

A Rare Case of Maternal and Fetal Survival in an Intra-Abdominal Pregnancy

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Abstract

Intra-abdominal ectopic pregnancy is a rare form of ectopic pregnancy, comprising up to 1.4% of all ectopic pregnancy. Clinical symptoms of an uncomplicated pregnancy are non-specific. An advanced intra-abdominal pregnancy with good fetal and maternal outcome is an extraordinary occurrence, especially in developing countries. A 35-year-old patient, third gravida came to B.J. Medical College, Ahmedabad at 33 weeks 1 day gestation with report suggestive of extrauterine live intra-abdominal pregnancy. Patient had previous history of surgery for tubal ectopic pregnancy. Prenatal ultrasonography and Magnetic Resonance Imaging was done and patient was taken for explorative laparotomy. A healthy live baby weighing 1.8 kg was delivered.

Keywords: Intra-abdominal live pregnancy; Ultrasonography; Magnetic resonance imaging

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Introduction

Ectopic pregnancy is defined as implantation of conceptus outside of the endometrium [1,2]. Abdominal pregnancy is a rare form of ectopic pregnancy and defined as conceptus implanted in the abdominal cavity. The implantation can occur in the omentum, the large vessels or in solid organs [3]. An advanced abdominal pregnancy is described as the pregnancy beyond 20 weeks of gestation with signs of fetus that is either living or having lived in the mother's peritoneal cavity. Placenta is often attached to multiple sites including omentum, uterine cul-de-sac and pelvic side walls. There is a high maternity mortality rates of 0.5 to 1.8 percent and even higher perinatal mortality rate of 40 to 95% [4,5].

Ultrasonography was performed on mindray machine and Magnetic Resonance Imaging was performed on 1.5 Tesla Philips machine in all orthogonal planes with T1, T2 and VISTA sequences.

Case Report

A 35-year-old female, 4th gravida patient with 2 live births and history of left sides salpingectomy and oophorectomy for left sided tubal ectopic pregnancy came to OBGY department at Civil Hospital Ahmedabad with ultrasonography report of single live extrauterine intra-abdominal pregnancy of average maturity 31 weeks 5 days. Maternal Alpha fetoprotein was not elevated. Patient was investigated and then referred to Radiology

department for ultrasonography and Magnetic resonance imaging of abdomen for proper evaluation of fetus and placental attachments. Real time ultrasonography was reported as single live extrauterine intra-abdominal pregnancy of average maturity 31 weeks 5 days, oligohydraminos and placenta attachment at omentum. Foetal head was situated superolateral to fundus of uterus on right side (**Figure 1**). Foetal growth parameter and Color Doppler study of Umbilical artery and Foetal MCA were normal. Magnetic resonance imaging examination was done on 1.5 Tesla Philips in all three planes and was reported as single amniotic sac containing fetus in intra-abdominal location in right lumbar region and right iliac fossa extending up to pelvis. Head of fetus was lying just above the uterus, foetal spine faced posterolaterally, severe oligohydraminos and placenta seen inferiorly around foetal head (**Figures 2 and 3**). Placenta was not attached to Uterus or Urinary bladder. Uterus was seen separated from the amniotic sac in pelvis which was bulky, anteverted and empty endometrial cavity. Maternal urinary bladder and bowel loops were found normal. Elective explorative laparotomy was done the next day (**Figure 4**). Live mature baby of weight 1.8 kilograms was delivered safely. Foetus has no any congenital anomalies. Intraoperatively, placenta was adherents to many sites like omentum, pelvic side walls and retroperitoneal organs. Hence, placenta was left in situ for autolysis (**Figure 5**). Patient



Figure 1 Ultrasonography showing foetal head and placenta.



Figure 4 Explorative laparotomy showing fetus and placenta in abdominal cavity.

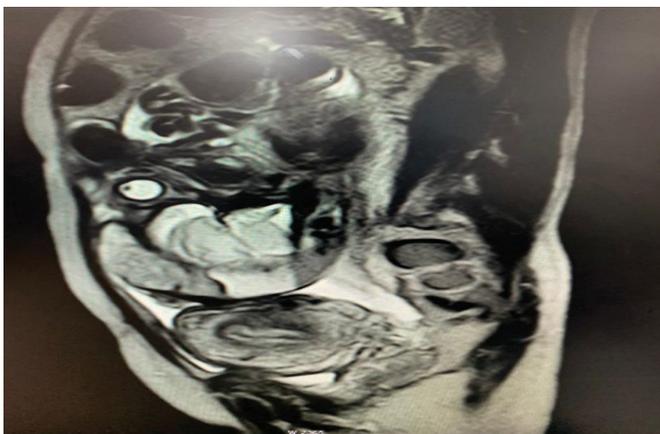


Figure 2 MRI T2 weighted image in saggital plane showing foetal head lying superior to uterus and empty endometrial cavity.

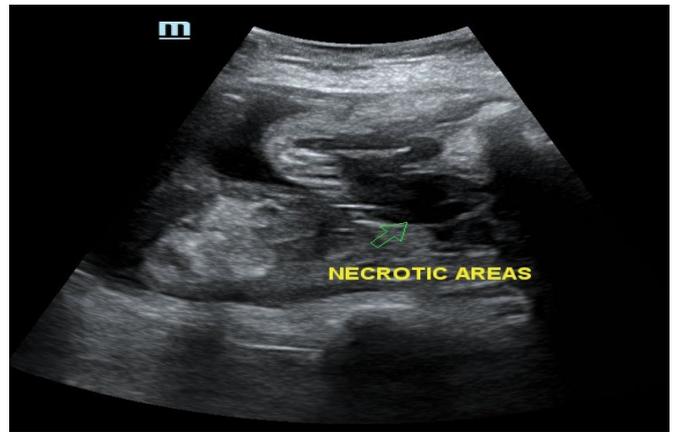


Figure 5 Ultrasonography showing placenta in process of autolysis.

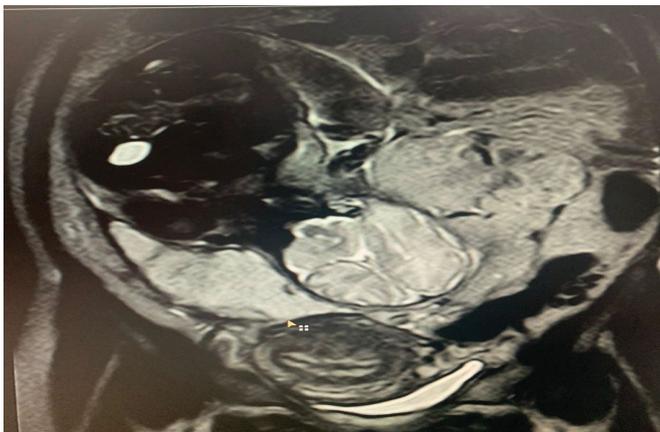


Figure 3 MRI T2 weighted image in saggital plane showing foetal head lying superior to uterus and empty endometrial cavity.



Figure 6 Post-operative MRI T2 saggital section showing placenta and amniotic sac fluid.

was discharged after one month with stable vitals. Follow up MRI was done after one month. At that time, size of placenta was not significantly changed but there was no post contrast

enhancement in the placenta. Mild fluid collection was there in amniotic sac (**Figure 6**). Patient was asymptomatic and baby was healthy on follow up clinical examinations (**Figure 7**).



Figure 7 Post-operative MRI T1 SPIR axial section showing placenta and amniotic sac fluid.

Discussion

Abdominal pregnancy requires high degree of suspicion for prompt diagnosis and appropriate management. Abdominal pregnancy accounts for 0.1 percent of all pregnancies and up to 1.4% of ectopic pregnancies. These pregnancies can go undetected until an advanced gestational age and may result in massive hemorrhage, disseminated intravascular coagulation, bowel obstruction and gastrointestinal and genitourinary fistula formation [6]. Risk factors associated with abdominal pregnancy include tubal damage, pelvic inflammatory disease, assisted reproductive techniques and multiparity. Ultrasonography is the most effective method for diagnosing intra-abdominal pregnancy. Magnetic Resonance Imaging confirms the findings and delineates anatomical relations between foetus and abdominal organs.

Causes of abdominal pregnancy are result of previous tubal pregnancy or rarely as primary peritoneal implantation. Studdiford established three criteria for diagnosing primary peritoneal pregnancy [7]:

1. Normal bilateral Fallopian tubes and ovaries.
2. Absence of uteroperitoneal fistula.
3. A pregnancy related exclusively to the peritoneal surface and early enough to eliminate the possibility of secondary implantation following a primary nidation in the tube.

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The mortality of abdominal pregnancy is 7.7 times higher than that of tubal pregnancy and 90 times greater than that of intrauterine pregnancy [8]. Associated morbidities include hemorrhage, disseminated intravascular coagulation, bowel obstruction and fistula formation due to bowel bones protruding through thin amniotic membranes. Foetal malformations such as torticollis, facial asymmetry, malformation of limbs, flattening of head and thorax may occur due to severe oligohydramnios [9]. Most common presenting symptoms are abdominal pain. Rarely, symptoms may occur due to attachment of placenta to the bowel or bladder. Ultrasonographic features denoting abdominal pregnancy are foetus seen outside the uterine cavity, absence of uterine wall between bladder and foetal parts, oligohydraminos, foetal parts located near maternal abdominal wall and abnormal location of placenta outside uterine cavity. It is also useful in assessing foetal congenital malformation commonly associated with abdominal pregnancy. The role of MRI is to locate placenta and identify its adherence to any vital organs, including the liver and spleen. This information proves vital in preoperative planning. Advantages of MRI over ultrasonography includes no hindrance to imaging by bone, gas filled structures and maternal obesity. There are various factors on which management of abdominal pregnancy depends like gestational age, placenta location and adherence of placenta. Surgical intervention is the only choice for termination of pregnancy. Total removal of placenta is preferable. However, in our case placenta was adherent to omentum and pelvic side walls. Hence, placenta was left in situ for autolysis. The placenta stops functioning after 4 months. Post-operative angiographic embolisation of feeder vessels is an option. In our case feeder vessels were bilateral uterine arteries and bilateral ovarian arteries. Systemic methotrexate given preoperatively is also an option for lysis of placental tissue.

Conclusion

This case was challenge for medical science to know why few of abdominal pregnancies are continued uncomplicated till 3rd trimester. Many factors may be there like placental attachment with high vascular supply, depth of invasion of placenta with omentum and peritoneum and sufficient fetoplacental blood flow. In this case there was normal umbilical artery Doppler and normal foetal growth parameters according to foetal gestational age. Maternal alpha fetoprotein level was also normal. These all may be good prognostic factors for foetal viability in Intra-abdominal foetal pregnancy.

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