Scientific Research Publishing

Open Journal of Obstetrics and Gynecology, 2025, 15(12), 2160-2168
https://www.scirp.org/journal/ojog
ISSN Online: 2160-8806
ISSN Print: 2160-8792

Advanced Abdominal Pregnancy: Two Cases report at the Teaching Hospital of Angre, Abidjan (Côte d'Ivoire)

Yapo Privat Akobé, Ramata Kouakou-Kouraogo, Ngolo Alassane Soro, Nguiemeni Blanche Carine Houphouët-Mwandji, Okoin Paul José Loba, Claudia Michelle Gadji, Kassoum Koné, William Tano, Soh Victor Koffi, Cassou Roland Adjoby

Mother and Child Health Department, Angre Teaching Hospital, Félix Houphouët-Boigny University, Abidjan, Côte d'Ivoire
Email: r.adjoby@yahoo.fr

How to cite this paper: Akobé, Y.P., Kouakou-Kouraogo, R., Soro, N.A., Houphouët-Mwandji, N.B.C., Loba, O.P.J., Gadji, C.M., Koné, K., Tano, W., Koffi, S.V. and Adjoby, C.R. (2025) Advanced Abdominal Pregnancy: Two Cases report at the Teaching Hospital of Angre, Abidjan (Côte d'Ivoire). *Open Journal of Obstetrics and Gynecology*, **15**, 2160-2168.
https://doi.org/10.4236/ojog.2025.1512183

Received: November 26, 2025
Accepted: December 22, 2025
Published: December 25, 2025

Abstract

Abdominal pregnancy is a rare form of ectopic pregnancy. Exceptionally, it may progress to term, particularly in low-resource settings where access to prenatal care is limited. We report two cases of term abdominal pregnancy diagnosed incidentally in women aged 28 and 38 years. One case was detected fortuitously, while the other was suspected during a third-trimester ultrasound. Both fetuses were stillborn, one of which was macerated. This report underscores the critical importance of first-trimester ultrasound screening and the added diagnostic value of transvaginal sonography in early pregnancy assessment.

Keywords

Advanced Abdominal Pregnancy, Ectopic Pregnancy, Fetal Death

1. Introduction

Abdominal pregnancy, a rare variant of ectopic pregnancy, is defined as the primary or secondary implantation and development of the conceptus, either partially or entirely, within the peritoneal cavity. Advanced or evolved forms beyond the fifth month are exceptional in developed countries but remain relatively more frequent in low-resource settings with limited access to prenatal care [1]-[5]. Primary abdominal pregnancy is uncommon, and progression to term is typically associated with high perinatal mortality. Due to inadequate prenatal follow-up, diagnosis is often delayed, limiting management options, which are predominantly surgical. Through the presentation of two cases of abdominal pregnancy with diverse modes

of presentation, we aim to highlight the critical importance of first-trimester ultrasound screening, the diagnostic value of transvaginal sonography, and the potential role of magnetic resonance imaging (MRI) in cases with persistent diagnostic uncertainty [6].

2. Observation

2.1. Case 1

A 38-year-old homemaker, multiparous, gravida 8, para 7, was referred to our facility due to the absence of fetal heart sounds. She had attended only three prenatal visits, none of which included an ultrasound examination. On admission, she presented in hemodynamic shock with marked pallor. Abdominal examination revealed a large, globular, non-uterine mass and dullness to percussion over the flanks. Emergency bedside abdominal ultrasound performed in the delivery room demonstrated a normal-sized (slightly subnormal), homogeneous uterus, alongside a deceased intra-abdominal fetus at 39 weeks' gestation. Additionally, a large volume of free intraperitoneal fluid was identified.

Emergency midline laparotomy (supra- and infra-umbilical) confirmed the diagnosis of abdominal pregnancy. Intraoperatively, an intact amniotic sac was found within the peritoneal cavity, accompanied by massive hemoperitoneum (estimated blood loss: 2.5 liters). A macerated male stillborn fetus weighing 3800 g was delivered. The placenta was abnormally implanted, with partial insertion on the uterine fundus and another portion adherent to the sigmoid colon (**Figures 1-2**). Proximal clamping of the umbilical cord was performed, followed by partial placental delivery (removal of the detached, hemorrhagic portion). Postoperative hemodynamic status stabilized, with a postoperative hemoglobin level of 6 g/dL. The patient received a transfusion of 1300 mL of packed red blood cells. Bowel function resumed on postoperative day 3. However, on postoperative day 5, she developed a surgical site infection with isolation of multidrug-resistant Escherichia coli (sensitive to imipenem). She was discharged on postoperative day 30 and was subsequently lost to follow-up. The patient showed no signs that might suggest an abdominal pregnancy.

Figure 1. Macerated stillborn fetus.

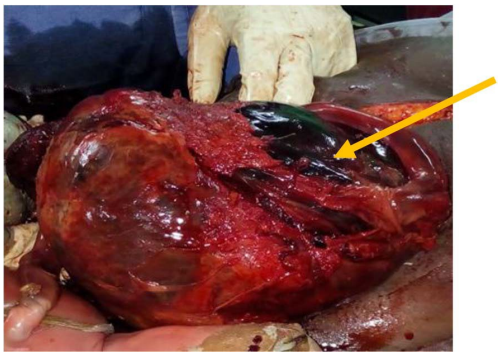

Figure 2. Placenta inserted on the uterine fundus.

2.2. Case 2

A 28-year-old housewife, with no notable medical history, primiparous (G2P1), having received insufficient prenatal care (only two consultations) and not having undergone routine prenatal screening, presented with an absence of fetal movements evolving for two days and had been referred to our center by a regional hospital, the latter suspecting an abdominal pregnancy at term following an obstetric ultrasound. She was referred to our center by a regional hospital based on clinical suspicion of term abdominal pregnancy following an obstetric ultrasound. On admission, she was in stable general condition. Fundal height measured 34 cm. Vaginal examination revealed a mid-length, softened, and closed cervical os; lateral fornices were not filled. An abdominal MRI was requested to confirm the diagnosis but could not be performed due to financial constraints. Given the strong clinical suspicion, an exploratory laparotomy was performed.

Intraoperatively, an extrauterine gestational sac was identified, with its implantation site located on the left broad ligament and adjacent to the left ovary. A fresh, stillborn female neonate without apparent congenital malformations was delivered. The newborn at 37 weeks' gestation weighed 2450 g, measured 47 cm in length, and had a head circumference of 32 cm. The gestational sac was carefully excised at its site of insertion, with meticulous ligation and hemostasis achieved. (See Figures 3-5)

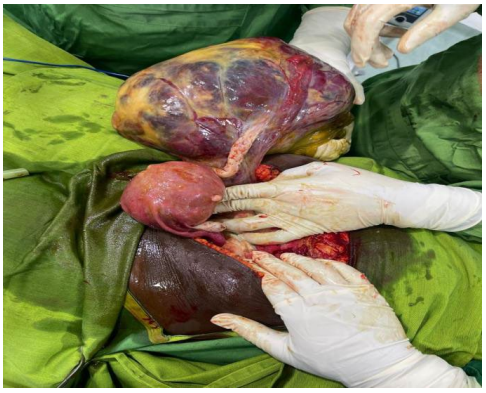

Figure 3. Intraoperative view showing implantation of the abdominal pregnancy on the left broad ligament and left ovary.

Figure 4. Site of implantation of the abdominal pregnancy.

Figure 5. Delivery of a stillborn fetus with an intact uterus.

3. Discussion

Abdominal pregnancy is a rare complication of ectopic gestation, with an incidence of approximately 1 in 10,000 to 1 in 25,000 deliveries in developed countries [4]. In contrast, its prevalence is significantly higher in low-resource settings estimated at 1 in 2,000 deliveries due to limited access to prenatal care, delayed diagnosis, and high rates of genital tract infections [1] [5] [7]. This disparity is largely attributable to socioeconomic and healthcare system differences: while assisted reproductive technologies and intrauterine devices are common risk factors in industrialized nations [7]-[9].

In low-medical-resource settings, the diagnosis of abdominal pregnancy remains challenging, often made only intraoperatively in up to 50% of cases [2] [5]. Although rare overall, abdominal pregnancy can be classified into two pathophysiological types: secondary and primary. Secondary abdominal pregnancy, the more common form, typically results from tubo-abdominal abortion, rupture of a tubal pregnancy, or migration through a uterine scar (e.g., following prior cesarean section). Primary abdominal pregnancy, by contrast, arises from direct implantation of the conceptus within the peritoneal cavity due to delayed oocyte capture a phenomenon rarely documented. In our two observations, the placenta was

attached either to the uterine fundus and sigmoid colon or to the broad ligament and left ovary. For this reason, our patients can be diagnosed with a secondary abdominal pregnancy.

Prenatal diagnosis relies primarily on ultrasound. A key diagnostic criterion is the clear anatomical separation between the uterine wall and the gestational sac, with the placenta appearing distinct from the uterine myometrium [6] [9] [10]. Clinically, suspected abdominal pregnancy may present with nonspecific symptoms including nausea, vomiting, abdominal or pelvic pain exacerbated by fetal movements (if the fetus is viable), and occasionally vaginal bleeding. The fetus is often located superficially and in an atypical transverse position. On vaginal examination, the cervix may be fixed below the symphysis pubis, firm, and elongated. Laboratory findings may include maternal anemia and elevated alpha-fetoprotein levels [11] [12].

Beyond the first trimester, both clinical and ultrasound diagnosis become increasingly difficult. In cases of diagnostic uncertainty, Ehab *et al*. recommend magnetic resonance imaging (MRI) to delineate the precise site of implantation by visualizing the entire uterine contour and surrounding structures [13]. MRI offers superior soft-tissue contrast compared to ultrasound and is particularly valuable when placental attachment to pelvic organs is suspected. However, its availability remains severely limited in sub-Saharan Africa due to cost and infrastructure constraints. In such settings, Aliyu *et al*. propose an alternative: transvaginal ultrasound with a Foley catheter balloon inflated in the bladder to distend the urinary bladder and thereby improve visualization of the uterine wall and gestational sac location [1] [14].

In our first case, the diagnosis was not suspected antenatally due to the absence of any obstetric ultrasound. The diagnosis was made intraoperatively following presentation with massive hemoperitoneum. In the second case, despite an initial ultrasound raising suspicion, definitive localization was not achieved. An MRI would have been ideal to confirm the extrauterine implantation on the left broad ligament and ovary but was not feasible due to financial constraints.

In high-resource settings, abdominal pregnancy is typically diagnosed in the first trimester, enabling early intervention [5]-[7]. When diagnosed later, termination is generally recommended after multidisciplinary consultation and informed consent. Therapeutic options vary widely and include medical management with methotrexate (particularly in early cases, guided by the Fernández score), laparoscopic intervention for pregnancies <20 weeks' gestation [4], or laparotomy, the standard approach in resource-limited environments where diagnosis is often delayed. Prenatal care coverage remains low in sub-Saharan Africa, with midwives being the primary providers. Some midwives believe that a pregnancy should only be investigated after three months of amenorrhea. Furthermore, limited access to quality ultrasound restricts prenatal diagnosis to the first trimester of pregnancy. The lack of early and systematic screening in these specific cases explains the late diagnosis as well as the poor outcomes.

Laparotomy should ideally be performed by a multidisciplinary team including vascular surgeons, urologists, and gynecologist obstetrician to manage potential complications such as massive hemorrhage or organ injury [7] [15]. The most common sites of implantation are the Douglas pouch, followed by the mesosalpinx and omentum [16].

While there is consensus on the necessity of fetal extraction, controversy persists regarding placental management. The primary concern is uncontrolled hemorrhage if the placenta is adherent to vital organs or major vessels. Consequently, attempts at complete placental removal are strictly contraindicated in such cases [17] [18]. The use of methotrexate for residual placental tissue has largely fallen out of favor due to unpredictable efficacy and delayed complications.

Some authors advocate for the simultaneous removal of both fetus and placenta. However, Aliyu [1] reported that 2 out of 6 patients in his series developed postoperative intestinal obstruction following complete placental extraction. In cases of catastrophic hemorrhage uncontrolled by conventional methods, hemostatic agents such as Floseal® a combination of human thrombin, gelatin, collagen, and cellulose matrix may be employed to promote local coagulation [19]. Yet, this agent is rarely available in our setting.

Therefore, many experts recommend leaving the placenta in situ after proximal ligation of the umbilical cord, particularly when placental implantation involves critical structures [4] [6]. This conservative approach minimizes blood loss, reduces the risk of organ damage, and is especially advantageous in contexts with chronic shortages of blood products. In our first case, we adopted this strategy: the umbilical cord was ligated proximally, and the placenta was left in place. The patient experienced no postoperative bowel obstruction, and no methotrexate was administered. Instead, we implemented rigorous clinical and biochemical follow-up, monitoring for return of bowel motility and absence of obstructive symptoms.

In 2018, Marcelin *et al*. reported a case of advanced abdominal pregnancy managed with preoperative transcatheter placental embolization following fetal extraction via laparotomy. Four weeks later, the devascularized placenta was surgically resected with minimal blood loss and no organ injury [20] [21]. This strategy represents a promising middle ground but requires advanced interventional radiology capabilities rarely accessible in our setting.

Postoperative monitoring typically involves serial ultrasound to assess placental volume regression and quantification of serial β-hCG levels. A progressive decline in β-hCG confirms placental resorption and is the most reliable biochemical marker of successful conservative management. In our first observation, the patient was lost to follow-up despite the need for close monitoring. This situation demonstrates the difficulty, under our conditions, of continuing monitoring when the clinical condition is progressing well. Ultimately, placental extraction depends on its insertion over vital organs or major blood vessels. Medical treatment with methotrexate can be initiated according to the Fernandez score, but not for advanced abdominal pregnancies. Traumatic placental extraction can lead to severe

hemorrhage, organ damage, or fistula formation. In the second observation, placental extraction was successful. However, cautiously leaving the placenta in situ after proximal ligation of the umbilical cord suggests close monitoring.

The fetal prognosis in term abdominal pregnancy remains grim, with perinatal mortality ranging from 75% to 95% [22] [23]. This high mortality stems from placental insufficiency due to ectopic implantation: the placenta develops in a non-vascularized, non-physiologic environment, leading to premature aging, fetal hypotrophy, malformations (cleft lip, clubfoot), oligoamnios, and intrauterine fetal demise all of which were observed in both our cases. As fetal demands increase during the third trimester, the inadequate perfusion provided by an ectopic placenta becomes incompatible with survival [24].

Maternal mortality in abdominal pregnancy is substantially higher than in other forms of ectopic pregnancy [1] [9] [10]. In our cases, complications such as severe anemia and postoperative wound infection prolonged hospitalization to 30 days in one patient—far exceeding the average of 10 days reported by Guèye *et al*. [5].

4. Conclusion

Abdominal pregnancy is rare. The maternal and fetal prognosis remains poor, particularly due to placental insufficiency and the risk of hemoperitoneum. This underscores the importance of early diagnosis of the pregnancy's location through subsidized transvaginal ultrasound. Universal access to quality prenatal care is crucial. Indeed, any delay in the diagnosis and treatment of abdominal pregnancies can lead to an unfavorable maternal and fetal prognosis.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Aliyu, L.D. and Ashimi, A.O. (2013) A Multicentre Study of Advanced Abdominal Pregnancy: A Review of Six Cases in Low Resource Settings. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, **170**, 33-38. https://doi.org/10.1016/j.ejogrb.2013.05.022

[2] Oudghiri, N., Doumiri, M., Behat, M., Tachinante, R. and Tazi, A.S. (2013) Abdominal Extrauterine in Term Pregnancy. *Maroc Médical*, **35**, 24-27.

[3] Abdullah, L., Alsulaiman, S.S., Hassan, M., Ibrahim, H.S., Alshamali, N. and Nizami, S. (2023) Abdominal Pregnancy: A Case Report. *Annals of Medicine & Surgery*, **85**, 302-305. https://doi.org/10.1097/ms9.0000000000000245

[4] Takeda, A., Imoto, S., Mori, M., Yamada, J. and Nakamura, H. (2012) Early Abdominal Pregnancy Complicated by Parasitic Dermoid Cyst: Diagnosis by Diffusion-Weighted Magnetic Resonance Imaging and Management by Laparoendoscopic Single-Site Surgery. *Journal of Minimally Invasive Gynecology*, **19**, 647-650. https://doi.org/10.1016/j.jmig.2012.03.024

[5] Guèye, M.K., Guèye, M., Diaw, H. and Moreau, J.C. (2012) Difficulties in Diagnosing

and Managing Abdominal Pregnancy: A Report of Two Cases Diagnosed at Term at the Diourbel Regional Hospital Center in Senegal. *Clinics in Mother and Child Health*, **9**, 1-3. https://doi.org/10.4303/cmch/c120302

[6] Rabinerson, D., Berezowsky, A. and Gabbay-Benziv, R. (2017) Advanced Abdominal Pregnancy. *Harefuah*, **156**, 114-117.

[7] Bohoussou, E., Guié, P., Saki, C., Okon, G., Anongba, S. and Touré-Coulibaly, K. (2013) Diagnosis and Management of an Advanced Abdominal Pregnancy. (Abidjan, Côte d'Ivoire). *Revue International des Sciences Médicales*, **15**, 30-32.

[8] Neth, M.R., Thompson, M.A., Gibson, C.B., Gullett, J.P. and Pigott, D.C. (2019) Ruptured Ectopic Pregnancy in the Presence of an Intrauterine Device. *Clinical Practice and Cases in Emergency Medicine*, **3**, 51-54. https://doi.org/10.5811/cpcem.2019.1.41345

[9] Nzaumvila, D.K., Govender, I. and Ogunbanjo, G.A. (2018) An Audit of the Management of Ectopic Pregnancies in a District Hospital, Gauteng, South Africa. *African Journal of Primary Health Care & Family Medicine*, **10**, 1-8. https://doi.org/10.4102/phcfm.v10i1.1757

[10] Hymel, J.A., Hughes, D.S., Gehlot, A., Ramseyer, A.M. and Magann, E.F. (2015) Late Abdominal Pregnancies (≥20 Weeks Gestation): A Review from 1965 to 2012. *Gynecologic and Obstetric Investigation*, **80**, 253-258. https://doi.org/10.1159/000381264

[11] Bouzid, F., Cellami, D., Baati, S., Chaabouni, M., *et al*. (1996) La grossesse abdominale. *Revue française de gynécologie et d'obstétrique*, **91**, 616-618.

[12] Tegene, D., Nesha, S., Gizaw, B. and Befikadu, T. (2022) Laparotomy for Advanced Abdominal Ectopic Pregnancy. *Case Reports in Obstetrics and Gynecology*, **2022**, 1-5. https://doi.org/10.1155/2022/3177810

[13] Hamouda, E.S.M., Littooij, A.S., Thia, E.W. and Ong, C.L. (2013) Ruptured Interstitial Ectopic Pregnancy at 18 Weeks Gestation Diagnosed by MRI: A Case Report. *Journal of Radiology Case Reports*, **7**, 34-42. https://doi.org/10.3941/jrcr.v7i10.1472

[14] Robson, D., Lusink, V. and Campbell, N. (2019) Persistent Omental Trophoblastic Implantation Following Salpingostomy, Salpingectomy and Methotrexate for Ectopic Pregnancy: A Case Report. *Case Reports in Women's Health*, **21**, e00095. https://doi.org/10.1016/j.crwh.2019.e00095

[15] George, R., Powers, E. and Gunby, R. (2021) Abdominal Ectopic Pregnancy. *Baylor University Medical Center Proceedings*, **34**, 530-531. https://doi.org/10.1080/08998280.2021.1884932

[16] Nama, V., Gyampoh, B., Karoshi, M., McRae, R. and Opemuyi, I. (2007) Secondary Abdominal Appendicular Ectopic Pregnancy. *Journal of Minimally Invasive Gynecology*, **14**, 516-517. https://doi.org/10.1016/j.jmig.2007.02.005

[17] Kangulu, I.B., Ngoy, E.K., Cibuabua, D.K., Ilunga, C.M., Ndolo, A.U., Nzaji, M.K., *et al*. (2013) A propos d'un cas de grossesse abdominale très prolongée. *Pan African Medical Journal*, **16**, Article 26. https://doi.org/10.11604/pamj.2013.16.26.2260

[18] Gudu, W. and Bekele, D. (2015) A Pre-Operatively Diagnosed Advanced Abdominal Pregnancy with a Surviving Neonate: A Case Report. *Journal of Medical Case Reports*, **9**, Article No. 228. https://doi.org/10.1186/s13256-015-0712-7

[19] Gorry, A., Morelli, M., Olowu, O., Shahid, A. and Odejinmi, F. (2012) Laparoscopic Management of Abdominal Ectopic Pregnancy Using Floseal Hemostatic Matrix. *International Journal of Gynecology & Obstetrics*, **117**, 83-84.

https://doi.org/10.1016/j.ijgo.2011.11.003

[20] Marcelin, C., Kouchner, P., Bintner, M., Linard, M., Boukerrou, M. and Goupil, J. (2018) Placenta Embolization of Advanced Abdominal Pregnancy. *Diagnostic and Interventional Imaging*, **99**, 265-266. https://doi.org/10.1016/j.diii.2017.12.001

[21] Zheng, X., Zhou, Y., Sun, Z., Yan, T., Yang, Y. and Wang, R. (2023) Abdominal Pregnancy Secondary to Uterine Horn Pregnancy: A Case Report. *BMC Pregnancy and Childbirth*, **23**, Article No. 412. https://doi.org/10.1186/s12884-023-05704-4

[22] Kun, K.Y., Wong, P.Y., Ho, M.W., Tai, C.M. and Ng, T.K. (2000) Abdominal Pregnancy Presenting as a Missed Abortion at 16 Weeks' Gestation. *Hong Kong Medical Journal*, **6**, 425-427.

[23] Brewster, E.M., Braithwaite, E.A. and Brewster Jr, E.M. (2011) Advanced Abdominal pregnancy: A Case Report of Good Maternal and Perinatal Outcome. *West Indian Medical Journal*, **60**, 587-589.

[24] Hoshino, T., Mori, T., Fujii, Y. and Yoshioka, S. (2021) Advanced Abdominal Pregnancy (AAP) after 20 Weeks of Gestation in Japan: A Retrospective Review. *Obstetrics and Gynecology International*, **2021**, 1-6. https://doi.org/10.1155/2021/6624404