

Full term broad ligament pregnancy through a Cesarean scar

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A broad ligament pregnancy is an extremely rare condition. Diagnosis is often missed and finally made during laparotomy. We present a case which remained undiagnosed throughout her pregnancy till she reached term and unfortunately had intrauterine foetal demise when she reported to our hospital. On clinical suspicion, ultrasound and magnetic resonance imaging evaluation was done which picked up the diagnosis of abdominal pregnancy. On laparotomy a broad ligament pregnancy was found with a rent in the previous Cesarean scar towards the gestational sac in the broad ligament.

Keywords: Broad ligament; Ectopic pregnancy; Ultrasonography

Introduction

Broad ligament pregnancy also termed as interligamentous pregnancy is a rare form of ectopic pregnancy. In literature a few cases have been reported where such pregnancies reached term and even with live birth of a baby [1-4]. We report a case of post-Cesarean term pregnancy diagnosed to have an abdominal pregnancy by clinical and imaging evaluation, but finally found to be a broad ligament pregnancy on laparotomy. The magnetic resonance imaging (MRI) picture and laparotomy findings suggested that the ectopic gestation in the broad ligament has occurred through a rent in the old Cesarean scar. We share the challenges faced by us to manage this rare type of case.

Case report

An unbooked 30-year-old female, gravida 2, para 1 with no live issues with previous 1 Cesarean section 4 years back due to oligohydramnios (with neonatal death due to extreme low birth weight) was referred to our hospital from a peripheral clinic, with amenorrhea of 9 months and inability to perceive foetal movement for last one week. She also presented to us once before at 34 weeks with an ultrasonography report of a peripheral clinic showing viable fetus with intra-uterine growth retardation and oligohydramnios with estimated

foetal weight of 1.65 kg. At that time she was advised admission but she refused to get evaluated and hospitalized due to some domestic problem.

During her present visit her pregnancy was of 39 weeks from her last menstrual period. She was a known case of bronchial asthma and on steroids off and on for the last 18 years. She was having markable steroid induced myopathy and cushingoid features like moon face, truncal obesity, proximal myopathy, abdominal striae. She had no complaints of pain or discomfort in abdomen. Her vital parameters were found within normal limits. Crepitations and rhonchi were heard in both the lung fields. On abdominal examination, uterus was of 28 weeks size, soft, non-tender and clinically liquor was found to be grossly reduced. Foetal heart sound

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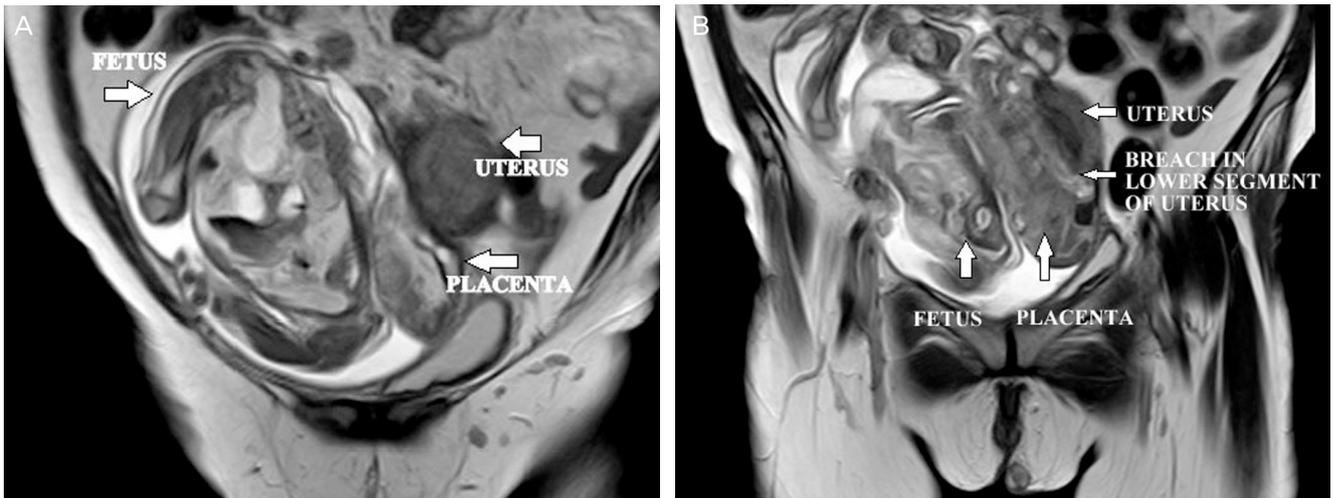


Fig. 1. (A) Magnetic resonance imaging picture of pelvis showing uterus on left side and fetus on right side. Placenta medial to fetus. (B) Magnetic resonance imaging picture of pelvis showing a breach in the lower segment of uterus opening into the fetal sac.

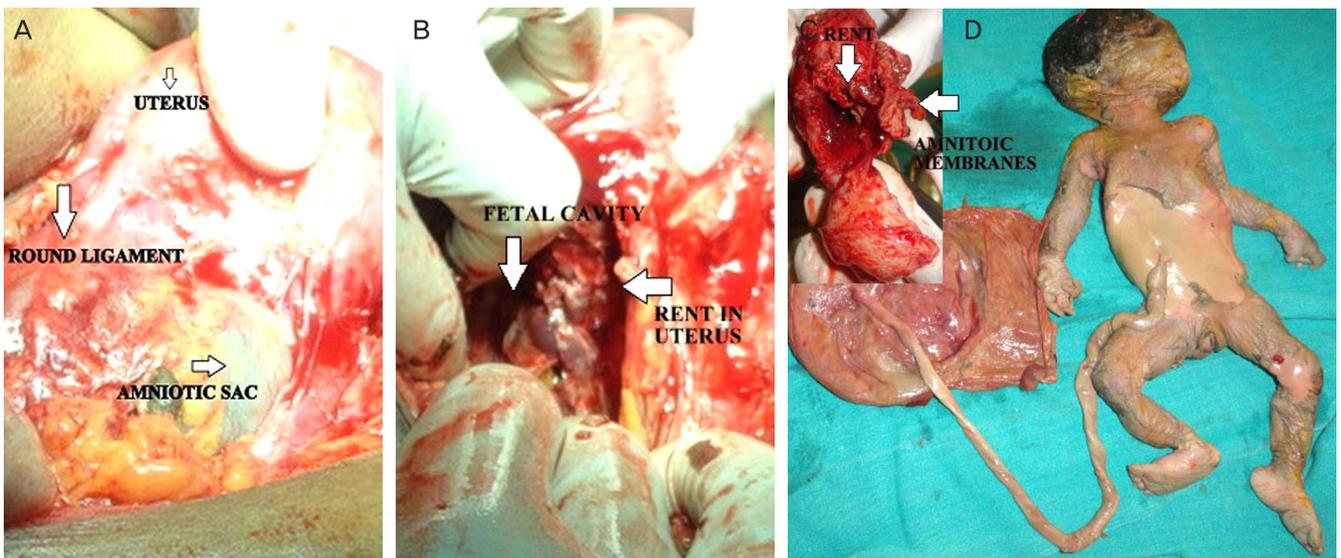


Fig. 2. (A) Intraoperative photograph showing amniotic sac pushing the uterus to the left. Round ligament stretched over the amniotic sac. (B) Intraoperative photograph showing the cavity occupied by amniotic sac and rent in the anterior wall of the lower segment of uterus. (C) Photograph of postoperative specimen of uterus with a rent in the anterior wall lower segment. (D) Photograph showing full term extracted fetus with placenta.

was absent. On per vaginal examination, cervix was found un-effaced, os closed, laterally displaced to left side and high up. Per vaginal findings of a soft mass occupying the whole anterior fornix pushing the cervix posteriorly and to the left, raised a suspicion of some abnormality. Initial ultrasound report only mentioned intrauterine pregnancy with foetal death. Since clinically we suspected some associated abnormality, patient was referred back for review ultrasonographic evaluation and if required MRI abdomen to know the exact nature of pathol-

ogy. On ultrasonography by a senior specialist, it appeared to be an extra uterine pregnancy with a non-viable fetus lying to the posterolateral aspect of the uterus. To confirm the diagnosis MRI abdomen was done, which found the entire amniotic sac with a fetus and its placenta in the abdominal cavity pushing the empty uterus anteriorly to the left side (Fig. 1A). It also revealed a breach in the lower segment of the uterus communicating to the fetal sac (Fig. 1B). Her haemoglobin was 9.3 g/dL and other haematological and biochemical

parameters including coagulation profile were within normal range.

She was taken up for surgery. Her lung condition caused a challenge to the anaesthesiologist which was tackled by a team of anaesthesiologist and physician. Under general anaesthesia the abdomen was opened. Omental adhesions were encountered, which were separated by sharp and blunt dissection. The uterus was found to be about 10 to 12 weeks size lying on the anterior and left inferolateral aspect of the amniotic sac. The sac was found enclosed in the right broad ligament pushing the fallopian tube and the ovary upward and round ligament stretching over it (Fig. 2A). A diagnosis of right broad ligament pregnancy was made. Both the tube and ovary on the right side were found to be normal. Anterior wall of the sac was cut open. A macerated female fetus of 1.7 kg was extracted. The fetus appeared to be at term from the presence of features like creases all over the soles, black shiny hair and fully grown nails and nipples (Fig. 2). Placenta was found on the medial aspect of the sac overlying the uterine side, and it could be removed without causing undue haemorrhage. Anterior wall of the lower segment of the uterus was found gaping and opening into the foetal sac in the right broad ligament (Fig. 2D). Uterus was lying on left anterior and cervix was on left posterior aspect of the sac. The sac had extended into the uterovesical space anteriorly. Anatomy of lower uterine segment was grossly distorted, papery thin and indistinguishable from amniotic membrane. A thin strip of tissue was holding the cervix attached to the uterus (Fig. 2C). Uterus was considered not salvageable. A total abdominal hysterectomy was performed. A drain was placed in the cavity occupied by the fetus. Postoperatively managed by a team of specialists. She was put on IV steroids besides other medication. However she recovered well without any untoward occurrence. Stitches were removed on the 10th postoperative day in view of her prolonged medication with steroids.

Discussion

Interligamentous pregnancy is a rare form of ectopic abdominal pregnancy. Incidence is reported as 1 in 300 ectopic pregnancies [1]. A broad ligament pregnancy usually results from trophoblastic penetration of tubal pregnancy through the tubal serosa and into the mesosalpinx, with secondary implantation between the leaves of broad ligament. It can also

occur if a uterine fistula develops between endometrial cavity and the retroperitoneal space between the leaves of broad ligament. Rare types of secondary abdominal pregnancies can occur after spontaneous separation of an old Cesarean section scar, after uterine perforation during a therapeutic or elective abortion, and after subtotal or total hysterectomy [5]. In our case, conceptus probably penetrated a weak previous Cesarean scar and got implanted between the leaves of the broad ligament. Weakness in the previous Cesarean scar may have been caused by prolonged exposure to steroid medication by the patient for bronchial asthma. Studies have shown systemic steroids impairs wound healing [6,7].

Presentation of abdominal pregnancy can be varied from mild abdominal pain and discomfort to catastrophic internal haemorrhage, manifesting with acute abdomen and shock. Clinical suspicion is often missed when patient does not present with much symptoms. Ultrasound is the most effective method for diagnosing an abdominal pregnancy. MRI adds to diagnostic accuracy. In our case, we had to resort to MRI to confirm our diagnosis even after clinical and sonographic evaluation by experienced specialists.

Early diagnosis is essential and critical, because a catastrophic complication can occur due to separation of placenta at any stage. The rate of maternal mortality has been reported to be as high as 20% and the perinatal mortality rate ranges between 40% to 95% [8,9]. Hence surgical intervention is recommended as soon as an abdominal pregnancy is diagnosed. Situations in which the pregnancy is advanced and there is sufficient volume of amniotic fluid, there exists a reasonable possibility of a good foetal outcome. In rare instances, there may be justification for postponed surgery to allow for further foetal maturity and a better perinatal prognosis [5]. Sheela et al. [2] reported a case of broad ligament pregnancy with live birth of a baby following 10 days of conservative management to attend lung maturity. Kim et al. [10] has reported a case of abdominal pregnancy diagnosed at 18 weeks of gestation and managed expectantly till foetal lung maturity with delivery of a viable baby at 34 weeks. But Martin et al. [11] reported 15 cases of abdominal pregnancy with foetal death in all cases when diagnosed in advanced abdominal pregnancy and expectant management was done to attend better neonatal outcome. Abdominal pregnancy having live birth has been reported by many other authors [1,3,4]. Most of them were diagnosed late in pregnancy or diagnosis was made during laparotomy. Our case carried an

abdominal pregnancy to term but unfortunately got admitted to hospital after foetal demise. MRI picture showing a breach in lower segment of uterus and the laparotomy finding of fetus in the broad ligament with a rent in lower uterine segment communicating the foetal sac, confirmed our diagnosis of broad ligament pregnancy occurring through a previous Cesarean scar. On literature search we could not find any case report of broad ligament pregnancy caused through the previous Cesarean scar.

Broad ligament pregnancy occurring through a previous Cesarean scar is an extremely rare condition. In our case diagnosis of extrauterine pregnancy was made by imaging evaluation but final diagnosis of broad ligament pregnancy and a rent in lower segment of uterus was revealed only on laparotomy. Ultrasonography and MRI remain principal diagnostic tools to help the clinician in preoperative assessment, evaluation of the patient and planning the operative management in such challenging cases.

Conflict of interest

No potential conflict of interest relevant to this article was reported.

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