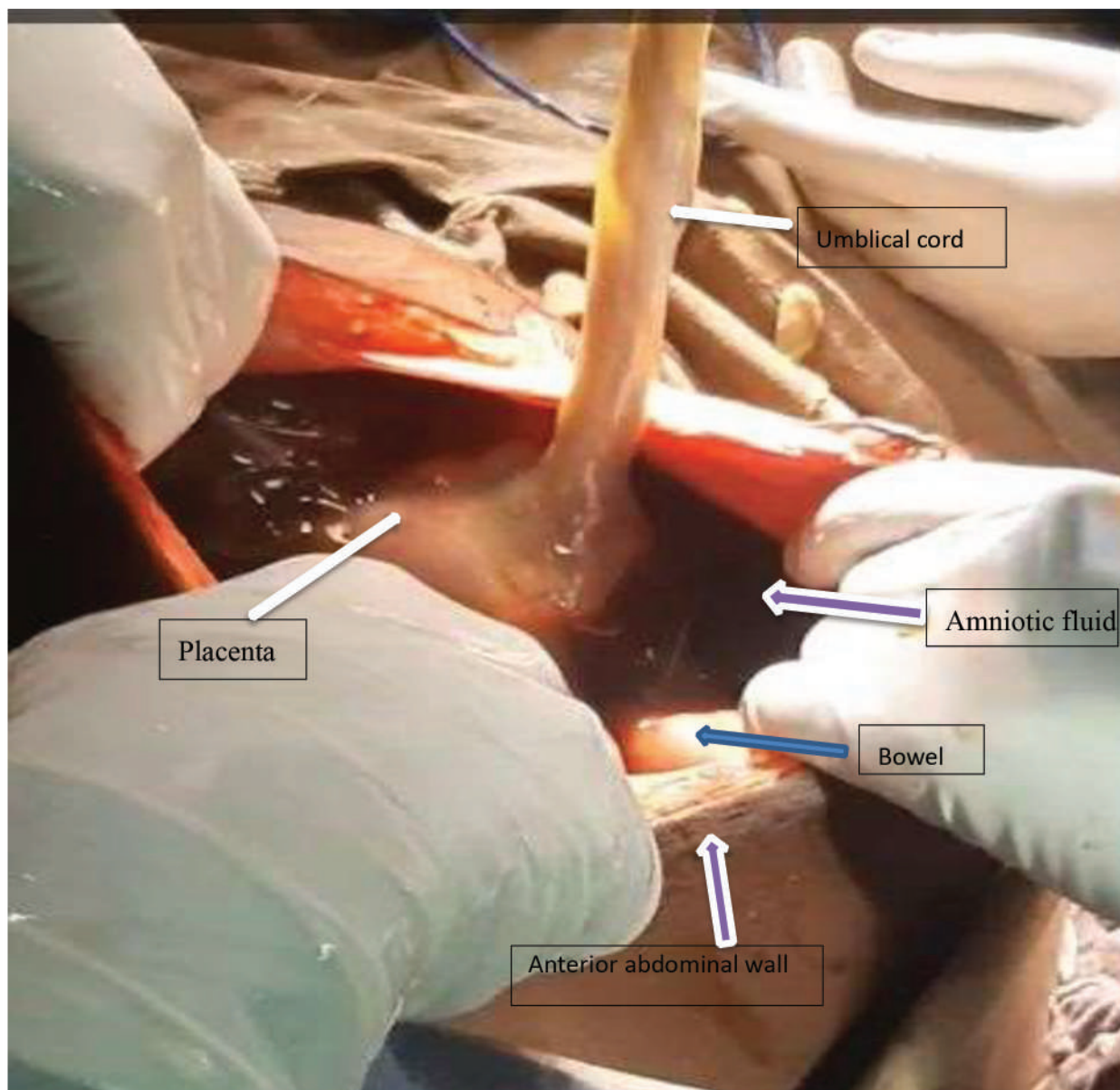


Figure 1: Placental attachment in advanced abdominal ectopic pregnancy, Jimma University Medical Center, 2024

Following delivery of the placenta (see Fig 2), a uterine defect was identified on the postero-lateral wall, secondary to placental invasion.

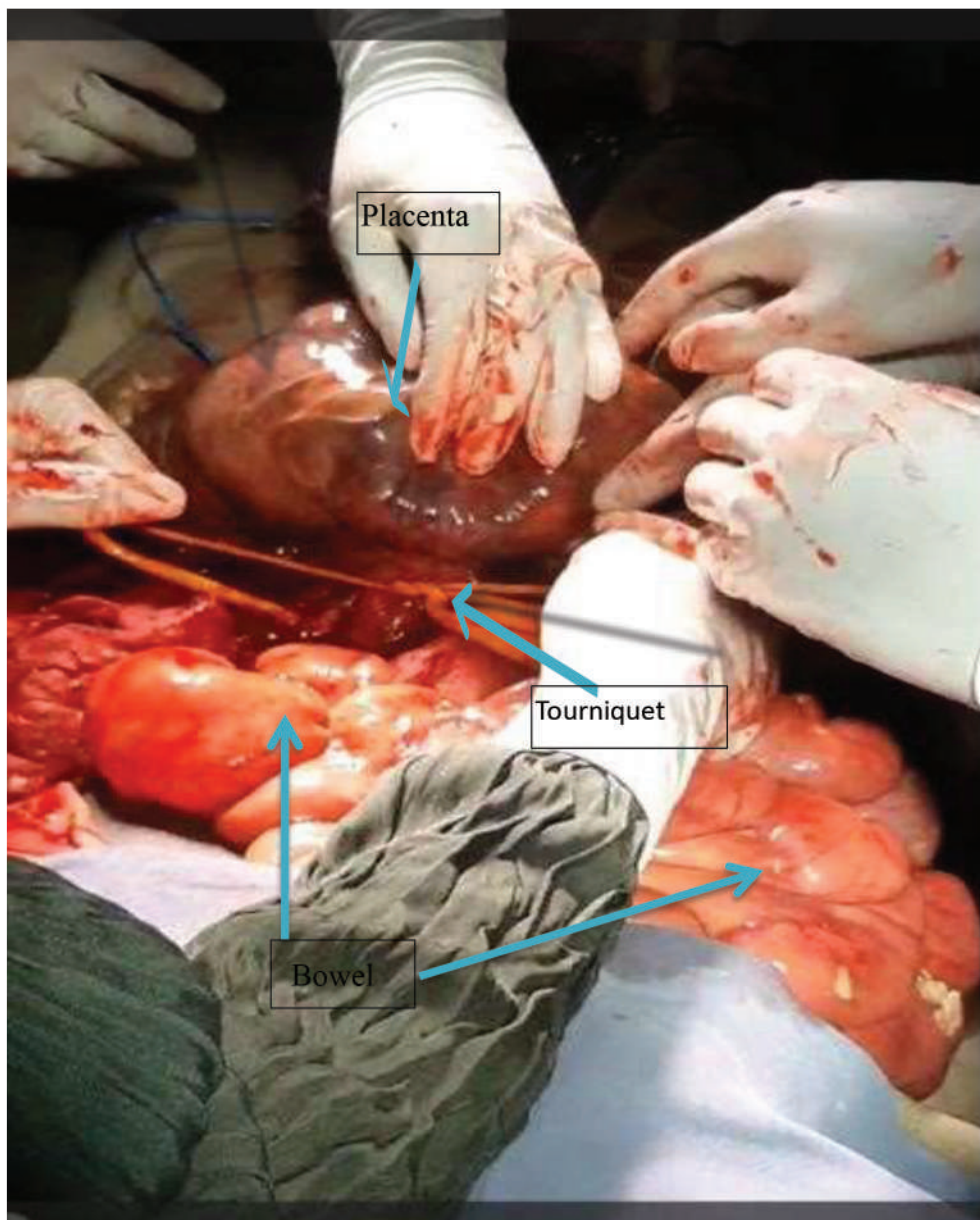


Figure 2: Delivery of placenta in advanced abdominal ectopic pregnancy, Jimma University Medical Center, 2024

The defect was primarily on the right side, with a vertical extension of approximately 10 cm from the fundus toward the cervix (see Fig 3).

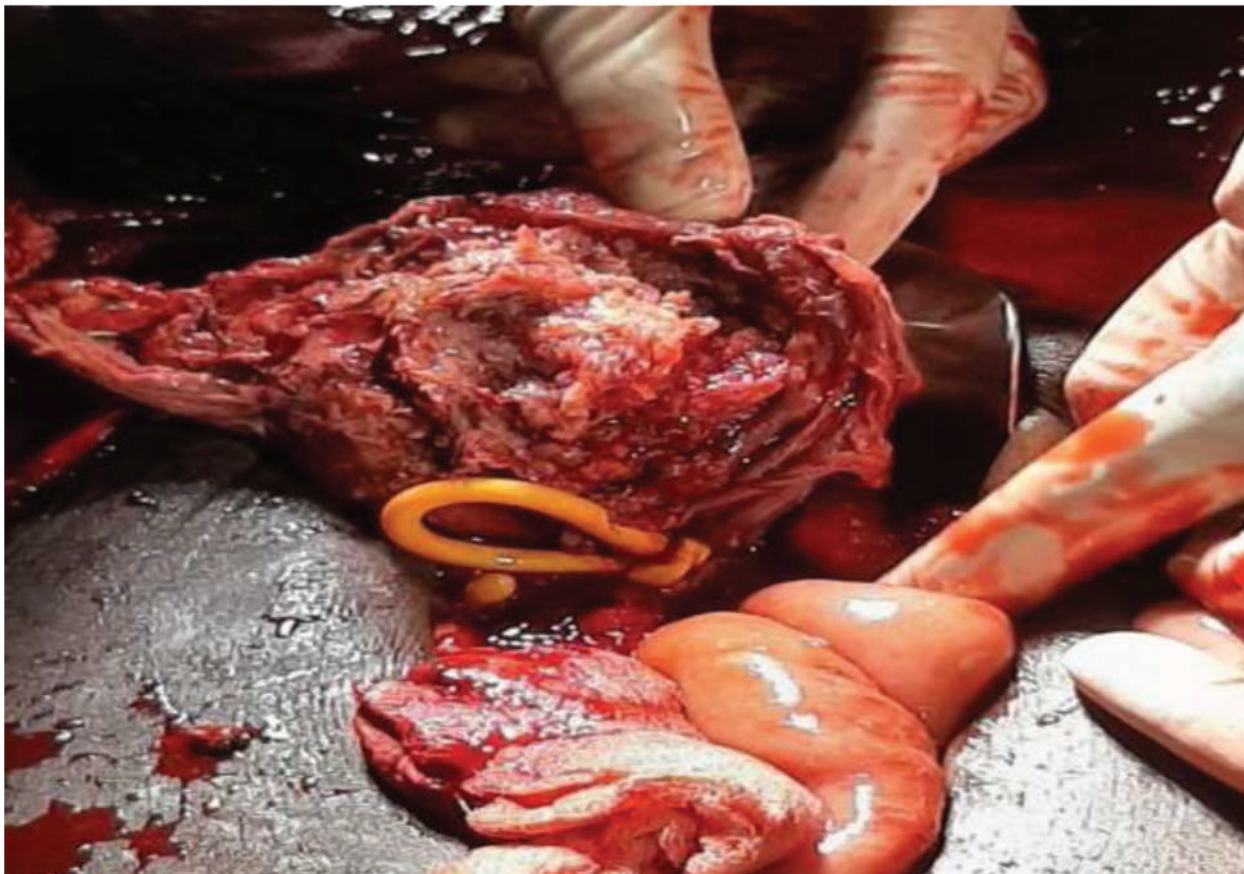


Figure 3: Posterior uterine wall defect from placental attachment in advanced abdominal ectopic pregnancy, Jimma University Medical Center, 2024

A subtotal hysterectomy along with a right-sided salpingo-oophorectomy was then performed. The estimated blood loss during the surgery was 1500 ml. She received an additional two units of blood intra-operatively. She was transferred to the ward with stable vital signs.

Post-operatively, she was on maintenance fluids and scheduled analgesia. Overall, her recovery was smooth, and her post-operative hemoglobin level was 9.4 g/dl. The neonate, however, was referred to the NICU due to fast breathing and was empirically treated with antibiotics for early-onset neonatal sepsis. Both the mother and the newborn

were discharged in good condition on the seventh postoperative day. The mother was advised to attend regular postpartum follow-ups. Consequently, her subsequent check-ups indicated that she was in good health and that the infant was experiencing normal growth.

DISCUSSION

Ectopic pregnancies, which occur in about 1-2% of all pregnancies, happen when the blastocyst implants in a location other than the endometrial cavity³. One rare and life-threatening type of ectopic pregnancy is abdominal pregnancy, where the blastocyst implants in the peritoneal cavity outside the uterus, fallopian tube, ovary, or broad ligament^{1,2}. It can be primary or secondary. An advanced abdominal pregnancy is typically defined as one that progresses beyond 20 weeks of gestation with a growing and developing fetus. It is associated with increased maternal and fetal complications²⁻⁵. Early diagnosis of abdominal pregnancy can be challenging due to its association with nonspecific complaints including abdominal pain, vaginal bleeding, nausea, and/or vomiting. As the pregnancy progresses, patients may experience recurrent abdominal discomfort, painful fetal movements (often described as exaggerated), cessation of fetal movement, and easily palpable fetal parts. Malpresentation, typically a transverse lie, may also occur. The cervix may remain uneffaced and closed, and there may be failed induction of labor. In rare cases, patients may present with signs of acute abdomen and shock due to severe intra-abdominal hemorrhage resulting from placental separation. Unfortunately, this condition can go undetected until the later stages of gestation^{10, 11, 14}. Our case presented with similar symptoms and signs.

A high degree of clinical suspicion, along with imaging methods such as ultrasound, represents the most effective strategy for diagnosing an abdominal ectopic pregnancy¹². The typical ultrasound finding is the absence of myometrial tissue between the maternal bladder and the pregnancy¹⁵. The other ultrasound findings are an empty uterus, poorly defined placenta, oligohydramnios, and unusual fetal positioning^{1, 5}. CT scans and MRIs may be needed to confirm diagnosis, clarify anatomy and vascular connections, and placental implantation¹⁷. In our case, the diagnosis was made by obstetric ultrasound examination.

The management of an abdominal ectopic pregnancy relies on various factors, including the gestational age at diagnosis, as well as the conditions of the fetus and the mother. If the pregnancy is identified early, the safest option is to terminate it. This can be accomplished through laparoscopic or open surgery, possibly assisted by arterial embolization¹⁸. Alternatively, medical management options such as the intracapsular injection of potassium chloride or methotrexate may be considered as non-surgical alternatives³. If a diagnosis of advanced abdominal ectopic pregnancy is made late in pregnancy, expectant management may be considered to allow for fetal maturity¹⁹. However, surgical intervention is the primary treatment option for advanced abdominal pregnancy. While delivering the fetus can be relatively straightforward, the main concern lies in managing the placenta. There are two approaches for placenta management: the first involves removing the placenta after ligating its blood vessels²⁰. The second approach, in difficult placental removal, is leaving the placenta in situ. This is followed by close follow-up for possible complications like abscess formation, sepsis, or delayed hemorrhage¹². In this case, the placenta was attached to the posterior uterine wall and right adnexa, resulting in a uterine defect after its removal. Consequently, the managing team decided to perform a hysterectomy and a right-sided salpingo-oophorectomy. The risk of mortality for both the mother and fetus significantly increases due to the challenges in managing abdominal pregnancies and delays in diagnosis. The overall maternal mortality rate ranges from 0.5% to 20%. Perinatal loss is also very high, ranging from 40% to 95%^{2,6,7}. In addition to the risk of death, fetal deformities are common; these can include facial and/or cranial asymmetry, joint abnormalities, hypoplastic limbs, and various malformations of the central nervous system¹². In our case, because of a well-designed plan and engagement of the multidisciplinary team, the perinatal outcome was good. Newborn examination showed no abnormality. Both the mother and the baby were discharged on the seventh day after the operation.

CONCLUSION

Advanced abdominal ectopic pregnancy is an exceedingly rare pre-operative diagnosis. A high degree of suspicion is essential for making a prompt and accurate diagnosis, as this condition can progress to term. A well-structured plan that involves a multidisciplinary team is crucial to preventing unexpected and life-threatening complications, especially in resource-limited settings.

ABBREVIATIONS

APGAR: Appearance, Pulse, Grimace, Activity, and Respiration;

BOH: bad obstetric history;

NICU: neonatal intensive care unit

DECLARATIONS

Ethics approval and consent to participate: Jimma University has approved the publication of this case. The study protocol is performed in accordance with the relevant guidelines.

CONSENT FOR PUBLICATION

Written informed consent was obtained from the patient for publication of clinical details and clinical images. A copy of the written consent is available for review by the editor of the journal.

AVAILABILITY OF DATA AND MATERIALS

The data and materials are available on request from the corresponding author.

COMPETING INTERESTS

There are no competing interests

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AUTHORS' CONTRIBUTIONS

AG, TM, DA, TH, NA, & TT were involved in manuscript preparation. NA prepared Figures 1- 3. All authors reviewed the manuscript.

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AUTHORS' DETAIL

AG is Assistant Professor of obstetrics & gynecology, Jimma University; TM is Assistant Professor of obstetrics & gynecology, Jimma University; DA is Assistant Professor of obstetrics & gynecology, Jimma University; TH is Assistant Professor of Surgery, Jimma University; NA is Assistant Professor of obstetrics & gynecology, Wollega University; TT is Associate Professor of obstetrics & gynecology, Wollega University;

The corresponding author

Email: ttamuko@yahoo.com

ORCID: <https://orcid.org/0000-0003-4138-4066>

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