

Intraoperative Encounter of a Live Term Abdominal Pregnancy: A Rare Case Report from Rwanda

Temesgen Tantu Arusi¹, Samsone Habimana¹, Niyomufasha Daniel¹, Bellarmin Matungo¹, Nsanzimana Paul¹, Harerimana Vedaste¹, Yohanna Hailu¹, Uwimana Muhuza Marie Parfaite²

¹Department of Obstetrics and Gynecology, College of Dental and Medical Sciences, Nyagatare Level 2 Teaching Hospital, University of Rwanda, Nyagatare, Eastern Province, Rwanda; ²Rwanda Society of Obstetrician and Gynecologist, Kigali, Rwanda

Correspondence: Temesgen Tantu Arusi, Department of Obstetrics and Gynecology, College of Dental and Medical Sciences, University of Rwanda, Kigali, Rwanda, Tel +250794416768, Email Tematantu405@gmail.com



Background: Abdominal ectopic pregnancy is a rare and serious form of ectopic pregnancy associated with significant fetomaternal complications. This case highlights the importance of a high index of suspicion for diagnosis, especially in low-resource settings.

Case Presentation: A 28-year-old gravida 3, para 2 woman with an unknown gestational age presented to our hospital. She was diagnosed with abdominal ectopic pregnancy intraoperatively, which was missed on multiple ultrasounds performed after 28 weeks. The diagnosis was made intraoperatively during an elective cesarean section performed for presumed placenta previa at term. The pregnancy was implanted on the left fundus, with extension into the adnexal structures, the broad ligament, and part of the left posterior uterine wall, then a hysterectomy was done due to extensive hemorrhage and damage to body of uterus. The pregnancy resulted in a healthy mother and a live term fetus, showcasing a rare positive outcome for such a complicated case.

Conclusion: This case underscores the critical need for early ultrasound examination by trained professionals and the need for clinical vigilance in diagnosing abdominal ectopic pregnancies, particularly in settings where resources are limited. It serves as a reminder to clinicians to remain vigilant and cautious during similar cases to avoid missing such rare but significant diagnoses.

Keywords: ectopic pregnancy, abdominal pregnancy, ultrasound, intraoperative

Background

Abdominal ectopic pregnancy is a rare condition in which the embryo implants and develops within the peritoneal cavity, outside the uterine cavity, fallopian tubes, and ovaries.^{1,2} It accounts for approximately 1% of all ectopic pregnancies, with an incidence ranging from 1:10,000 to 1:30,000 in the general population.² This condition presents significant diagnostic and therapeutic challenges due to its atypical clinical presentation and potential for severe complications.³

Abdominal ectopic pregnancies are classified into two types: primary and secondary. Secondary abdominal pregnancies are more common than primary ones. In a primary abdominal ectopic pregnancy, the fertilized ovum implants directly into the peritoneum. In contrast, a secondary abdominal pregnancy occurs when the fertilized ovum implants after a tubal abortion, rupture of a tubal pregnancy, ruptured intrauterine pregnancy, or ruptured cornual pregnancy.^{4,5}

The clinical presentation of abdominal ectopic pregnancy varies, making diagnosis challenging despite routine ultrasonography during antenatal care.^{6,7} Additionally, there are no clear guidelines for managing abdominal ectopic pregnancies.¹ However, early and accurate diagnosis is crucial to prevent life-threatening complications, as these pregnancies are associated with high perinatal and maternal mortality and morbidity rates.^{7,8}

This rare case report describes a healthy, living fetus resulting from an abdominal ectopic pregnancy secondary to a ruptured cornual ectopic pregnancy. It aims to contribute to the limited literature on abdominal ectopic pregnancies by



detailing a unique case, discussing diagnostic challenges, and exploring effective management strategies. By highlighting this rare condition, we seek to increase clinical awareness and improve patient outcomes through early intervention and comprehensive care. Ultrasound findings for ectopic pregnancy vary widely. Diagnosis should focus on identifying an extrauterine mass, particularly in early pregnancy, rather than 26% of cases.⁹ The only definitive ultrasound sign is the presence of a live embryo, gestational sac, or fetus outside the uterus, though this is observed in only 8–26% of cases.⁹ In unclear cases, suggestive findings such as an empty uterus, pseudosac, free fluid, or an adnexal mass may be present, but these have limited sensitivity and specificity.¹⁰

Case Report

A 28-year-old G3P2 woman with seven months of amenorrhea presented with three days of vaginal bleeding. Referred after two uneventful antenatal visits, she reported no smoking, alcohol, or prior issues. Previous vaginal deliveries were normal. She was referred to our hospital for further management of progressive vaginal spotting. The patient was stable with normal vital signs and no active vaginal bleeding, except for a blood-stained vulva. A 28-year-old woman with a singleton intrauterine pregnancy presented with vaginal bleeding. Ultrasound revealed a transverse lie, complete placenta previa, 28+3 weeks gestation, estimated fetal weight (EFW) of 1200 grams, adequate amniotic fluid, and normal fetal movements. Diagnosed with placenta previa, she was monitored, managed, and discharged after three days for social reasons. Follow-up outpatient visits at 32, 34, and 37 weeks showed no complications. Pre-cesarean ultrasound confirmed an oblique lie, 37+5 weeks gestation, EFW of 2900 grams, posterior placenta covering the cervix, and normal fetal parameters. She underwent an elective cesarean section with no new complaints and normal laboratory results. The skin was opened through a Pfannenstiel incision, and the intraoperative findings were as follows:

- A very thin, bulged hypertrophied membrane was noted, arising out towards abdominal cavity from the left half of the fundus of the uterus including the cornual region and left upper one-third of uterus (Figures 1 and 2).
- The body of the uterus was found to be stacked in the pelvis and tilted to the right side.
- The right half of fundus and whole uterus, ovaries and tubes were healthy and visible, whereas the left half of the fundus, including the left ovaries and tubes, were not visible and appeared destroyed (Figure 3).
- The placenta was implanted on the left side of the fundus, extending to the adnexal structures, membrane and partly to the left posterior fundus (Figures 1 and 2).
- There were no adhesions to the bowel, omentum, or other major vessels (Figure 4).
- The mother transfused four units of cross-matched blood after the operation.

An incision was made upon the thin hypertrophied membrane, and a 3000-gram male fetus was delivered by breech, with APGAR scores of 9 and 10 at the first and fifth minutes, respectively (Figure 5). Subsequently, a hysterectomy was performed for the uterus damaged significantly. Additionally, on the left side, a salpingo-oophorectomy was conducted due to the destruction of the left ovary and tubes (Video S1).

Discussion

Abdominal ectopic pregnancy accounts for 1% of extrauterine pregnancies, with prevalence ranging from 1:10,000 to 1:30,000 among all pregnancies according to literature.² However, there is geographic variation, with more reports emerging from low-income countries, likely due to higher incidence rates of sexually transmitted infections.^{3,11} Abdominal pregnancy is classified as early if the gestational age is less than 20 weeks and advanced if it exceeds 20 weeks.¹² Secondary abdominal pregnancies are more prevalent than primary ones. Primary abdominal ectopic pregnancy occurs when the fertilized ovum directly implants in the peritoneum without any uteroperitoneal communication. In contrast, secondary abdominal pregnancy results from the implantation of the fertilized ovum following tubal abortion, rupture of a tubal pregnancy, ruptured intrauterine pregnancy, or ruptured cornual pregnancy.^{1,2} In our case, the complete destruction of the left half of the fundal part of the uterus, left ovary, tubes, and left lateral upper part of the uterus supports the diagnosis of a secondary abdominal pregnancy. The placenta was implanted in the left cornual region of the uterus, tubes, and partly left upper posterior part of the uterus.

The diagnosis of abdominal pregnancy is challenging and requires a high index of suspicion as well as advanced imaging techniques such as high-quality ultrasound, CT scan, and MRI. In developed countries, MRI is the diagnostic



Figure 1 The uterus along with the pocket where the fetus was after hysterectomy.

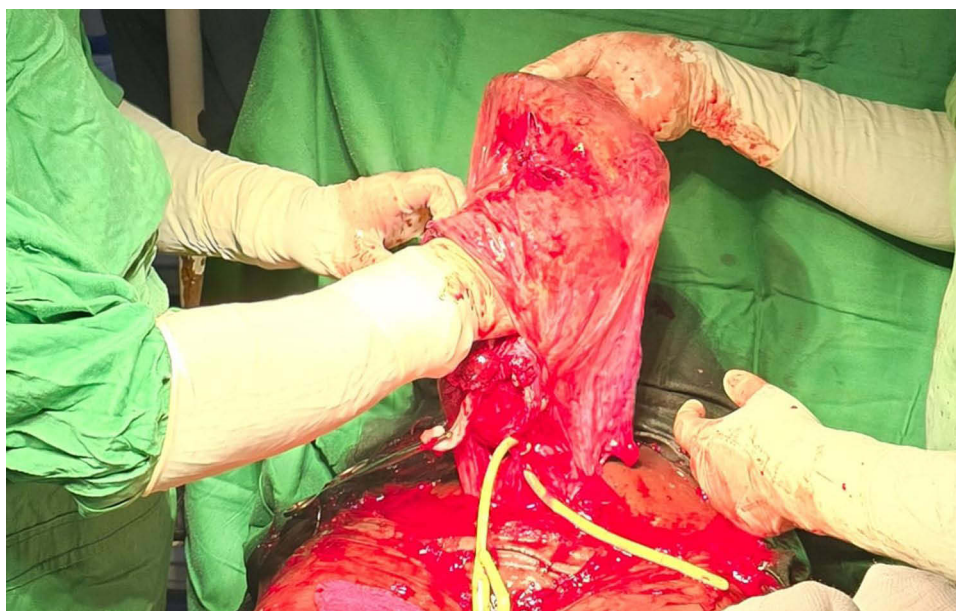


Figure 2 The pocket where the fetus was (surgeon hand within it) and the tourniquet applied in the lower uterine segment before hysterectomy (anterior view).

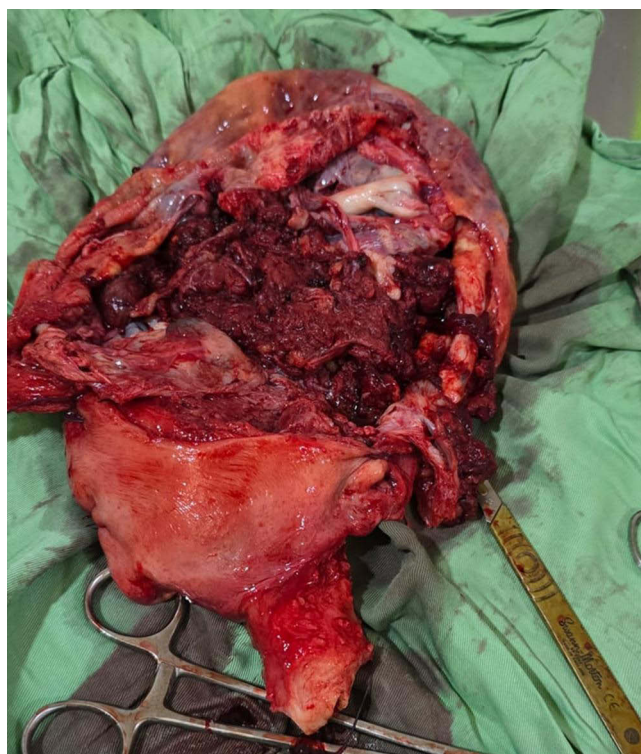


Figure 3 The pocket where the fetus was with placenta intact after hysterectomy.

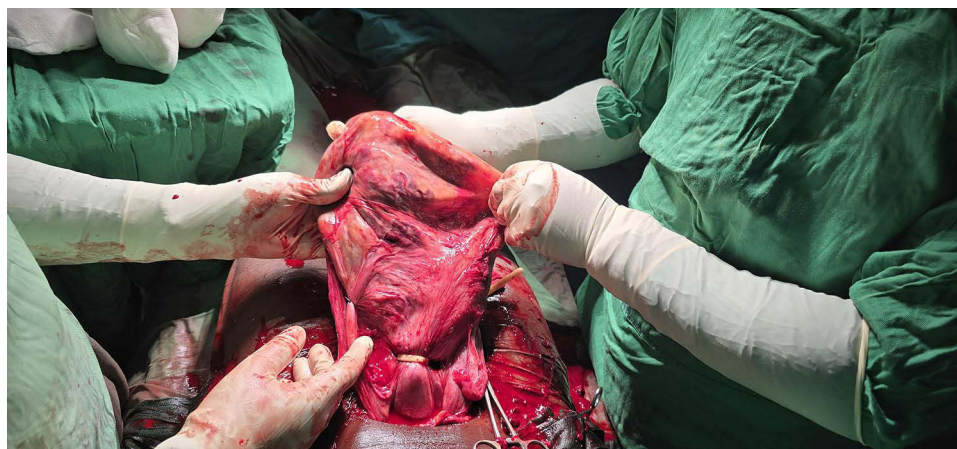


Figure 4 The pocket where the fetus was (surgeon hand within it) and the tourniquet applied in the lower uterine segment before hysterectomy (posterior view).

method of choice, especially in late advanced gestation.² In low-resource settings, high clinical suspicion and judgment, along with ultrasound where available, are crucial. While ultrasound plays a significant role in the first and second trimesters of pregnancy, its utility in advanced gestation is questionable.¹³ Reports from low-resource settings often indicate that most diagnoses are made intraoperatively. According to one review of 17 cases, only 29.41% of patients received a correct diagnosis before surgery, while 70.59% were misdiagnosed. The misdiagnoses included tubal pregnancy or unexplained intra-abdominal hemorrhage in early pregnancy and central placenta previa in the third trimester.¹⁴ Unfortunately, in our case, despite ultrasound evaluations after the patient was referred from a health center, the diagnosis was repeatedly missed. It was only made intraoperatively during an elective cesarean section scheduled for placenta previa. Otherwise, the pregnancy was uneventful throughout the gestation, except for the vaginal bleeding at 28 weeks, which necessitated the mother's admission. Routine early ultrasound by trained professionals for all pregnant



Figure 5 Alive health neonate after delivery.

women should be promoted to confirm pregnancy location. Clinicians must maintain a high index of suspicion for ectopic pregnancy in cases of atypical presentation, as abdominal ectopic pregnancies often present late with non-specific symptoms, risking delayed diagnosis.⁷

According to a review of 10 cases of abdominal ectopic pregnancy, the ages of the cases ranged from 20 to 40 years (mean, 31.5 years), with parity ranging from 0 to 3 (mean, 1.2). None of these cases had a history of previous ectopic pregnancy or tubal surgery.¹ In our case, the patient is a 28-year-old gravida 3, para 2 woman who had uneventful previous vaginal deliveries, resulting in healthy, live children.

Abdominal pregnancy is associated with high maternal and perinatal mortality. Maternal mortality, primarily due to uncontrolled hemorrhage, is reported in 5.1% of cases. It is seven times higher compared to other ectopic pregnancies and 90 times higher than intrauterine pregnancies.⁴ Perinatal mortality ranges from 40% to 95%, with congenital malformations and deformations occurring in 21.4% of cases.¹⁴ Maternal mortality is strongly related to the location of placental implantation. Attempts to separate the placenta from its implantation site often result in torrential bleeding and catastrophic complications. Therefore, knowing the placental attachment location is crucial before any removal attempt.^{13,15} In our case, both the mother and fetus had a good outcome since the placenta was implanted over the left half of the fundus, cornual site, left fallopian tube, and partly left posterior upper uterus. The vascular supply from the left ovarian and uterine arteries allowed for controlled bleeding via hysterectomy. The gestation sac's orientation towards the abdominal cavity prevented any deformity in the fetus. The postoperative period was uncomplicated, except for the transfusion of four units of cross-matched blood.

Conclusion and Recommendation

Abdominal pregnancy is a rare, high-risk condition associated with significant fetomaternal complications. This case, a secondary abdominal pregnancy likely resulting from a ruptured cornual ectopic pregnancy, is exceptional due to the rare outcome of a healthy, live fetus. It underscores the need for heightened clinical vigilance. Routine early ultrasound by trained professionals and a high index of suspicion are critical for timely diagnosis, especially in low-resource settings, to improve outcomes and mitigate risks.

Consent

Written informed consent was obtained from the mother, explicitly authorizing the use and sharing of the photographs. This consent ensures that the mother was fully informed about the purpose, potential audience, and context in which the images would be used, and she voluntarily agreed to their publication.

Ethical Review

Not applicable considering single case report.

Acknowledgment

Rwanda society of obstetrician and gynecologists for the all the support provided. All health professionals involved in the management of this case.

Author Contributions

All authors made a significant contribution to the work reported. All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Funding

No funding received.

Disclosure

The authors declare that there is no competing interest in this work.

References

1. Worley KC, Hnat MD, Cunningham FG. Advanced extrauterine pregnancy: diagnostic and therapeutic challenges. *American Journal of Obstetrics and Gynecology*. 2008;198(3):297.e1–e7. doi:10.1016/j.ajog.2007.09.044
2. Yoder N, Tal R, Martin JR, Bias P. Abdominal ectopic pregnancy after in vitro fertilization and single embryo transfer: a case report and systematic review. *Reproductive Biology and Endocrinology*. 2016;14:1–10. doi:10.1186/s12958-015-0135-8
3. Cotlar AM. Extrauterine pregnancy: a historical review33Delivered as keynote address, Obstetrics and Gynecology Section, Society of Air Force Clinical Surgeons annual meeting, Biloxi, Mississippi, April 5, 2000. The opinions and assertions contained herein are the private views of the author and are not to be construed as official policy or position of the United States Government, the Department of Defense, or the Department of the Air Force. *Current Surgery*. 2000;57(5):484–492. doi:10.1016/s0149-7944(00)00328-7
4. Hajji A, Toumi D, Laakom O, Cherif O, Faleh R. Early primary abdominal pregnancy: diagnosis and management. A case report. *International Journal of Surgery Case Reports*. 2020;73:303–306. doi:10.1016/j.ijscr.2020.07.048
5. El-Agwany A, A E-BE-SE-H, El-Gammal H, Abdelnaby M, Abdelnaby M. Secondary advanced abdominal pregnancy after suspected ruptured cornual pregnancy with good maternal outcome: a case with unusual gangrenous fetal toes and ultrasound diagnoses managed by hysterectomy. *Clin Med Insights Womens Health*. 2016;9:1–5. doi:10.4137/CMWH.S36311
6. Tolefac PN, Abanda MH, Minkande JZ, Priso EB. The challenge in the diagnosis and management of an advanced abdominal pregnancy in a resource-low setting: a case report. *Journal of Medical Case Reports*. 2017;11(1):199. doi:10.1186/s13256-017-1369-1
7. Mulisya O, Barasima G, Lugobe HM, et al. Abdominal pregnancy with a live newborn in a low-resource setting: a case report. *Case Reports in Women's Health*. 2023;37:e00480. doi:10.1016/j.crwh.2023.e00480
8. Adesiyun AG, Audu AI. Term extrauterine pregnancy in a Nigerian mother: a complication of uterine dehiscence. *Archives of Gynecology and Obstetrics*. 2009;279(1):75–77. doi:10.1007/s00404-008-0641-4

9. Kirk E, Bourne T. Diagnosis of ectopic pregnancy with ultrasound. *Best Practice & Research Clinical Obstetrics & Gynaecology*. 2009;23(4):501–508. doi:10.1016/j.bpobgyn.2008.12.010
10. Richardson A, Gallos I, Dobson S, Campbell BK, Coomarasamy A, Raine-Fenning N. Accuracy of first-trimester ultrasound in diagnosis of tubal ectopic pregnancy in the absence of an obvious extrauterine embryo: systematic review and meta-analysis. *Ultrasound in Obstetrics & Gynecology*. 2016;47(1):28–37. doi:10.1002/uog.14844
11. Diaouga HS, Yacouba MC, Hissen TM, et al. Prolonged abdominal pregnancy incidentally discovered during cesarean section: a case report. *BMC Pregnancy and Childbirth*. 2024;24(1):182. doi:10.1186/s12884-024-06358-6
12. Baldwin WF. Abdominal pregnancy: discussion, classification, and case presentation. *Obstetrics & Gynecology*. 1954;4(4):435–439.
13. Paluku JL, Kalole BK, Furaha CM, et al. Late abdominal pregnancy in a post-conflict context: case of a mistaken acute abdomen - a case report. *BMC Pregnancy and Childbirth*. 2020;20(1):238. doi:10.1186/s12884-020-02939-3
14. Stevens CA. Malformations and deformations in abdominal pregnancy. *American Journal of Medical Genetics*. 1993;47(8):1189–1195. doi:10.1002/ajmg.1320470812
15. Hailu FG, Yihunie GT, Essa AA, Tsega W. Advanced abdominal pregnancy, with live fetus and severe preeclampsia, case report. *BMC Pregnancy and Childbirth*. 2017;17(1):243. doi:10.1186/s12884-017-1437-y

International Journal of Women's Health

Publish your work in this journal

The International Journal of Women's Health is an international, peer-reviewed open-access journal publishing original research, reports, editorials, reviews and commentaries on all aspects of women's healthcare including gynecology, obstetrics, and breast cancer. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/international-journal-of-womens-health-journal>

Dovepress
Taylor & Francis Group