

MULTIDISCIPLINARY TEAMWORK IN THE MANAGEMENT OF ADVANCED ABDOMINAL PREGNANCY- A CASE REPORT

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Abstract

Introduction: Abdominal pregnancies are rare; often being misdiagnosed or completely missed till surgery is done. This presents a challenge in the diagnosis and management of the condition, especially in a resource-constrained setting. A high index of suspicion is therefore required for prompt diagnosis. The objective in this report is to increase the awareness of the need for early diagnosis of abdominal pregnancy and the need for multidisciplinary planning and care for optimum management.

Case Report and Interventions: A 34-year-old gravida 4 parity 2+1, presented at 41 weeks with a two-month history of abdominal pain.

Thorough examination and ultrasound revealed an advanced abdominal pregnancy.

At laparotomy an abdominal pregnancy with placenta attached to the omentum was noted. A live male infant was delivered with a birthweight of 3.4 kg with an APGAR score of 4 and 6 at 1 and 5 minutes respectively. The baby had a respiratory arrest a few hours after the delivery. Attempted resuscitation in the SCBU unit was unsuccessful. Mother was discharged three days later with no post-op complications.

Conclusion: The occurrence of abdominal pregnancy seems to be a gradually increasing phenomenon. It is therefore imperative for clinicians to have a high index of suspicion to reduce maternal as well as perinatal morbidity and mortality associated with the condition.

Key Words: Advanced Abdominal Pregnancy, Placenta, Multidisciplinary management.

Introduction

Abdominal pregnancy is uncommon¹, posing considerable management challenges especially in developing countries. Advanced abdominal pregnancy is associated with significant fetal and maternal morbidity and mortality². Analysis of 11 abdominal pregnancy related deaths and an estimated 5221 abdominal pregnancies by Atrash and associates in the United States, reported 10.9 abdominal pregnancies per 100,000 live births and 9.2 per 1000 ectopic pregnancies³ and a maternal mortality rate of 5.1 per 1000 cases³. We present a case of advanced abdominal pregnancy in a 34-year-old multipara who had a successful laparotomy with delivery of a live fetus. We also emphasize the need for multidisciplinary planning and care for optimum management.

Case report

Patient was a 34-year-old gravida 4 parity 2 (all alive) +1 spontaneous abortion. She was referred to our facility from a neighbouring health center on account of multiple myoma in cyesis. At presentation her estimated gestational age was 41 weeks 1 day. She presented with a two month history of abdominal pain, most severe in

the suprapubic region and right flank. The pain, described as intermittent in the last 48 hours prior to presentation, had become particularly intense such that the patient could not sleep at night. On examination, the patient looked ill, had mild conjunctival pallor, anicteric with a temperature of 37.9°C, a respiratory rate of 24 cycles per minute, a pulse rate 98bpm and a blood pressure of 110/70mmHg. On abdominal examination, there was generalized tenderness with fetal parts easily palpable. Fetal heart tone was present, ranging between 154-160bpm. Vaginal examination revealed an uneffaced, soft, 2cm long and central cervix. An abdominal ultrasound showed a live fetus noted to be extrauterine. The uterus which was seen to be empty, measured 6.09*5.36*5.56 cm with multiple heterogenous masses (myomas) seen in the anterior wall. The placenta was thought to be attached to the anterior abdominal wall. Small amount of intra-abdominal fluid was also noted. The fetal biometry gave a composite gestational age of 30 weeks with an estimated fetal weight of 3.422kg. The patient's previous deliveries were spontaneous vaginal.

Antenatal Care

She started antenatal from the referral site at 8 weeks. She had two other visits at 16 weeks and 22 weeks. She defaulted subsequent antenatal visits till she reported with severe abdominal pain that led to her referral to our facility. An ultrasound done at 20 weeks queried abdominal pregnancy but another scan done at 35 weeks did not make mention of any abdominal

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pregnancy but commented on her multiple uterine myomas.

Subsequent to her findings at presentation, a decision to deliver was made but the full blood count done at presentation showed a Haemoglobin of 7.8g/dl, MCV of 74.4fl, MCH 24.9pg, MCHC 33.5g/dl, white cell count of $6.75 \times 10^9/L$ and platelets $451 \times 10^3/ml$. In view of the risk of potential heavy bleeding intraoperatively, she was transfused 2 units of blood with a unit on stand-by to be given in theatre. The general surgeon (we have no vascular surgeon in our hospital) was asked to be present at delivery knowing that the placenta could well be attached to the bowel and we may need his help to deal with it.

Findings

Prior to going into theatre, the team had discussed the possible scenario of a torrential bleed and what interventions we had in mind. The laparotomy was done under general anesthesia *via* a midline incision with the general surgeon assisting the obstetrician, and three nurse anesthetists present. The uterus was noted to be about 16-week size, with three small subserosal myomas. A live male infant was delivered with an APGAR score of 4 at one minute, and 6 at five minutes. The birthweight was 3400g with bilateral talipes equinovarus, a distended abdomen and a seemingly prominent forehead. He was transferred to the special care baby unit (SCBU).

The placenta was attached to the omentum, part of the mesentery of the transverse colon and left fallopian tube. Main blood supply was from a left tubo-ovarian pedicle. Right tube and ovary were normal. The main blood supply of the placenta was ligated, and the placenta completely removed. Haemostasis was secured. The estimated blood loss at surgery was 1000 ml. The patient received one unit of whole blood intraoperatively and two units postoperatively. Her recovery was uneventful.

She was discharged 3 days later but without her baby who had a respiratory arrest a few hours after the delivery. Attempted resuscitation was unsuccessful. Parents declined a post-mortem.



Fig 1. Newborn shortly after passing away at SCBU

Discussion

Abdominal pregnancy is a rare form of ectopic pregnancy and is associated with a high maternal mortality, and perinatal morbidity and mortality⁴. This was a case of an advanced abdominal pregnancy, one that goes beyond 20 weeks with a live fetus, or showing signs of having once lived and developed in the mother's abdominal cavity⁵. The incidence of abdominal pregnancy appears to be increasing as a result of increasing use of assisted reproductive technology⁶.

Signs and symptoms

Signs and symptoms of abdominal pregnancy vary greatly and one will need to have a high index of suspicion to make a diagnosis. The signs and symptoms may include abdominal pain, bleeding in pregnancy⁷, and sometimes as intestinal obstruction⁸. Other presentations include painful fetal movement, abnormal lie, an unusual appearance or position of the placenta on the sonography, and failed induction⁷. In some parts of the developing world where access to ultrasound scans is difficult, the diagnosis is made late or during surgery to investigate the abdominal symptoms^{2,9}.

Risk factors

About half of those with abdominal pregnancy have no known risk factors but when present may include tubal damage, pelvic inflammatory disease, assisted reproductive techniques, multiparity, previous history of ectopic pregnancy and tobacco smoking¹⁰. There was no significant risk factor in our patient.

Mechanism/Implantation

Implantation sites can be anywhere in the abdomen. Primary implantation refers to the implantation of the placenta directly into the peritoneum, and secondary implantation means it originated from the tube and re-implanted¹². Suggested mechanisms of secondary implantation follows fimbrial abortion, uterine rupture and rupture of uterine rudimentary horn⁴. Implantation can be on the omentum, fallopian tubes, ovaries, bowel and its mesentery, mesosalpinx, peritoneum of the pelvic wall and abdominal wall^{11,12}. In very rare cases it can get implanted on the liver and spleen¹³. For this case, the placenta was attached to the omentum, part of the mesentery of the transverse colon and left tube with the main blood supply coming from a left tubo-ovarian pedicle. Although we cannot state categorically whether it was primary or secondary, we think it is an advanced primary abdominal pregnancy because the uterus and tubes of this patient were intact, with no signs of uterine rupture.

Diagnosis

Diagnosis of abdominal pregnancy can be very difficult and challenging¹⁴. In a clinical case report from Cameroon on advanced abdominal pregnancies, only 45% of the cases were diagnosed pre-operatively². Studdiford established three main criteria for diagnosing

primary peritoneal pregnancies¹ - normal bilateral fallopian tubes and ovaries²; absence of uteroperitoneal fistula and³a pregnancy related exclusively to the peritoneal surface¹⁵. Although x-rays can help in the diagnosis of abdominal pregnancy¹², diagnosis is usually made with an ultrasound scan¹⁶ but that can be missed as it depends on the experience of the sonographer¹⁷. In abdominal pregnancy ultrasound scan can demonstrate the pregnancy as an extrauterine gestation, fetal parts close to the abdominal wall, absence of uterine wall around the fetus, oligohydramnios, abnormal lie of fetus, placental abnormalities and free fluid in the abdomen^{18,19}. Also, the insertion of a balloon catheter into the uterus can help clarify the image if there is any ambiguity²⁰.

About 50 percent of diagnoses are missed on ultrasound²¹ but MRI and CT are both excellent diagnostic tools²². Teng et al reported an interesting case in which MRI played a decisive role in diagnosis²³. Unfortunately, these advanced imaging technologies are not readily available in most parts of Ghana and Africa, and even when it is available the fees tend to be exorbitant and out of the range of the average client.

Management.

The optimal management of abdominal pregnancy requires planning by a multidisciplinary team and availability of blood products. Sapuri and Klufio suggested a criteria to be met for a safe delivery: placental implantation is in the lower abdomen away from the liver and spleen, the fetus is alive, there are no major congenital malformations, there is careful monitoring of maternal and fetal wellbeing; and there is continuous hospitalization in a well-equipped and well-staffed maternity unit which has immediate blood transfusion facilities²⁴. In our case, the lead surgeon, an Obstetrician, made sure that the general surgeon and anesthetists were present and ready. The blood bank was put on stand-by and made available three units of whole blood, all of which were in hand before making the decision to send the patient to theatre. It is generally recommended to perform a laparotomy when diagnosis is made¹².

Maternal deaths associated with abdominal pregnancy usually result from hemorrhage after removal of the placenta. Uterine contractions normally provide a powerful mechanism to control blood loss, however, in an abdominal pregnancy the placenta is located over tissue that cannot contract and attempts at its removal may lead to life-threatening blood loss¹². There are however risks associated with leaving the placenta in situ, including sepsis, bowel obstruction, pre-eclampsia and fistula formation^{25,26}. The placenta usually takes several months to regress²⁷. Monitoring for the regression of the placenta is done by checking B-HCG levels and doppler ultrasound scan²⁷. Blood transfusion is frequent in such cases. Others use tranexamic acid, recombinant factor VIIa, or angiographic embolization all of which minimize blood loss^{7,28,29}.

Birth defects are frequently encountered in abdominal pregnancies³⁰. The rate of deformations and malformations is estimated at 21%³⁰. Facial and cranial asymmetries, joint abnormalities and limb defects are typical³⁰. The baby had talipes equinovarus, a distended abdomen and a seemingly prominent forehead.

Conclusions

Advanced abdominal pregnancy is rare, and going past the estimated due dates is even rarer. Diagnosis can be very difficult thus a high index of suspicion, good clinical examination, and appropriate imaging in skilled hands can be very helpful. Haemorrhage is the single most important life threatening complication to the mother while some of the babies are born with fetal anomalies. Multidisciplinary planning and care is crucial for optimum management and outcome.

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