

## A case of advanced viable extrauterine pregnancy

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### SUMMARY

**Advanced extrauterine pregnancy with a successful outcome is a rare event. A case is presented of a 34-year-old woman at 35 weeks gestation whose abdominal pregnancy was successfully managed. The diagnostic and management problems associated with abdominal pregnancy are discussed, and especially the controversial issues of the treatment of the placenta after delivery. The reasons for the high maternal and perinatal mortality associated with the condition are analyzed.**

### Case Report

The patient was a 34-year-old woman from Balimo in the Western Province. Previously she had two normal vaginal deliveries in her village in 1986 and 1989. There were no postpartum complications and no history of any previous gynaecological problems, especially pelvic inflammatory disease. Her menses were normal and regular, and there was no relevant past medical, surgical or family history.

She moved from her village in Balimo in the Western Province to a squatter settlement outside Port Moresby. She presented on 17 April 1991 to the Port Moresby General Hospital Labour Ward complaining of lower abdominal pain, decreased fetal movements and generalized malaise of 12 hours duration. She could not remember the date of her last period, She gave no history of vaginal bleeding or anything suggestive of premature rupture of the membranes.

On examination she was afebrile with a blood pressure of 110/70, a pulse rate of 68 per minute and a respiratory rate of 18 per minute. There was generalized abdominal tenderness and the symphysiofundal height was 35 cm. The lie was longitudinal with the breech presenting. The fetal heart was heard above the umbilicus at a rate of 140 beats per minute.

There was a separate hard mass present in the right iliac fossa equivalent to an eighteen-week pregnancy. On vaginal examination it was not possible to feel the cervix. A breech presentation could easily be detected through a distended posterior fornix.

A real time ultrasound and plain abdominal X-ray were performed in the labour ward but the findings were difficult to interpret. In essence a normal fetal morphology equivalent to a 35 weeks fetus was shown inside a very thin sac. The amniotic fluid index was 9.6 cm, and the separate mass in the right iliac fossa appeared on ultrasound to be the uterus. A plain lateral abdominal and fetal X-ray revealed fetal parts superimposed on the maternal spine.

A provisional diagnosis of advanced extrauterine pregnancy was made. The patient's initial haemoglobin was 10.0 g/dl and four units of packed cells were crossmatched. Arrangements were made for examination under anaesthesia, laparotomy and delivery with an experienced paediatrician, obstetrician, vascular surgeon and anaesthetist being present. The mass in the right iliac fossa was confirmed to be the uterus and cervix at examination under anaesthesia.

Laparotomy was performed through a midline incision extending from the pubis to

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the umbilicus. An advanced extrauterine pregnancy was present with the baby inside an intact amniotic sac which was attached to the pouch of Douglas, caecum, sigmoid, descending and ascending colon and posterior wall of the uterus. The placenta was implanted on the posterior surface of the upper pelvis and posterior wall of the abdomen. It drew an extensive blood supply from pelvic, sigmoid, and ascending and descending colonic vessels. The uterus was separate from the placenta and the amniotic sac, and enlarged to the size of an 18 weeks pregnancy with both tubes and ovaries normal.

The amniotic sac was incised and a live female infant weighing 2970 grams delivered. The umbilical cord was ligated as close as possible to the placenta and divided. Because the placental blood supply was so very extensive involving major pelvic and abdominal vessels it was considered too risky to attempt removal. Accordingly, 10 figure of 8 haemostatic sutures were placed at the circumference of the placenta. An abdominal drain was inserted to drain the placental bed. Blood loss of approximately 1300 ml during the operation was replaced with four units of packed cells.

The patient made an excellent convalescence, and there were no postoperative resuscitation, analgesic or respiratory problems. A postoperative haemoglobin of 7.8 g/dl was corrected with a further two units of packed cells. On day 8 the patient was commenced on a course of methotrexate 50 mg intramuscularly on alternate days for 4 doses. On the days she was not receiving methotrexate she was given four doses of Leucovorin 6 mg intramuscularly.

Her postoperative course was covered with chloramphenicol, metronidazole and gentamicin. Her full blood examination, renal function and liver function were all normal during and after the course of methotrexate.

On day 20 the patient was given Depo-provera 150 mg intramuscularly and commenced on Fefol, one tablet twice a day for two months.

Six weeks after being discharged from hospital the patient presented with a febrile

illness. Ultrasound examination showed that the placental mass had decreased significantly in size. The pyrexia was due to an acute attack of malaria which was confirmed by a positive blood slide. The patient responded to antimalarial treatment but unfortunately absconded from hospital. Since then she has been completely lost from follow-up.

## Discussion

The management of abdominal pregnancy is a formidable challenge to the most skilled of obstetricians. It is a potentially life-threatening condition, especially in developing countries where diagnosis may be delayed. Its incidence is a reflection of the degree of pelvic inflammatory disease and ectopic pregnancy in particular communities. The highest incidence in the world is in the South African Bantu, where it is stated that 2.2% of ectopic pregnancies are of the abdominal variety (1). Port Moresby General Hospital statistics reveal an incidence of 1 abdominal pregnancy per 62 cases of ectopic pregnancy, giving a rate of 1.6% (2).

Maternal mortality is from severe intraabdominal haemorrhage as well as infection. In the USA Atrash et al. (3) reported that the risk of dying from an abdominal pregnancy is 8 times greater than the risk of dying from a tubal pregnancy, and 90 times greater than with a normal intrauterine pregnancy.

Perinatal mortality associated with abdominal pregnancy is also very high, ranging between 5% and 25% (4). This is largely related to the friability and vascularity of the placental implantation site with fetal growth retardation and fetal abnormalities both being major problems.

Abdominal pregnancies may be classified as primary or secondary. In a primary abdominal pregnancy there is direct implantation on the peritoneal surface and this is associated with anatomically normal fallopian tubes, ovaries and uterus. A secondary abdominal pregnancy results from displacement of the fertilized ovum from the fallopian tube or from the uterus to its new site. The case described in the case report is almost certainly a primary abdominal pregnancy. However, such a

classification has little practical clinical relevance for diagnosis and appropriate therapeutic management.

The key to the successful management of advanced abdominal pregnancy is early diagnosis to avert massive haemorrhage secondary to placental disruption and separation. Suggestive clinical findings are recurrent lower abdominal pain, an unstable lie and, as in this case, the detection of a separate mass from the amniotic sac containing the fetus. Evidence of poor fetal growth may also be present. On vaginal examination the finding of a radically displaced anterior and uneffaced cervix has been reported.

A plain lateral X-ray of the abdomen and the fetus confirms the diagnosis of advanced abdominal pregnancy by showing the presence of fetal parts superimposed on the maternal spine. This is particularly important for clinicians in developing countries where there are no ultrasound or magnetic resonance imaging facilities.

An experienced ultrasonographer will confirm the presence of an extrauterine pregnancy by showing the amniotic sac to be separate from the uterus. Fetal growth retardation and fetal abnormalities may also be present.

Magnetic resonance imaging (MRI) is an excellent modality to assess the definitive area of placental implantation. However, it is not available in many centres and is rarely required. Combined with ultrasound it may be useful in following up placental involution postoperatively.

Experience has shown that in 50% or more of cases the diagnosis of abdominal pregnancy is not anticipated because the condition has been overlooked. The management of abdominal pregnancy clearly depends on the stage at which it is diagnosed. If diagnosed before 28 weeks gestation then conservative management is feasible provided the following criteria are followed:

- 1 absence of a major congenital malformation
- 2 a live fetus
- 3 continuous hospitalization in a well-equipped and well-staffed maternity unit

- with immediate blood transfusion facilities available
- 4 careful monitoring of maternal and fetal wellbeing
- 5 placental implantation in the lower abdomen away from the liver and spleen.

Once sufficient viability is reached (after 28 weeks gestation) immediate laparotomy and delivery is recommended. However, there is little published information on the duration of conservative treatment that can be safely employed beyond this stage to gain further fetal maturity.

If an abdominal pregnancy with a live and structurally normal fetus is diagnosed after 28 weeks gestation immediate laparotomy and surgical removal of the pregnancy is recommended. It is important to have at least six units of blood crossmatched and to have in attendance an experienced obstetric surgeon, paediatrician and, if possible, an experienced vascular surgeon.

In a situation when there is fetal death in utero in an advanced abdominal pregnancy the fetus should be delivered as soon as possible because the patient is at greater risk of disseminated intravascular coagulation. It is important to take all the necessary steps to minimize operative risks and for the placenta to be managed in the same manner as with a viable fetus.

There is continuing controversy with regard to the management of the placenta. Whether the abdominal pregnancy is early or advanced, it is recommended that the umbilical cord be ligated as close as possible to the placenta. The removal of the placenta is likely to be associated with torrential and uncontrollable intraabdominal haemorrhage. A useful procedure, as was used in this case, is to insert figure of 8 sutures at the periphery of the placenta to control any bleeding that may subsequently occur. A drain site is always put down to the placental bed. It is accepted that leaving the placenta in situ does increase the risk of subsequent paralytic ileus and intraabdominal sepsis. However, these risks are much less than the likelihood of severe haemorrhage associated with attempted placental removal.

Ombelet et al. (1), in a large series of advanced abdominal pregnancies, reported recently that the placenta was completely removed in 58% of cases and left in situ in the remaining 42%. Where the placenta is left in situ, it may continue functioning for a number of weeks, and even as long as five and a half years. Both serial beta-HCG levels and MRI can be used to follow up placental involution. Methotrexate may be used to hasten placental involution, as we did in this case. However, the side-effects of methotrexate have to be balanced against the usefulness of achieving an increased rate of dissolution of placental tissue.

After an abdominal pregnancy the prognosis for the future depends essentially on whether the fallopian tubes and ovaries are normal and conserved at the time of the laparotomy. In the case described of a primary abdominal pregnancy it would appear that this patient's future fertility would be unaffected. Wisely, she was given Depo-provera both to hasten placental involution and also to effect contraception.

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