

Term Broad Ligament Ectopic Pregnancy with Live Birth: A Rare Case Report from Nigeria

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ABSTRACT

Broad ligament pregnancy is an extremely rare form of abdominal ectopic pregnancy in which the gestational sac develops between the two layers of the broad ligament. Diagnosis is often difficult and most cases are identified intraoperatively. Maternal morbidity and perinatal mortality are high due to the risk of catastrophic hemorrhage. Term live birth from a broad ligament pregnancy is exceptionally uncommon. We report a case of a 19-year-old primigravida who presented at term with ultrasound diagnosis of major placenta previa, severe oligohydramnios and was found at laparotomy to have a broad ligament ectopic pregnancy with a live fetus. A live female baby weighing 1.8 kg with good APGAR score was delivered successfully through laparotomy without complication. The placenta was removed completely, wedge resection of the ectopic sac and the broad ligament repaired. Histology of the sac was consistent with ectopic pregnancy. Mother and baby had satisfactory postoperative outcomes. This report highlights the diagnostic challenges and surgical management of this rare obstetric condition.

Keywords: Broad Ligament Pregnancy, Abdominal Pregnancy, Ectopic Pregnancy, Laparotomy, Live Birth, Primigravida

Introduction

Broad ligament pregnancy is a rare subtype of abdominal ectopic pregnancy in which implantation occurs within the broad ligament, usually between the leaves of the mesometrium [1-4]. It accounts for less than 1% of all ectopic pregnancies and approximately 1 in 300 ectopic gestations [5]. The condition may arise primarily or more commonly secondarily following tubal rupture or abortion with reimplantation within the broad ligament [4,6]. Due to the expansile nature of the broad ligament and surrounding pelvic tissues, the pregnancy may progress to advanced gestational age before diagnosis [7-10]. However, maternal mortality remains high because of the risk of severe hemorrhage and adjacent organ injury [5,8]. Preoperative diagnosis is challenging because clinical and ultrasonographic findings may mimic a normal intrauterine pregnancy [11]. Most cases are discovered unexpectedly during laparotomy performed for presumed cesarean delivery or abdominal emergencies [9,10,12].

We report a rare case of term broad ligament ectopic pregnancy in a 19-year-old primigravida with successful delivery of a live baby at laparotomy.

Case Presentation

Miss A.O, a 19-year-old booked primigravida presented to the emergency obstetric unit at 37 weeks and 5 days gestation with complaints of lower abdominal pain and ultrasound diagnosis of major placenta previa with IUGR. She had registered for antenatal care in our health facility at about 28 weeks gestational age after failed attempts at termination of the pregnancy. Pregnancy was unwanted, she attempted voluntary termination with MVA on two occasions at 6 weeks and 14 weeks gestational ages without success. There was no history of vaginal bleeding, drainage of liquor, infertility treatment, pelvic inflammatory disease, or previous pelvic surgery. Antenatal period was uneventful. She had two ultrasound scans done at 30 weeks and 35 weeks, both ultrasounds showed low lying placenta with lower segment uterine fibroid. However, the scan at 35 weeks reported an intrauterine growth restriction. She was planned for elective caesarean section at 38 completed weeks.

Miss A.O presented at 37 weeks 5 days with complain of lower abdominal pains but no bleeding per vagina. On examination, she was not pale, fully conscious and hemodynamically stable. Her pulse rate was 104 beats/minute and blood pressure was 130/70 mmHg. Abdominal examination revealed a gravid abdomen with mild tenderness. Fundal height corresponded to 34 weeks'

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gestation. Fetal lie was oblique lie with cephalic presentation, fetal head was 5/5th palpable and fetal heart rate was 142 beats/minute. Pelvic examination revealed a closed cervix with no vaginal bleeding. Laboratory investigations showed packed cell volume of 28%. Other biochemical parameters were within normal limits.

Obstetric ultrasonography at presentation reported a singleton live fetus in cephalic presentation with intrauterine growth restriction, and severe oligohydramnios. Estimated fetal weight was 1.9 kg. The placenta appeared low-lying, fibroid 5.8x4.6cm in the lower uterine area and the uterine contour was difficult to define. A provisional diagnosis of intrauterine pregnancy with severe oligohydramnios and major placenta previa was made. Based on the ultrasound findings, she was planned for emergency caesarean section.

At laparotomy, the uterus was found in the lower pelvis, separate from the pregnancy sac and enlarged to approximately 10 weeks' size. A live extrauterine pregnancy was identified within the right broad ligament. The gestational sac occupied the space between the leaves of the broad ligament, extending laterally into the pelvis. Engorged vessels were noted over the sac surface and distorted right fallopian tube.

A careful incision was made over the anterior leaf of the broad ligament and a live female neonate weighing 1.8 kg was delivered. The baby cried immediately after birth with Apgar scores of 7 and 9 at one and five minutes respectively.

The placenta was attached to the posterior leaf of the broad ligament without bowel involvement. Placental removal was achieved cautiously with meticulous hemostasis. The right fallopian tube was stretched over the sac and distorted. The ectopic sac was not linked with the uterine cavity and it has no other opening thus a cul-de-sac, it was initially repaired but there was progressive accumulation of blood in the sac. Thus, the ectopic sac was resected and broad ligament repaired after securing bleeding points. Estimated blood loss was approximately 1000 mL, and the patient received two units of whole blood intraoperatively.

Postoperative recovery was satisfactory. Mother and baby were discharged on postoperative day four in stable condition. The patient received counseling regarding the rarity of the condition, future pregnancy risks, and the importance of early antenatal ultrasonography in subsequent pregnancies.

The histopathological review of the sac measuring 10cm x 6cm x 2cm showed tissue composed of decidualized stroma admixed with degenerated trophoblastic tissue, mixed acute and chronic inflammatory infiltrates. Also has focal areas of trophoblastic cells infiltrating smooth muscle, vessels and area of extensive fresh and old hemorrhage within thickened fibrocollagenous tissue, these features were consistent with ectopic gestation.

Discussion

Broad ligament ectopic pregnancy is an exceptionally rare form of abdominal pregnancy in which the gestational sac develops between the two layers of the broad ligament. It represents a subtype of secondary abdominal pregnancy and accounts for less

than 1% of all ectopic pregnancies [1-6]. Most broad ligament pregnancies occur following tubal rupture or tubal abortion with secondary implantation within the mesosalpinx or mesometrium [6]. Primary implantation within the broad ligament is extremely uncommon [4,6]. The pathophysiology involves invasion of trophoblastic tissue through the fallopian tube into the broad ligament, where the pregnancy continues to develop due to the rich vascular supply from uterine and ovarian vessels [5]. Because the broad ligament and surrounding pelvic tissues are relatively distensible, the pregnancy may progress to advanced gestational age before symptoms become severe. This explains why some cases reach fetal viability or even term gestation before diagnosis. However, the condition carries substantial maternal and fetal risks, including catastrophic hemorrhage, placental invasion into pelvic organs, disseminated intravascular coagulation, bowel injury, ureteric injury, and maternal death [4,11]. Maternal mortality rates for abdominal pregnancies are estimated to be up to 7–8 times higher than tubal ectopic pregnancies and nearly 90 times higher than normal intrauterine pregnancies [5].

Clinical diagnosis of broad ligament pregnancy is difficult because symptoms are often nonspecific. Patients may present with abdominal pain, gastrointestinal discomfort, painful fetal movements, abnormal fetal lie, vaginal bleeding, or reduced fetal movements. In advanced gestation, physical examination may reveal superficial fetal parts, displaced cervix, easily palpable fetal anatomy, persistent abdominal tenderness, or failure of labor progression. In many cases, the uterus is smaller than expected for gestational age because the fetus develops outside the uterine cavity [1-4,6-10]. In this case, Miss A.O attempted MVA on two occasion without success, this should have been an index of suspicion of an extrauterine pregnancy.

Ultrasonography remains the primary diagnostic tool, although preoperative diagnosis is frequently missed, particularly in low-resource settings. Sonographic features suggestive of broad ligament pregnancy include: empty uterine cavity separate from the fetus, absence of myometrial tissue surrounding the fetus, abnormal fetal lie, oligohydramnios, placenta located outside the uterine cavity and close proximity of fetal parts to the maternal abdominal wall [1,3]. Unfortunately, the ultrasonography picked the normal uterus as a lower segment uterine fibroid mass in our case.

Magnetic resonance imaging (MRI) may improve diagnostic accuracy by delineating placental attachment and the relationship of the pregnancy to adjacent pelvic organs [11]. However, MRI is often unavailable in many developing countries where most advanced abdominal pregnancies are encountered.

Management of broad ligament ectopic pregnancy depends on gestational age, maternal hemodynamic status, fetal viability, and placental implantation site. In advanced pregnancies, laparotomy remains the preferred treatment because of the high risk of uncontrollable hemorrhage [7,9,13]. Delivery of the fetus should be followed by careful evaluation of placental attachment. Placental management remains controversial. Complete placental removal may be attempted when vascular supply can be safely ligated without injuring adjacent organs. However, when the placenta is densely adherent to bowel,

bladder, or major vessels, it is safer to leave it in situ to undergo gradual involution. Attempts at forcible placental removal in such circumstances can lead to life-threatening hemorrhage [13]. In this index case, the placenta was attached to the posterior leaf of the broad ligament without bowel involvement and was easy to separate. However, it was a source of continuous bleeding into the ectopic sac when it was initially repaired. Therefore, a wedge resection of the ectopic sac in the form of salpingectomy was done.

Fetal outcomes in broad ligament pregnancies are generally poor due to placental insufficiency, oligohydramnios, prematurity, fetal growth restriction, and congenital deformities resulting from prolonged compression. Perinatal mortality rates range from 40–95% in reported series. Surviving neonates often have low birth weight and deformities such as limb contractures or facial asymmetry. The delivery of a live healthy neonate at term, as in this case, is therefore exceptionally rare [2].

The present case illustrates several classical features of advanced broad ligament pregnancy, including abdominal pain, oligohydramnios, fetal growth restriction, and difficulty defining uterine anatomy on ultrasonography. The successful maternal and neonatal outcomes observed were likely due to timely surgical intervention before catastrophic hemorrhage or fetal compromise occurred. This case further emphasizes the importance of maintaining a high index of suspicion for abdominal ectopic pregnancy in women presenting with atypical obstetric findings, especially in settings with limited diagnostic resources.

Conclusion

Term broad ligament ectopic pregnancy with live birth is an exceptionally rare obstetric event. Diagnosis is difficult and frequently made only during surgery. High clinical suspicion, careful ultrasonographic evaluation, and prompt surgical management are essential to reduce maternal and fetal morbidity and mortality. This case demonstrates that successful maternal and neonatal outcomes are achievable despite the potentially life-threatening nature of the condition.

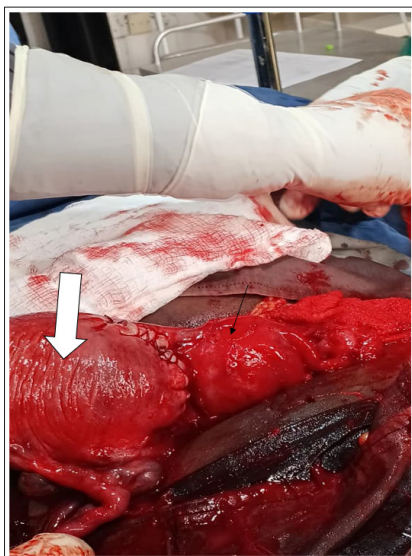


Figure 1: The Uterus on the right with dark thin arrow and Ectopic sac on the left with white big arrow



Figure 2: The ectopic sac with incision on the anterior leaf

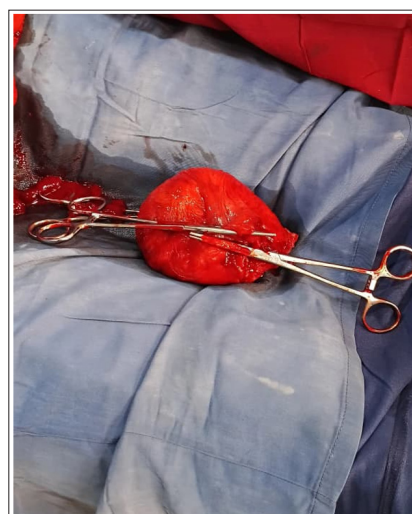


Figure 3: The excised ectopic sac with clamps on it



Figure 4: The ectopic sac with the distorted right tube after delivery of the baby



Figure 5: Clamped edges of the wedged resection of the ectopic sac

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