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CASE REPORT

Surviving fetus from a preterm abdominal pregnancy

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ABSTRACT

Background: Abdominal pregnancy is a rare and severe form of ectopic pregnancy in which the embryo implants in the peritoneal cavity, rather than in the fallopian tubes, ovaries, or uterine ligaments. Based on the implantation site, abdominal pregnancy is classified into primary and secondary types. The clinical symptoms of abdominal pregnancy, as described in various references, are typically nonspecific. Combined with imaging is critical in establishing an early and accurate diagnosis. **Objective:** This is a case report of surviving fetus from a preterm abdominal pregnancy. **Case:** Herein we report on a case of a 30-year-old woman with a history of obstetrics G2P1A0 and a gestational age of 24-26 weeks with an abdominal pregnancy and managed successfully with an outcome of a live neonate weighing 800 grams and measuring 30 cm in length. Surgery was the treatment of choice for the patient. Two laparotomies were performed on the patient. The first operation was to deliver the fetus and the second operation was total hysterectomy and bilateral salpingectomy. **Conclusion:** Cases of fetuses surviving abdominal pregnancy are extremely rare, compounded by the fact that the fetus is often preterm and not viable for delivery. Regular antenatal check-ups combined with imaging are crucial for making an early and accurate diagnosis, allowing for timely management adjustments and preventing further deterioration of both maternal and fetal conditions.

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Highlights

1. Abdominal pregnancy is a highrisk pregnancy resulting on mortality in both fetus and mother due to massive hemorrhage.
2. Abdominal pregnancy needs a comprehensive medical management involving multidiscipline medical expert including obstetric and gynaecology, anaesthesiologist,

BACKGROUND

Maternal mortality has been reduced during the past fifteen years by 34.3%, and the annual rate of reduction was 2.1% globally during twenty years (WHO, 2023), however the rates are raising, that a womand died every tw minute (Khalil et al., 2023). The causes of maternal death 27.5% due to indirect causes, such as non-communicable diseases (e.g. diabetes, hypertension) or pre-existing disorders (e.g. HIV infection, sepsis, mental disease) (Khalil et al., 2023); or direct causes in the form of complications such as severe hemorrhage, pulmonary embolism, abortion (Say et al., 2014), anemia, Disseminated Intravascular Coagulation (DIC), and gastrointestinal fistulas, resulting from retained fetal bones. Perinatal morbidity rates range from 40% to 95%, even when the pregnancy progresses to term, with congenital anomalies observed in 20% to 40% of neonates, primarily due to oligohydramnios (Brewster et al., 2011; Zhang et al., 2008).

Abdominal pregnancy is one of the cause of maternal mortality and neonatal death due to massive hemorrhage at separated placenta (Abdul Jabbar et al., 2018). It is a rare and severe form of ectopic pregnancy in which the embryo implants in the peritoneal cavity, rather than in the fallopian tubes, ovaries, or uterine ligaments (Abdullah et al., 2023; Cunningham et al., 2019). Accounting for approximately 1% of all ectopic pregnancies, this condition presents significant risks for both the mother and fetus (Agarwal dan Odejinmi, 2014; Durden et al., 2024). It occurs as a result of uterine rupture or tubal abortion (secondary abdominal pregnancy) or, more rarely, from direct implantation on the peritoneum when the fallopian tubes and ovaries remain intact (primary abdominal pregnancy.

Diagnosis is often delayed due to the nonspecific nature of symptoms or the absence of symptoms altogether (Suryawan et al., 2023; Zuñiga et al., 2022), or the lack of specialist and reliance on tradtional healers (Christian-Bardol et al., 2024), making it undetected until fullterms, leading on complication, with high risk of feto-maternal morbidity and mortality (Bohiltea et al., 2015). The clinical symptoms depend on the gestational age (Christian-Bardol et al., 2024) or the implantation site (Bohiltea et al., 2015), but the most common presenting complaint is abdominal pain (Bohiltea et al., 2015), often accompanied by signs of obstruction or inflammation depending on the location of placental implantation (Zachariah et al., 2019). Ultrasonography findings typically reveal the presence of a fetus outside the uterus, with no visible uterine wall between the bladder and fetus (Cunningham et al., 2019). Despite these challenges, achieving a live birth in advanced abdominal pregnancy is exceedingly rare and represents a significant success in modern obstetric care.

The article presenting a case report highlighting the successful delivery of a preterm live fetus from an advanced abdominal pregnancy, underscoring the importance of early diagnosis, meticulous surgical planning, and multidisciplinary management. By sharing this rare case, we hope to contribute to the understanding of this condition and provide practical insights for clinicians. The findings emphasize the potential for favorable outcomes even in high-risk conditions and underscore the critical role of timely intervention, particularly in resource-limited settings where abdominal pregnancy is more common.

OBJECTIVE

The purpose of this case report to describe a surviving fetus from an abdominal pregnancy.

CASE

A 30-year-old woman with a history of obstetrics G2P1A0 and a gestational age of 24-26 weeks first attended antenatal care at 7 weeks of pregnancy at Berau General Hospital. At that time, she was suspected of having an ectopic pregnancy but did not return for follow-up until her pregnancy reached 24 weeks. During this visit, she was diagnosed with an abdominal pregnancy and referred to Hermina Hospital Samarinda.

Previously, an ultrasonography evaluation was conducted by an obstetrician-gynecologist, which revealed a clearly identifiable uterus with visible endometrial lining and a discernible uterine fundus. However, the uterine position did not support normal placental implantation. The placenta was observed outside the typical implantation site within the uterus, suggesting ectopic implantation or placental positional abnormality. No uterine placental attachment was found. The fetal head was visualized

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superiorly, near the xiphoid process, with the fetal body appearing slightly bent. Fetal cardiac activity was positive (indicating viability), but the fetus was located outside the uterine cavity. The presence of intestinal loops in the pelvic region suggested the fetus was situated extrauterinely.

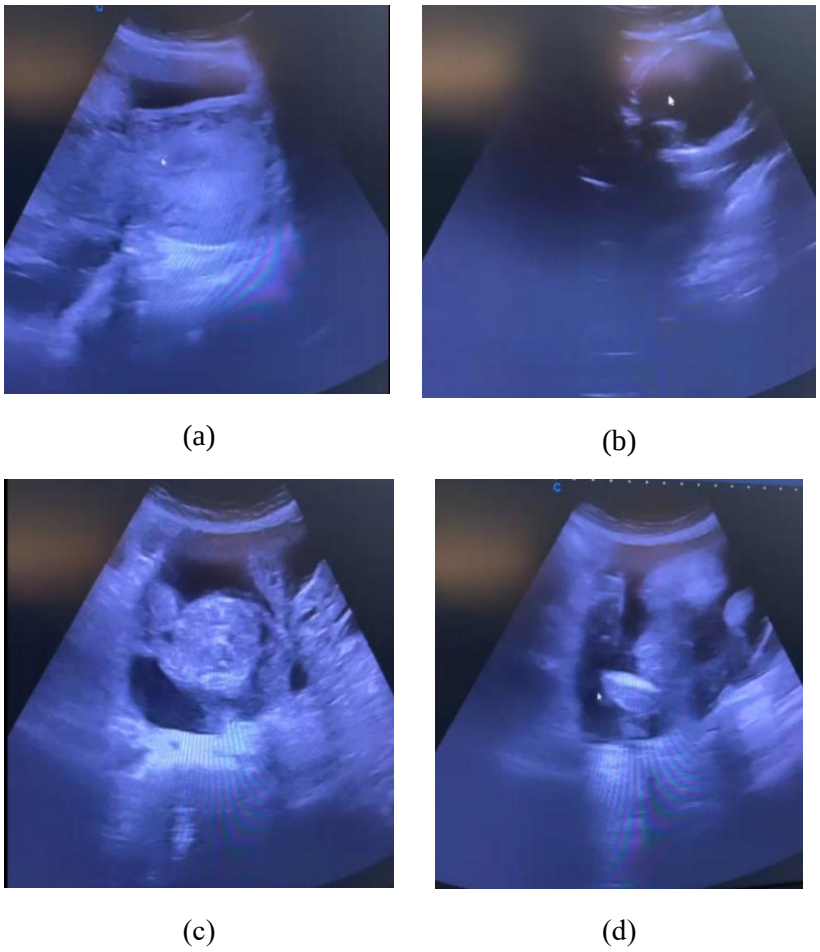

Figure 1. (a). Uterus with visible endometrial line; (b). The fetal head is slightly bent; (c). No placental implantation site was found in the uterus; and (d). Intestines are visible in the pelvic area.

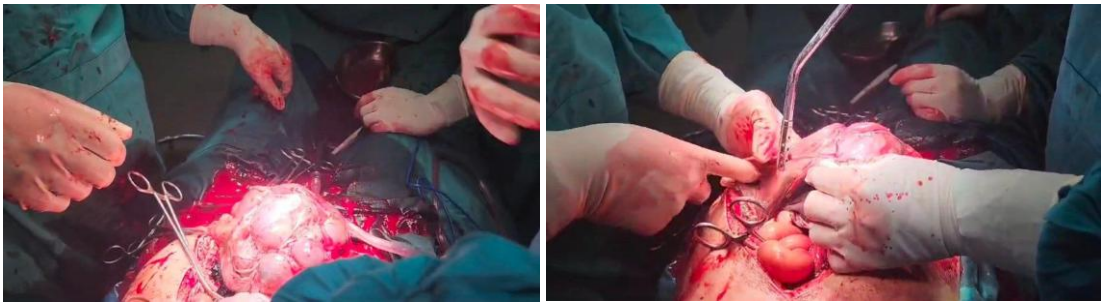

Figure 2. Exploratory laparotomy to evaluate uterine adhesions placental expulsion process

At Hermina Hospital Samarinda, a laparotomy was performed to deliver the fetus. Upon peritoneal incision, it was discovered that the placenta was partially implanted within the uterus and partially adhered to other tissues, resulting in intraoperative hemorrhage. A conservative approach was taken to preserve the uterus, as the patient had only one living child. After the surgery, the patient was observed in the ICU and managed with vasopressor support (vascon 0.5 mg). However, the patient's abdominal distension worsened, and her hemoglobin levels continued to drop. Eventually, the patient experienced cardiac arrest. A decision was made to perform a second surgery, which involved a total hysterectomy

and bilateral salpingectomy. During the first surgery, the patient had successfully delivered a live baby weighing 800 grams and measuring 30 cm in length.

Figure 3. The patient had successfully delivered a live baby weighing 800 grams and measuring 30 cm in length.

Figure 4. The second operation, a total hysterectomy and bilateral salpingectomy were performed.

DISCUSSION

Abdominal pregnancy is a rare form of ectopic pregnancy, accounting for approximately 1% of all ectopic pregnancies, with an incidence of about 1:2.200 to 1:10.200 pregnancies and 1:6.000 to 1:9.000 live births (Agarwal dan Odejinmi, 2014; Durden et al., 2024). Similarly, cases of viable fetuses in abdominal pregnancies are extremely rare, and surviving neonates are reported to have high rates of fetal deformities and perinatal mortality (Dubinsky et al., 1996; Legesse et al., 2023). Maternal mortality in abdominal pregnancy reaches 20% due to massive hemorrhage (Durden et al., 2024). It was found that the ectopic pregnancy increase the risk of maternal mortality by 7.7-times, while the uterine pregnancy increases the risk by 90-times (Abdul Jabbar et al., 2018). Based on the implantation site, abdominal pregnancy is classified into primary and secondary types (Abdullah et al., 2023; Okafor et al., 2011).

Primary abdominal pregnancy refers to cases where the fertilized ovum implants directly in the abdominal cavity, with intact fallopian tubes and ovaries. In contrast, secondary abdominal pregnancy occurs when conception escapes from the female reproductive organs and secondarily implants within the abdominal cavity. This may happen following the rupture of a tubal ectopic pregnancy or miscarriage, with reimplantation in the abdomen (Agarwal dan Odejinmi, 2014; Okafor et al., 2011). In our case, the patient presented at 24 weeks of gestation, and exploratory laparotomy revealed partial placental adhesion to the uterus (Figure 7), suggesting a secondary form of abdominal pregnancy. Notably, the classification of abdominal pregnancy does not impact its clinical management (Legesse et al., 2023). Risk factors for abdominal pregnancy are similar to those of other ectopic pregnancies, including previous ectopic pregnancy, tubal surgery/rupture, endometriosis, and pelvic inflammatory disease (George et al., 2021). Additional factors, such as toxins and immunological disorders, may also

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contribute to ectopic pregnancy (Panelli et al., 2015). In advanced gestational age, abdominal pregnancy often goes undetected, complicating both diagnosis and management. The clinical symptoms of abdominal pregnancy, as described in various references, are typically nonspecific. The most frequently reported symptoms include persistent abdominal or suprapubic pain that does not resemble labor signs, absence of menstrual delay, bloody vaginal discharge, gastrointestinal symptoms such as nausea and vomiting, painful fetal movements, general malaise, and altered bowel patterns (Molinaro dan Barnhart, 2007; Nkusu Nunyalulendho dan Einterz, 2008; Tsudo et al., 1997).

Since abdominal pregnancy may present without symptoms, ultrasonographic examination is essential for diagnosing abdominal pregnancy, even before 12 weeks of gestation. Early detection allows for timely management adjustments and prevents worsening complications for both the mother and fetus (ELmiski et al., 2021). A high index of suspicion combined with imaging is critical in establishing an early and accurate diagnosis, thereby preventing potential maternal complications (Legesse et al., 2023). Maternal complications associated with abdominal pregnancy include uncontrollable hemorrhage, which can lead to maternal mortality, bowel obstruction, abscess, and fistula formation. In cases of lithopedion (a dead and calcified abdominal pregnancy), complications may worsen. Fetal complications include congenital malformations and perinatal mortality, with common malformations being talipes equinovarus, hypoplastic limbs, and craniofacial asymmetry (Cunningham et al., 2019; Legesse et al., 2023).

Routine ultrasonography (USG) evaluation is recommended for pregnant women during the mid-second trimester (18-22 weeks) to detect fetal anomalies and growth abnormalities. Detailed USG reports should include gestational age, maternal organs (cervix, uterus, and adnexa), placental location, and fetal anatomy (Abdullah et al., 2023; Agarwal dan Odejinmi, 2014). A diagnosis of abdominal pregnancy is established if a gestational sac or mass is identified in the abdomen, with an empty uterus and no involvement of the fallopian tubes or ovaries (Abdullah et al., 2023; Legesse et al., 2023). If ultrasonography findings are inconclusive for abdominal pregnancy, magnetic resonance imaging (MRI) serves as an additional imaging modality (Abdullah et al., 2023; Mittal et al., 2012). In our case, the diagnosis was missed during the initial ultrasonography evaluation. When the patient returned for antenatal care at 24 weeks of gestation, she exhibited a characteristic symptom: painful fetal movements. This symptom made gynecological examination particularly challenging, as even minimal contact caused significant maternal discomfort.

Limitations

As a single case report, the findings cannot be generalized to a broader population, and detailed information regarding management and long-term outcomes for both the mother and fetus is not provided. Other limitations include the lack of additional imaging modalities such as MRI to confirm the diagnosis, as well as reliance on the patient's subjective symptoms, which may affect the accuracy of clinical diagnosis. Nevertheless, this report serves as an important reference, highlighting the need for broader studies to better understand optimal diagnostic and management approaches for abdominal pregnancy.

CONCLUSION

Cases of fetuses surviving abdominal pregnancy are extremely rare, compounded by the fact that the fetus is often preterm and not viable for delivery. Regular antenatal check-ups combined with imaging are crucial for making an early and accurate diagnosis, allowing for timely management adjustments and preventing further deterioration of both maternal and fetal conditions.

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Conflict of Interest

All authors have no conflict of interest.

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Patient concern for Publication

This case report has been approved by the patient and his/her guardian.

Author Contribution

The author contributed to all processes in this study, including preparation, data gathering and analysis, drafting, and approval for the manuscript's publication.

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