

Advanced Abdominal Pregnancy **A Case Report of Good Maternal and Perinatal Outcome**

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ABSTRACT

Advanced abdominal pregnancy is understood to mean any extra-uterine pregnancy found within the peritoneal cavity that is greater than 20 weeks gestation. Its management is one of laparotomy with varying complications including poor perinatal outcome and increased maternal morbidity and mortality. There is no accepted consensus for the complete removal of the placenta at laparotomy. This paper reports the management of a unique case of advanced abdominal pregnancy that was diagnosed by ultrasound at 20 weeks gestation and treated conservatively until delivery of a viable female neonate at 33 weeks and 4 days by elective laparotomy. At the time of laparotomy, the placenta was removed completely with good maternal outcome. This, to the best of our knowledge, is the first case in the West Indian literature documenting complete removal of the placenta at the time of laparotomy with good maternal outcome.

Keywords: Abdominal pregnancy, advanced abdominal pregnancy, conservative management, laparotomy, placenta removal

Embarazo Abdominal Avanzado **Reporte de un Caso con un Buen Resultado Materno y Perinatal**

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RESUMEN

Por embarazo abdominal avanzado se entiende cualquier embarazo extra-uterino que se halle dentro de la cavidad peritoneal, a partir de las 20 semanas de gestación. Su tratamiento requiere laparotomía, y presenta distintas complicaciones que incluyen pobre resultado perinatal, así como aumento de la morbilidad y mortalidad materna. No hay consenso con respecto a la extracción completa de la placenta al realizar la laparotomía. Este trabajo reporta el tratamiento de un único caso de embarazo abdominal avanzado, diagnosticado por ultrasonido a las 20 semanas de gestación, y tratado de forma conservadora hasta el parto de un neonato viable hembra a las 33 semanas y cuatro días, mediante laparotomía electiva. A la hora de la laparotomía, se extrajo la placenta completamente con un buen resultado materno. Se trata – hasta donde sabemos – del primer en la literatura de West Indies, que documenta la extracción completa de la placenta al momento de la laparotomía con buen resultado materno.

Palabras claves: embarazo abdominal, embarazo abdominal avanzado, tratamiento conservador, laparotomía, extracción de la placenta

West Indian Med J 2011; 60 (5): 587

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INTRODUCTION

An abdominal pregnancy is a rare event with an incidence between one in 9500 deliveries and one in 60 ectopics with maternal and perinatal mortality rates of 2–18% and 75–95%, respectively (1). The management of abdominal pregnancy depends on factors such as gestational age of the fetus and the patient's desires for termination.

CASE REPORT

A 29-year old female presented to the Mount Hope Women's Hospital with 19 weeks and three days of amenorrhoea with an ultrasound done one day prior revealing an extrauterine pregnancy. Her gestational age was based on her last menstrual period.

The ultrasound report revealed a single live fetus in an extrauterine position totally separate from the uterus. The uterus was normal in size with an endometrial thickness of 0.6 cm. The fetus was surrounded by a thin septum and a small quantity of amniotic fluid. The fetal biometry gave a composite gestational age of 20 weeks two days. The placenta was located superior and on the right lateral aspect of the sac. A repeat ultrasound on the day of presentation confirmed the diagnosis.

The patient previously had a normal spontaneous vaginal delivery of a male infant with a birthweight of 6 lbs 8 oz in 1997 at the Port-of-Spain General Hospital. She reported no significant medical, surgical, gynaecological, social or family history and the patient denied taking any other medications besides prenatal vitamins and any allergic reactions to known medications. She desired continuation of pregnancy after counselling.

The patient was subsequently admitted to the ward and followed-up with serial sonograms done every three weeks. This follow-up revealed adequate growth and normal fetal anatomy. The scan done at approximately 24 weeks revealed normal amniotic fluid and it also suggested that the placental blood supply was primarily coming from the posterior region of the uterus. Routine antenatal investigations and haemoglobin values were all normal throughout the antenatal course including an O'Sullivan's test (50 g oral glucose load) done at 28 weeks which was 77 mg/dL. The patient received a single course of dexamethasone at 28 weeks.

At approximately 30 weeks gestation, the patient developed recurrent episodes of palpitations and chest tightness. Subsequent investigation revealed a paroxysmal arrhythmia. Cardiologist consultation was requested. Electrocardiogram and 24-hour Holter monitoring revealed frequent premature ventricular complexes, ventricular bigamy and occasional runs of non-sustained ventricular tachycardia. Echocardiography revealed no structural abnormalities. No medical intervention was required.

Delivery *via* laparotomy at approximately 34 weeks with blood products as well as general surgeon assistance was the definitive plan, however, due to increasing abdominal discomfort and distension, delivery was brought

forward one week and planned at 33 weeks. The patient had biophysical profiles done twice weekly between 28 and 33 weeks gestation and these were all reassuring.

Delivery was by explorative laparotomy *via* a midline incision with a general surgeon on standby and three units of packed red cells available. The laparotomy was done under epidural anaesthesia based on the recommendation from the cardiologist concerning her cardiac arrhythmias. At laparotomy, the uterus was enlarged to the size of a 20-week gravid uterus with the placenta and gestational sac superior to it. The placental blood supply was derived from the left ovary and left uterine arteries as well as from the right ovarian cascade of vessels. The infant was in the amniotic sac which was covered anteriorly and superiorly by the placenta.

The infant was delivered by incising the sac clear of the placenta and then breech extracted. The blood supply of the placenta was ligated completely but with sacrifice of the left ovary and fallopian tube due to their adherence to the placenta and for haemostasis. The placenta, left ovary as well as left fallopian tube were sent for pathological review. The estimated blood loss was 1500 ml and the patient received two units of packed cells intra-operatively.

The neonate's apgar scores were six at one minute and eight at five minutes. The birthweight was 2210 grams with bilateral *talipes equinovarus*. The neonate had an uncomplicated neonatal intensive unit stay and was discharged home with follow-up in the orthopaedic outpatients' clinic for the deformity of the legs. Chromosomal analysis was done because of strong maternal desire and the child was 46XX and follow-up four years post delivery was unremarkable.

DISCUSSION

The literature states that once the diagnosis of extra-uterine pregnancy is made, immediate surgery is advisable because of the high maternal and perinatal mortality as well as high incidence of birth defects in resultant surviving neonates (1). Conservative management may be entertained if the pregnancy is diagnosed at a gestational age greater than 24 weeks with healthy mother and viable fetus as well as a consenting mother. Maternal consent to the benefits, risks and alternatives with resulting complications must be performed. This discussion should include aspects of neonatal intensive care if the neonate is born prematurely. This degree of counselling is needed to educate the expectant mother and to prevent any misunderstandings if an adverse outcome should occur.

Conservative management should include inpatient care until delivery, as an outpatient parturient may be more at risk to a traumatic insult that may result in a dead fetus or mother, as well as serial sonography to ensure adequate fetal growth and liquor volume. Delivery is by elective laparotomy at a gestational age as close as possible to term. In the indexed case, the risks of worsening recurrent maternal symptoms of abdominal discomfort as well as recurrent palpitations and new onset recurrent cardiac arrhythmia far

outweighed the risks associated with prematurity. The risks of prematurity were also reduced with administration of a single course of antenatal steroids at 28 weeks.

The management of the placenta at the time of laparotomy is of importance. At this time, it is understood that the surgical intervention taken at the time of laparotomy impacts on maternal morbidity. It is recommended that the placenta be removed only if its entire blood supply can be ligated and that partial removal of the placenta is the most hazardous and should not be undertaken (2). Total placental removal was achieved in the index case along with a haemorrhagic, adherent left adnexa. The percentage of placentae removed in cases of abdominal pregnancy is unknown but thought to be rare. Recent studies show that leaving the placenta *in situ* is less costly, causes less maternal morbidity, may shorten hospital stay and lowers the risk of blood transfusion and surgical menopause in comparison to placental removal (3). It is quite possible for placentae to involve and invade other peritoneal structures such as the bowel; hence removal at laparotomy would entail excision of involved bowel or invaded organ.

Placentae left *in situ* need to be followed to document involution as well as for complications to involved or invaded intraperitoneal organs. Serial serum beta-human chorionic gonadotrophin (β -HCG) and imaging, for example ultrasonograms (colour Doppler) or magnetic resonance imaging (MRI) can be used to follow placental resorption. It is recommended that the β -HCG levels be followed to the non-pregnant state to ensue complete resolution. The length of time for follow-up is unknown and would depend upon the case in question. One case report details follow-up of a patient for five years and showed regression of placenta volume in a bi-modal pattern (4). This long time frame of follow-up may be undesirable to patients.

Methotrexate has a role in aiding the decrease in placental mass in a similar manner to its usage in gestational trophoblastic disease. Other complications beside metho-

trexate exposure will include re-laparotomy and excision of the placental mass if symptoms worsen or suggest intra-peritoneal organ perforation (4). If at the time of diagnosis or during conservative management the neonate dies, the laparotomy should be hastened to avoid complications of amniotic fluid embolism, disseminated intravascular coagulopathy or severe sepsis. This case is exceptional in that conservative management was used with successful outcome for both mother and neonate and complete removal of the placenta at laparotomy was achieved.

Advanced abdominal pregnancy is seen more commonly in the developing world but from a West Indian perspective this is a rare but known entity. Briggs *et al* in 1964 described the management of three such cases with good maternal and neonatal outcome. It is interesting to note that all three placentae were left *in situ* (5). To the best of our knowledge, we present the fourth case in the West Indian medical literature of advanced abdominal pregnancy with good outcome to both mother and baby and the first case in which there is complete removal of the placenta. It is our hope that a regional registry be formed documenting management taken and resulting outcome — that is if the placenta was removed or left *in situ* — so as to draw conclusions based on our patient population and resources.

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