



SECOND TRIMESTER ABDOMINAL PREGNANCY WITH AN UNUSUAL PRESENTATION OF UMBILICAL BLEEDING AND MANAGEMENT IN A RESOURCE LIMITED SET UP- A CASE REPORT

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Abstract: Abdominal or intra-abdominal pregnancy is rare, making up 1% of all ectopic gestations. It can result in life threatening maternal complications such as massive bleeding from placental separation, abscess formation and coagulopathy which can complicate excessive bleeding, fetal demise or sepsis. It is often misdiagnosed in the early stage leading to late diagnosis and in such cases the fetal outcome is worse with very high perinatal mortality leaving majority of the surviving infants with serious malformations. Clinical features are usually vague. Early ultrasonography in pregnancy has made early diagnosis easier. The rarity of advanced abdominal pregnancy with a high misdiagnosis rate and non specificity of the specific clinical signs and symptoms explain the lack of standardized diagnostic and treatment protocols. A case of abdominal pregnancy with at 16 weeks is described with an unusual presentation of umbilical bleeding with its management in a resource limited set-up.

Keywords; Abdominal pregnancy, second trimester, umbilical bleeding.

Introduction

Abdominal or intra-abdominal pregnancy is a rare and special type of ectopic pregnancy where implantation of the developing embryo and further fetal growth occurs within the peritoneal cavity.¹

Ectopic pregnancies itself accounts for about 1–2% of all pregnancies with 95% being tubal in location^{2,4}. Abdominal pregnancies comprising approximately 1%¹ of all ectopic pregnancies with an estimated incidence of 1:10,000 live births^{2,3}. It could be primary, by direct implantation into the abdominal cavity or secondary, due to any of; fimbrial abortion, tubal rupture, ruptured uterus, ruptured cornual pregnancy, or a result of intra abdominal fertilization^{3,5}. Risk factors for abdominal pregnancy include; uterine surgeries, previous tubal pregnancy or uterine horn pregnancies, dilatation and curettage, and artificial insemination¹. Most end up in early demise while few cases can develop to more advanced pregnancy and may even go undetected until intra-operatively¹. There are no specific early symptoms or signs. Common findings in

uncomplicated cases are those of persistent abdominal or suprapubic pain, amenorrhoea, vaginal bleeding during pregnancy, nausea and vomiting⁶. Late presentation is common in the rural settings with poor formal antenatal coverage and inadequate medical facilities such as ultrasound scan⁷. Abdominal pregnancy is associated with a significantly high maternal mortality rate of 0.5%–20% and an even higher perinatal mortality rate of about 40%⁸. A high index of suspicion essential and thorough clinical and ultrasound examinations helps in establishing the diagnosis especially when the pregnant women present with unusual abdominal pain or hemoperitoneum.^{2,4} The Progression to term is rare and in such cases more often than not end up in fetal demise or congenital malformation being present.⁸

The rarity and high misdiagnosis rate explains the lack of standardized diagnostic and treatment protocol available for diagnosis and treatment.

Case;

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24 year old Gravida 3 para 2 lady presented with spontaneous umbilical bleeding of 2 hours duration and amenorrhoea of 4 months. She has had two prior vaginal births with no history of gynaecological surgeries or history suggestive of bleeding disorders. On examination, she was stable and a small umbilical defect oozing of blood with a soft mass about 10cm in diameter palpable beneath the umbilical region.

Differential diagnosis after examination were ; pregnancy co-existing with ruptured anterior abdominal wall vessel, urachal pathology in pregnancy, accumulated hematoma from umbilical endometriosis, ruptured viscus in pregnancy and abdominal pregnancy. Pregnancy test was positive, hemoglobing (Hb) estimation was 11.9g/dl and an urgent abdominopelvic scan revealed; a normal sized empty uterus with an intact endometrial plate, a well defined gestational sac with fetus with cardiac activity dating 16weekd 3 days superior to the bladder. Adnexa and other organs were normal and no fluid collection in dependent parts.

She had an emergency laparotomy with removal of the fetus and placenta with was beneath the umbilicus completely walled off from the rest of the peritoneal cavity by omentum. An improvised abdominal drain using a size 20 Foley catheter was left in the peritoneal cavity for 48hours..

Post operatively she had antibiotics, intramuscular methotrexate 50mg stat and oral hematenics. Serial haemoglobin (Hb) estimation on 1st and 2nd post-operative days were 7.3g/dl and 8.2g/dl respectively. She represented with slight ooze of blood on the 11 postoperative day and Hb check was 8.3g/dl. She was given a stat dose of intravenous tranexamic acid 1gm and another 3 days course of daily 50mg intramuscular methotrexate. She had a stat dose of 200mg oral mifepristone on the 15th post-operative and has since been free of complaint.

Part of her follow up was a weekly urine pregnancy test which became negative by 3 weeks post operative followed thereafter by weekly blood pregnancy test which became negative by the 5th (35days) week post operative

Discussion

Intra-abdominal or abdominal pregnancy is a rare occurrence, constituting only 1% of all ectopic gestations¹. Most are secondary to an aborted or ruptured tubal pregnancy⁹. An abdominal pregnancy can go undetected until an advanced gestation thereby creating a treatment dilemma of aiming for fetal survival and the maternal risk of pregnancy continuation¹.

Symptoms of uncomplicated cases are very nonspecific, and most common are persistent abdominal or suprapubic pain (100%), gastrointestinal symptoms like nausea and vomiting (70%), painful fetal movements (40%), general malaise (40%), vaginal bleeding or bloody discharge and altered bowel movements⁶. Examination findings include; abdominal tenderness (100%), an abnormal fetal lie (70%), easily palpable fetal body parts and a displaced uterine cervix (40%)⁶.

The variability in presentation is related to variable organ of attachment as it can attach itself to almost all intra-abdominal organs. Attachment to omentum, liver and spleen surface are regarded as high bleeding risk factors, while those of the uterus or parts of the uterine surface tends to be associated with a relatively low risk of bleeding with better fetal outlook probably from better perfusion¹.

Most cases in the absence of early ultrasonography are missed in its early stages until onset of abdominal pain or an emergency bleeding episode due to poorly a secured placenta, a weak gestational sac, and absent myometrial protection.¹

Laboratory tests have limited value serving only as ancillary test as a positive pregnancy test diagnoses pregnancy in the background of history of amenorrhoea irrespective of location while quantitative human chorionic gonadotropin level is useful for post treatment monitoring¹⁰. Unexplainably low haemoglobin may raise suspicion of intra-abdominal bleeding which signifies complication.

Routine early obstetric ultrasound improves earlier diagnosis of abdominal pregnancy. Diagnostic criteria include: demonstrating a fetus in a gestational sac



outside the uterus, or identifying the uterus separate from the fetus; non-visualization of an uterine wall between the fetus and urinary bladder; close proximity of the fetus to the maternal abdominal wall; identifying the placenta outside of the uterine cavity, the typical finding of an empty uterine cavity in the absence of the symptomatology of tubal ectopic¹⁰.

Ultrasonography alone may be limited especially with close apposition or adherence to bowels¹. MRI has better diagnostic value and more importantly can help locate and resolve the relationship between the placenta and the adjoining organs and tissues. The relationship of the placenta to other organs can help develop a relatively safe and logical treatment option such as conservative option and surgical planning including provisions for possible additional precautionary interventions to avert complications.^{1,7}

Abdominal pregnancy can go unnoticed till advanced (beyond 20 weeks gestation) presenting commonly either as bleeding from rupture of the gestational sac or the absence of labour at term. It may also be discovered in the process of elective caesarean section¹¹. Fetal survival from advanced abdominal pregnancies has been documented although uncommon with associated very high maternal, fetal and perinatal mortality and morbidity¹²⁻¹⁴. The maternal mortality rate ranges between 0.5 and 20%⁸. Maternal morbidity and mortality occurs usually following severe hemorrhage, bowel obstruction, bowel perforation, fistula, sepsis or disseminated intravascular coagulations⁸.

The perinatal mortality is as high as 40% with as much as 21 and 90% of the surviving fetuses having serious birth defects due to compression as a result of deficient amniotic liquor and vascular disruption⁸. Early neonatal death is also common in the event of survival

The management of abdominal pregnancy depends on the gestational age at time of diagnosis and maternal hemodynamic stability. As with other types of ectopic pregnancy, medical management of early abdominal pregnancy with similar agents such as local or systemic methotrexate, local instillation of potassium chloride by intracapsular injection into the abdominal pregnancy

sac, hyperosmolar glucose, prostaglandins, danazol, etoposide, embolization and mifepristone has been reported. Different complications most commonly bleeding occur to various degrees with these agents.^{1,10}

Although laparotomy has long being the commonest treatment modality for all gestations, medical management is an option for early abdominal pregnancy and in pregnancies where surgery is deemed likely to cause possible life-threatening haemorrhage. In advanced abdominal pregnancy, management options include; expectant management and laparotomy¹. Safety of operative laparoscopy can be guaranteed only in appropriately selected very early gestational cases in haemodynamically stable patient. This further highlights the significance of first-trimester ultrasound examination and other possible imaging modalities in diagnosing early pregnancy complications and acute abdomen in pregnancy.

Expectant management in advanced cases can allow a live birth if fetal development is deemed satisfactory¹.

Uterine artery embolization, injection of potassium chloride into the abdominal pregnancy sac, and other conservative treatments in advanced abdominal pregnancy can lead to a higher incidence of infection, fetal ossification-associated secondary injuries such as intestinal fistulas and late bleeding and the subsequent re-exploration due to incomplete absorption of the dead fetus leaving behind bony fetal parts¹. Although arterial embolization in the presence of a dead fetus may reduce blood loss at surgery its use is limited by poor definition of arterial supply in relation to other nearby tissues and organs¹.

Laparotomy is the mainstay of treatment for most and advanced abdominal pregnancies irrespective of whether fetal survival is aimed for or not and is applicable at various gestations¹.

In our presented case, surgical management with laparotomy was the option. There is no conclusive treatment procedures for placentas which tend to be very soft, paste-like and poorly defined in earlier gestations and adherent to viscera in advanced abdominal pregnancies¹. Aggressive traction towards



removal can result in torrential bleeding especially when placenta is located in a blood vessel-rich area such as ovary¹. Management of the placenta after fetal extraction or delivery ranges from complete removal through partial removal to leaving the placenta in situ depending on the placental insertion site¹. In the case described here, the placenta part adherent to the omentum was left in-situ as it was deeply adherent to omentum unlike the parts adherent to the underside of the anterior abdominal wall. Major hemorrhage from placental implantation site is usually the most common cause of maternal mortality and as such decision to remove or leave placenta *in situ* should depend on the extent of placentation and available skill.^{2,15} It is best avoiding the temptation at extraction of the placenta as in many instances, the placenta is attached to vital organs or vascular sites which could be dangerously disrupted during placental separation and as such should be left *in situ*. Serious complications are not known to have occurred when placenta has been left *in situ* and β -HCG levels monitored². Leaving the placenta in situ with the ligation of the umbilical cord, can be followed with expectant management or other measures to accelerate placental trophoblast involution like mifepristone, methotrexate therapy or embolization with antibiotic coverage^{1,8}.

The use of adjuvant methotrexate therapy is still debatable. It is helpful with accelerating placental involution, however, the build up of necrotic tissue associated with rapid degradation, poses a higher risk of sepsis^{1,10}. Mife-pristone is safer, cheaper and effective in inducing placenta degradation. Poor definition arterial supply to the placenta and adjacent vital organ involvement makes results following embolization for residual placenta poor.¹

With the placenta in situ, β -HCG level regress to a normal value within months^{1,16}. Evaluation of ultrasound blood flow signal may serve as an adjunct to assessing the residual placenta.¹

Conclusions

Abdominal or intra abdominal pregnancy is a rare form of ectopic pregnancy with higher morbidity and mortality for both the mother and the fetus compared to an intra- uterine gestation irrespective gestational duration. Multiple diagnostic procedures help lower the high risk of misdiagnosis. Ultrasonography is a cheap and very important in the diagnosis of an extrauterine pregnancy while other imaging modalities such as MRI and computed tomography scan gives better resolution but not readily available or affordable in most rural set-up. A high index of suspicion is needed for prompt diagnosis and timely intervention to avert life threatening morbidity or mortality.

Termination is usually advised when diagnosis is made early while advanced cases can be individualized with possible expectant management and close surveillance to improve fetal survival. The removal of placenta is for properly selected cases and is usually dependent on pre-operative radiological evaluation, intra-operative findings and available surgical expertise otherwise, leaving the placenta *in situ* is safer.

Consent

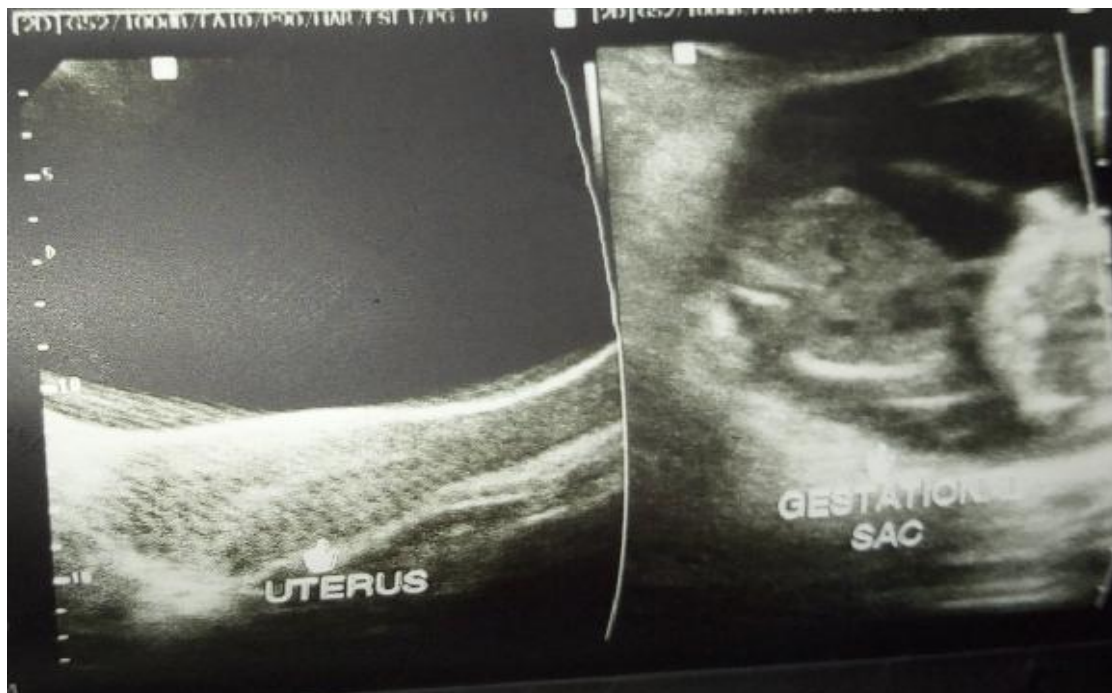
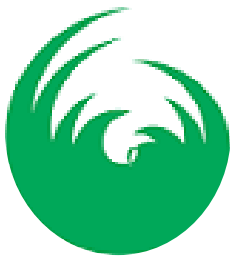
A written informed consent was obtained from the patient for publication of this case report.

Conflicts of Interest

The author declares that he has no conflicts of interest.

Authors' Contributions

Chidinma Nwogu wrote and drafted the first manuscript. Others reviewed the manuscript. All authors read and approved the final manuscript.



Images; (1) ultrasound scan showing normal empty uterus , gestational sac with fetus beneath the anterior abdominal wall , (2). Umbilicus with blood clot beneath, (3) 16 weeks old fetus removed during laparotomy

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