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Elisa Farsi
Department of Biomedical,
Experimental and Clinical Sciences,
Division of Obstetrics and
Gynecology, University of Florence,
Viale della Maternità, 50134
Florence, Italy

Sara Mercanzin
Department of Woman and Child
Health, University of Padua, Via N.
Giustiniani 2, 35128, Padua, Italy

Nitsuh Addis Tiru
1) Princess Christian Maternity
Hospital, University of Sierra Leone
Teaching Hospital Complex,
Freetown, Fourah Bay Road 00232,
Sierra Leone
2) Doctors with Africa CUAMM, Via
San Francesco, 126, 35121 Padua,
Italy

Amadu Sesay
Princess Christian Maternity
Hospital, University of Sierra Leone
Teaching Hospital Complex,
Freetown, Fourah Bay Road 00232,
Sierra Leone

Giovanni Putoto
Doctors with Africa CUAMM, Via
San Francesco, 126, 35121 Padua,
Italy

Carlo Saccardi
Department of Woman and Child
Health, University of Padua, Via N.
Giustiniani 2, 35128, Padua, Italy

Felice Petraglia
Department of Biomedical,
Experimental and Clinical Sciences,
Division of Obstetrics and
Gynecology, University of Florence,
Viale della Maternità, 50134
Florence, Italy

Corresponding Author:
Elisa Farsi
Department of Biomedical,
Experimental and Clinical Sciences,
Division of Obstetrics and
Gynecology, University of Florence,
Viale della Maternità, 50134
Florence, Italy

Unknown advanced abdominal pregnancy in low resource setting: A case report

Elisa Farsi, Sara Mercanzin, Nitsuh Addis Tiru, Amadu Sesay, Giovanni Putoto, Carlo Saccardi and Felice Petraglia

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Abstract

Background: Abdominal pregnancy is a rare, life-threatening condition.

Case: A 39-year-old pregnant, gravida 2, para 1 (spontaneous vaginal delivery), was presented to hospital at 36+6 weeks gestation on account of abdominal pain. She underwent an emergency caesarean section due to foetal distress. The diagnosis of abdominal pregnancy was not made until intrasurgical operation was carried out and a live baby of 2.8 kg was delivered via laparotomy with an intact uterus. However, to avoid major bleeding the placenta was left in situ along with gauze packs to achieve hemostasis. A second laparotomy was eventually carried out to remove the gauzes after one week, but the placenta, since being firmly attached to the postero-lateral pelvic wall, was not removed.

Conclusions: The present case recalls the attention to the possible misdiagnosed abdominal pregnancy in low resource settings where ultrasound scan is often not available and to the management of placenta after delivering the foetus.

Keywords: Abdominal pregnancy, expectant management, low-resource setting.

Introduction

Nowadays, ectopic pregnancy is a crucial cause of mortality and morbidity, with an incidence rate of 2% of all pregnancies and accounting for 10% of all pregnancy-related deaths^[1,2]. While in the ectopic pregnancy the fertilized ovum grows in an area outside the uterus (fallopian tubes, ovaries, cervix, vagina), in the abdominal ectopic pregnancy the implantation occurs in a site inside the peritoneal cavity: Omentum, peritoneal membrane, uterine surface and abdominal organs as intestinal loops, spleen, liver and blood vessels. Most of cases of ectopic pregnancy reported in literature are found in the fallopian tubes, with a high risk of maternal mortality in the first trimester, while the incidence rate of abdominal pregnancy accounts for <1%^[1].

The difference between primary and secondary abdominal pregnancy is due to the site of ovum fertilisation in the abdomen. In the first case, it occurs directly in the abdominal cavity while in the second case it is consequent to a uterine perforation of an intrauterine pregnancy or an early rupture of a tubal pregnancy^[2]. The diagnosis is usually arduous, since the non-specificity of symptoms like vaginal bleeding or generalized abdominal pain, which usually shift the diagnosis to a tubal pregnancy.

AEPs diagnosed after the twentieth week of gestation, caused by an abnormal implantation of the placenta, are a significant cause of maternal-fetal mortality due to the high risk of a major obstetric haemorrhage and coagulopathy following partial or total placental detachment^[3].

As reported by Atrash *et al.* in 1987, out of 5221 total cases of abdominal pregnancy, preoperative diagnosis could be made in only 11% of patients, despite multiple obstetric evaluations, antenatal visits and ultrasound scans^[4]. Nowadays radiologic techniques have improved, as clinician awareness has increased throughout the years. In a more recent study, 26 advanced abdominal pregnancies were reviewed and in 56% of the cases a prior diagnosis was done and in all the cases a conservative management was done with a 100% rate of live births^[5].

The radiologic methods which could help in the diagnosis are the pelvic ultrasound scan and magnetic resonance imaging (MRI). In a case of abdominal pregnancy, ultrasonography could be the primary diagnostic modality. The most common signs are the loss of the visualization of the myometrial wall between the gestational sac and the bladder, the unusual position of the foetus with foetal parts uncommonly close to the abdominal wall and sometimes the abnormal placental vascularization^[6].

Otherwise, MRI can be useful to delineate the relationship and sometimes the invasion of placenta to the adjacent organs^[7, 8].

AEP is extremely risky to the patient due to the high mortality rate; this is the reason why all the recent guidelines^[9] recommend the termination of pregnancy at first diagnosis in all cases of ectopic pregnancy. The management of these patients could be either medical, surgical or a combination of these, according to the gestational age, the patient's clinical conditions, the professional skills of the in-charged doctors, the hospital setting and the patient's desires and personal obstetrical history. Surgical treatment options include a laparoscopic or a laparotomic surgery, while the medical treatment involves intramuscular or intralesional methotrexate and/or intracardiac potassium chloride. Abdominal pregnancies frequently terminate during early gestational age, when the placenta spontaneously detaches from the implantation site, causing abdominal bleeding and consequent peritoneal irritation by hemoperitoneum followed by abdominal pain.

Nonetheless, in rare cases, the pregnancy can progress to late stages and the foetus must be delivered via laparotomy. Once the foetus is delivered, the options for the placental management are mainly two: either the placenta is removed or it is left in place for its spontaneous regression, with or without the use of methotrexate. However, no guidelines provide specific recommendations, therefore the choice is taken according to the surgeon's skills, the location of the placenta and its vascular supply, and the availability of materials and blood.

Clinical Case

A 31-year-old gravida 2 para 1 at 36 weeks + 6 days gestational age (from 1st trimester ultrasound scan) was admitted to Princess Christian Maternity Hospital, Freetown, Sierra Leone, on November 29th, 2023, on account of abdominal pain, gradual, intermittent and increasing in frequency and severity, consistent with labour pain. She had been diagnosed with HIV from the first pregnancy, from when she was under antiretroviral medication, and had an otherwise unremarkable family and social history. No past surgical and gynaecological intervention were reported. Her obstetric history accounted for one spontaneous vaginal delivery in 2011 at term, after that she inserted a contraceptive subcutaneous implant for 5 years. During her pregnancy she had three antenatal clinic visits, one for every trimester, where vitals, symphysis fundal height (SFH), weight and fetal heart rate (FHR) were always examined while only at the first one visit Hb value, HIV and syphilis status were checked. Only the 1st trimester ultrasound scan was done during the pregnancy.

At the time she arrived in OPD (Outpatient Department) on examination, the patient was alert, afebrile, acyanosed, anicteric, not pale and not dehydrated. No pedal edema was reported. Her blood pressure was 133/79 mmHg, pulse rate was 104 bpm, respiratory rate was 26/min, temperature was 36 °C and SpO₂ was 98%. Abdominal examination revealed an estimated foetal weight of 3.7 kg, SFH 37 cm, abdominal gut (AG) 104 cm. Foetal heart rate by Doppler was 98 bpm. Vaginal examination showed a cervix posterior, 20% effaced, soft consistency and closed, station-2 (Bishop score 3/13). The last bedside ultrasound scan recorded a breech presentation.

Due to the unfavourable cervix, together with the lack of opportunity of continuous monitoring by cardiotocography and to avoid further delaying the surgery, the decision for an emergency cesarean section on account of foetal distress was taken. While awaiting surgery, the patient received intrauterine resuscitation man oeuvres (placed on O₂ support, nursed in left

lateral position, intravenous fluids were administered).

Surgery was performed after 5 hours from the diagnosis. Intraoperatively, the surgeon described an abdominal pregnancy and managed to deliver a healthy live male in breech presentation, Apgar score was 7 in 1 minute and 8 in 5 minutes. Birth weight resulted 2.8 kg. The newborn showed no major anatomical abnormalities. Uterus was normal for size and morphology as well as ovaries and tubes. The placenta was found firmly adherent to the posterolateral abdomino-pelvic wall. After the ligation of the umbilical cord, due to the high risk of intraoperative massive haemorrhage, the decision to leave the placenta in situ and to pack the abdominal cavity with gauzes was made, for a re-laparotomy to be performed in the following days. Total estimated blood loss was 1200 milliliters, and two emergency units of whole blood were transfused intraoperatively.

The post-operative plan was to transfer the patient to HDU, PCMH's high intensity care unit, where broad spectrum antibiotics, analgesics, intramuscular methotrexate 50 mg and intravenous fluids were administered. During postoperative day 1, Hb was 6 g/dL, so the patient received two more units of cross matched blood. She was taken back to the operating theatre after one week: since the concern of major bleeding, we opted to wait for the placenta to regress spontaneously. During the surgery, the abdominal packs were removed, adequate hemostasis was checked, intraoperative abdominal washing was performed, and placenta was left in situ.

Both the mother and the baby recovered well and were discharged home after two weeks from the first laparotomy, in good general conditions. Unfortunately, the baby passed away after one month of life due to unexplained fever. At the follow up, she reported a wound dehiscence for which she was followed by nurses to do wound dressing and that ultimately closed by secondary intention.

She underwent a both transvaginal and transabdominal ultrasound scan after 4 months from the surgery from which the placenta could not be identified. She hadn't resumed her usual menstrual period yet at the moment of the ultrasound scan. No further investigations were possible due to financial constraints.

Discussion

The present case reflects a poor management of pregnancies and an overall lack of resources in this kind of setting. The main issue with this patient was that the abdominal pregnancy was only diagnosed intraoperatively; so, no adequate materials to face any complications during surgery were provided, nor blood units were stocked in case of need. Therefore, the decision not to attempt to cleave the placenta from its site on the abdominopelvic wall was due to its firm attachment and the impossibility to eventually deal with a major haemorrhage, which should have been ultimately caused by the deep invasion of tissue on abdominal organs not meant to host it, and the lack of hemostatic mechanisms exerted by myometrial contractions.

Our case raises questions such as: "Could we have tried to remove the placenta from its site, if materials and surgical skills consented to it?" or "What would our management have been if we knew antepartum that this was an abdominal pregnancy?". At a review of the literature on good-outcome abdominal pregnancies, sporadic cases of known abdominal pregnancies, held up to the viability of the foetus, were carried out through a watchful, close follow-up^[10-12] nonetheless, in most of the cases it has been a rather surprising intraoperatively diagnosis while performing an emergency caesarean section for other obstetric reasons^[13-18]. Certainly, if the surgeon knows about the

abdominal location of the pregnancy, much attention must be paid during surgery to the high risk of abdominal organs and abdominal vessels injury, since the possible displacement of the same in the abdominal cavity due to the presence of the foetus with its placenta, membranes and amniotic fluid.

One similar case reported ^[19] a large bowel injury inadvertently made to the sigmoid colon due to the adhesions between the large bowel and the ectopic mass.

No guideline provides recommendations on how to deal with the placental removal after the extraction of the baby. One case report from Burundi ^[20] showed a conservative approach with the placenta left in the abdomen, since the removal of the ectopic placenta may have been associated with life-threatening complications. Moreover, the placental vascularization is often difficult to discern and clearly identify. The use and timing of methotrexate is still controversial, as it has been correlated with lobular necrosis and, while decreasing bHCG level quickly, it does not modify the degree of placental reabsorption, which is poor ^[21]. Abdominal packing with gauzes during the caesarean section followed by a second laparotomy to remove the gauzes has been described to be successful in the event of major bleeding, whether the placenta was removed or not ^[15, 22]. If the facility permits so, a specific radiological embolization of the placental bed vessels has been demonstrated to be a useful tool to control the bleeding.

Conclusions

The present study showed that

- Unlike tubal ectopic pregnancies, abdominal uncomplicated pregnancies may not be detected until late gestational ages and even to term. In a low-resource setting where most patients accomplish with one, if none, ultrasound scan throughout all the duration of the pregnancy, it is hard to have a suspicion of ectopic in absence of symptoms.
- In a public academic hospital, the only diagnostic tools available are point-of-care hemoglobin value, without the possibility of performing for free any other hematological laboratory tests or imaging investigations. These must be carried out in other private facilities, but often they are unavailable to patients due to financial constraints. The free healthcare obstetrical program provided by the government barely guarantees antenatal clinic visits where blood pressure is recorded, but no ultrasound scans are available.
- A first trimester ultrasound scan showing an empty uterus is warranted to detect ectopic pregnancies, but attention should be paid in performing it, as with any other diagnostic procedure. As the pregnancy advances and the foetus gets to more advanced gestational ages, it could be more likely missed that the location of the pregnancy is not inside the uterus.
- According to guidelines, a patient with a first trimester vital ectopic pregnancy should promptly undergo its termination, either medical or surgical. In the case of misdiagnosed abdominal pregnancies which luckily manage to get more advanced, it is advised to carefully balance the benefits and risks of letting the pregnancy proceed, according to the mother's will and the healthcare providers' skills, whether to term or to the age of viability of the foetus. An ethical dilemma of terminating an ectopic pregnancy must be considered in infertile women with no possibility of access to assisted reproductive techniques in low resource settings ^[10].

It was deemed safer in our setting to leave the placenta in situ to

avoid a major bleeding for which we were not prepared, but further investigation and long-term follow up is needed to confirm whether it is safer to perform a conservative management aiming for spontaneous regression, with or without the use of methotrexate, or to attempt its surgical removal in a tertiary care centre with the availability of adequate blood supply, a trained anaesthetist équipe and a skilled abdominal surgeon.

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Conflict of Interest:

Not available

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