

RADIOLOGICAL ASSESSMENT OF A LIVE ABDOMINAL PREGNANCY USING ULTRASOUND AND 3T MRI : A RARE CASE REPORT

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ABSTRACT

Abdominal pregnancy is extremely rare and easily missed in routine obstetric practice. We present a case of primigravida who presented to obstetric emergency with lower abdominal pain and slight bleeding per vagina. On ultrasound (US) and 3T MRI, 16 weeks primary abdominal pregnancy as per Studdiford's criteria was diagnosed. Due to high risk of rupture and other possible complications, pregnancy was terminated on medical ground without any postoperative complications.

Introduction

Abdominal pregnancy is an extremely rare with an incidence of 01 in 10000 pregnancies.¹ Abdominal pregnancy accounts for 1% of ectopic pregnancies.² In primary abdominal fertilisation and implantation both occur outside the uterus and tubes while in secondary type fertilisation occurs normally intrauterine or tubes followed by rupture leading to intra-abdominal implantation. It is associated with higher maternal mortality rate which may be as high as 20%, primarily due to massive haemorrhage from partial or complete separation of placenta.³ Therefore accurate localisation of the placenta is necessary to prevent any catastrophe during surgery. US is the initial investigation of choice in obstetrics but sometimes in case of suspicion, MRI can be done to confirm. We report a case of 16 weeks old live abdominal pregnancy. In this case, we diagnosed abdominal pregnancy on USG and 3T MRI done at 3T based on Studdiford's criteria with precise anatomical localisation fostering better surgical approach during termination of pregnancy.

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Case Report

A 20 years, primigravida was referred to obstetric emergency from a local clinic as a case of ectopic pregnancy. She presented with lower abdominal pain and slight bleeding per vagina with positive urine pregnancy test. Her pulse and blood pressure were within normal limits with no significant past medical or surgical history. Her recent haemoglobin was 10 gm/dl.

She was referred to Radiology Department for an US. On US we found an empty intrauterine gestational sac with irregular outline, possibly pseudo sac (Fig. 1a). Another gestational sac was noted which was extrauterine harbouring a live fetus (Fig. 1b) of average gestational age corresponding to 16 weeks 3 days on fetal biometry. Both ovaries were visualised separately with normal fallopian tubes and placenta appeared to be implanted over omentum and mesentery.

A 3 T MRI was performed to delineate better anatomy. After proper informed consent and precautions, fetal MRI done at 3T. Empty uterus noted with thickened endometrium due to pseudo sac on axial FIESTA

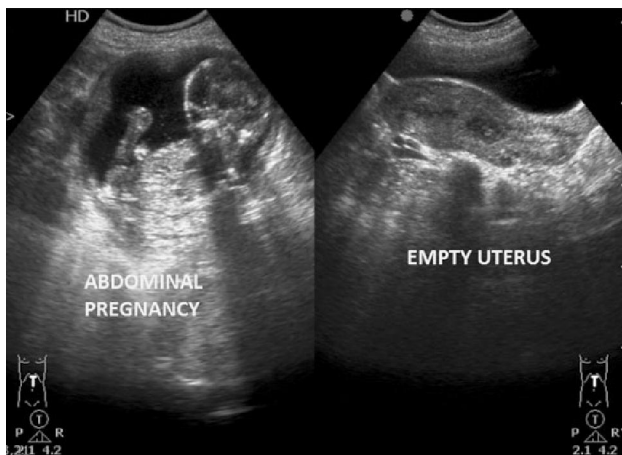


Figure 1a: USG image showing empty uterus and abdominal pregnancy

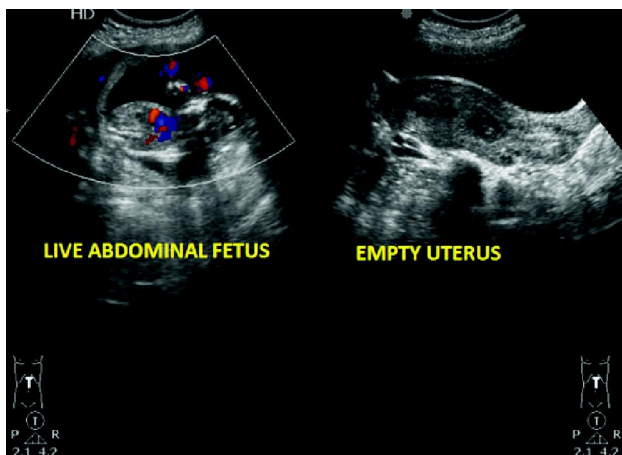


Figure 1b: USG image showing live abdominal pregnancy and empty uterus

sequence (Fig. 2a) and coronal T2 image (Fig. 2b). Sagittal T2 image showed left ovary (Fig. 2c) and right ovary (Fig. 2d) separately. Axial FIESTA image show a gestational sac with fetus lying anterior to the uterus and placenta was noted to be adhered to omentum and mesentery (Fig. 2e). Urinary bladder



Figure 2A: Axial FIESTA sequence showing empty uterus with thickened irregular endometrium possibly pseudo-sac

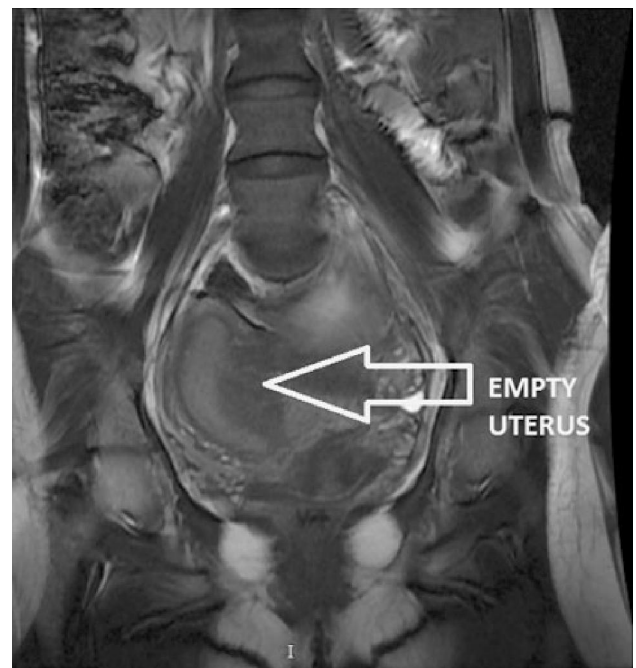


Figure 2b: Coronal T2 weighted sequence showing empty uterus

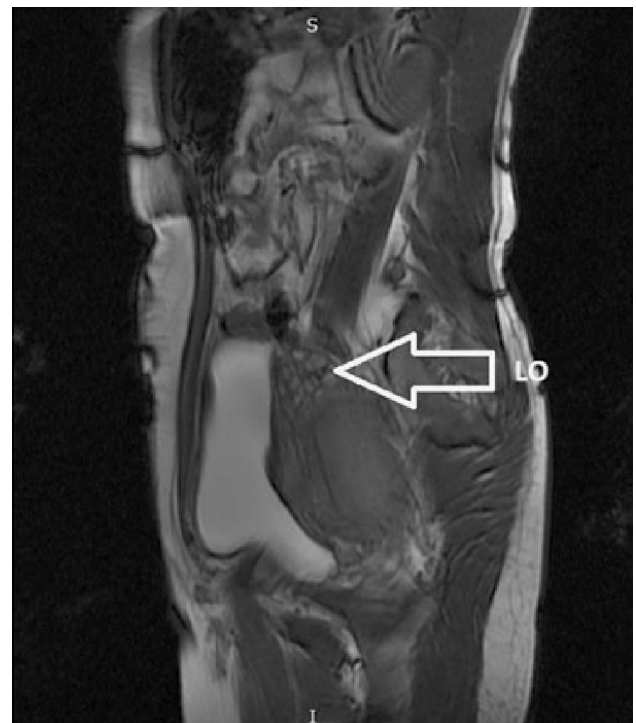


Figure 2c: Sagittal T2 weighted sequence showing separate left ovary

and adjoining muscles were separate. Due to high risk of rupture on continuing the pregnancy, after proper counselling she had medical termination of pregnancy. Surgical findings correlated



Figure 2d: Sagittal T2 weighted sequence showing separate right ovary

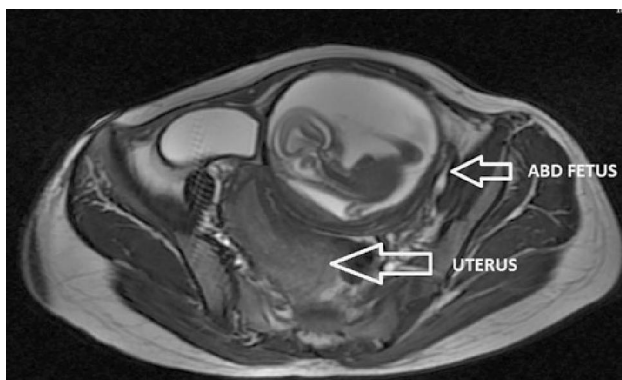


Figure 2e: Axial FIESTA sequence showing abdominal gestational sac with fetus and placenta implanted over omentum and mesentery

with those of USG and MR with a postoperative specimen shown in (Fig. 3). This led to early diagnosis and management without any postoperative complication.

Discussion

Diagnosis of intraabdominal pregnancy is of high significance due to high risk of maternal mortality rate from massive haemorrhage. In this case we



Figure 3: Post operative surgical specimen showing fetus with gestational sac

diagnosed primary abdominal pregnancy using US and 3T MRI according to Studdiford's criteria which include:

1. Normal fallopian tubes and ovaries
2. No uteroplacental fistula
3. Attachment of the placenta exclusively to the peritoneal surfaces in early pregnancy to exclude any secondary implantation.

In recent years there has been an increase incidence of ectopic pregnancy and primary reasons are use of oral contraceptives, intrauterine devices, history of pelvic inflammatory diseases, sexually transmitted diseases, etc. In our patient there was no such contributing cause for ectopic pregnancy. Ultrasound is the initial investigation in obstetrics which can diagnose abdominal pregnancy but for better delineation of anatomy, use of 3T MRI did help in precise localization and better surgical approach with better surgical outcome.

Conclusion

Ultrasound and 3T MRI findings are complementary to each other in diagnosing primary abdominal pregnancy according to Studdiford's criteria and help

in precise localization and better surgical approach with better surgical outcome.

Competing interests

The authors claim that they have no personal or financial interest that may have inappropriately influenced them in writing this article.

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