

Successful Management of Secondary Abdominal Pregnancy-A Case Report

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Abstract:

Abdominal pregnancy is a rare type of ectopic pregnancy, where implantation occurs in the peritoneal cavity, external to the uterine cavity and fallopian tubes. With an incidence of around 1% of ectopic pregnancies, they may rarely reach advanced gestation. In order to prevent torrential hemorrhage, abdominal pregnancies must be detected and terminated in early gestation. We present a case of a primi-gravida with 4 months amenorrhea, who presented with lower abdomen pain. Ultrasound revealed an empty uterine cavity, with a live fetus of 15 weeks gestation in the pelvis and right adnexia. She was managed successfully, with the fetus being delivered via laparotomy. This case report highlights the importance of awareness, high degree of clinical suspicion and acuity, needed to diagnose abdominal pregnancy, and avoid maternal mortality and morbidity.

Keyword: Abdominal pregnancy, Adnexal mass, Ectopic Pregnancy, Ultrasound imaging

Date of Submission: 20-05-2020

Date of Acceptance: 06-06-2020

I. Introduction

Ectopic pregnancy is defined as pregnancy where the blastocyst implants at a site other than the uterine endometrium. Abdominal pregnancy is a type of ectopic pregnancy, where implantation occurs in the peritoneal cavity, external to the uterine cavity and fallopian tubes. It has a reported incidence of 1 per 10,000 births¹, accounting for 1.4 percent of ectopic pregnancies¹⁻³. The various sites of implantation include the omentum, pelvic side wall, broad ligament, posterior cul-de-sac, abdominal organs (like liver, bowel, and spleen), large blood vessels, diaphragm and the uterine serosa^{2,4-12}.

There are two broad types of abdominal pregnancy – primary and secondary. Primary abdominal pregnancy must meet the Studdiford criteria-Normal bilateral fallopian tubes and ovaries, absence of a uteroplacental fistula and attachment exclusively to a peritoneal surface, early enough in gestation, to eliminate the likelihood of secondary implantation from primary site¹³. Secondary abdominal pregnancies, which are more common, refer to those that originate in the tubes or ovaries, and subsequently reimplant in the peritoneum¹⁴. Fisch et al reported abdominal pregnancy after in vitro fertilization, in a patient with previous bilateral salpingectomy, indicating a third, iatrogenic mechanism³.

We present a case of a primigravida, who presented with 4 months of amenorrhea, and pain in her lower abdomen.

II. Case Report

A 26-year-old female, presented with 4 months of amenorrhea, and pain in her lower abdomen since one week. The patient had been married for 9 years, and had a history of regular menstrual periods. She had not conceived earlier. She denied any bleeding per vagina, dizziness or fever. On examination, the patient was found to be hemodynamically stable, and had mild pallor. Her hemoglobin was 8gm/dl. Abdominal examination revealed a distended abdomen, with fullness predominantly on the right side. Tenderness was noted in the lower abdomen and the right iliac fossa. Per speculum examination showed a healthy cervix, with no bleeding, or discharge per vaginam. Per vaginal examination showed an anteverted, soft uterus, with restricted mobility. There was fullness in the posterior and right fornix. Left fornix was free.

Transabdominal ultrasound revealed an empty uterine cavity and a live fetus of 15 weeks, within a gestational sac in the pelvis and right adnexia. The amniotic sac had no surrounding myometrium and was displacing the uterus to the left side. The uterus was bulky with thick endometrium. Minimal free fluid was noted in the pelvis with internal echoes. Doppler confirmed placental and umbilical cord color-flow pattern. Active fetal movements were recorded via real time Cine images. T2 weighted multiplanar magnetic resonance imaging of the pelvis confirmed the ultrasonography findings. There was no evidence of myometrium surrounding the gestational sac. Commenting on the tubes was difficult.

The patient underwent laparotomy, via a subumbilical transverse incision, which revealed a gestational sac with fetus, in the pelvis. Feeding blood vessels were arising from the broad ligament. Placenta was adherent to the anterior peritoneal surface. Large volumes of blood clots were removed. There was no evidence of adhesions to bowel loops. Right tube was edematous. The uterus and ovaries were intact and normal in appearance. The placenta was dissected from the adjacent structures. Hemostasis was secured with the help of stitches, cauterization and topical hemostatics. No bleeding was noted from the implantation site. Intraperitoneal drains were inserted, and the abdomen was closed in layers. Post operative period was uneventful, and the patient was transfused with one unit of packed cells to restore hemoglobin levels. She had an uneventful hospital stay and was henceforth discharged on the 5th post operative day. The patient was reviewed six weeks later, and was noted to be recovering well.

III. Discussion

Risk factors for abdominal pregnancy are similar to those of ectopic pregnancy, and include pelvic inflammatory disease, endometriosis, tubal damage, assisted reproductive techniques, and multiparity^{8, 15}

Due to their varying location in the abdomen, abdominal pregnancies exhibit a variation in the clinical picture. Severe lower abdominal pain is one of the most consistent findings³⁰. Sometimes, undetected abdominal pregnancies may reach term gestation. In them, painful fetal movement, and unusual fetal lie may be seen. Vomiting and nausea may occur if the pregnancy implants on the bowels. Incidence of vaginal bleeding is less than that seen in tubal ectopics¹⁶. Severe hemorrhage due to placental separation, or rupture of maternal blood vessels or viscera, may lead to acute abdomen and shock^{1,3,6,7,16}.

To diagnose abdominal pregnancy, a high index of suspicion is critical. Transvaginal ultrasound remains the first-line tool for diagnosing abdominal pregnancy³¹. Classically, the absence of myometrial tissue between the maternal bladder and the pregnancy, is seen on ultrasound⁴. Non-contrast magnetic resonance imaging (MRI T2-WI) is a sensitive, specific and accurate method for diagnosing ectopic pregnancy and surgical planning²⁹. Other findings include an empty uterus, poorly defined placenta, oligohydramnios, and abnormal fetal lie. Sometimes, maternal serum alpha-fetoprotein may be raised¹⁷. Abnormal trend in serial human chorionic gonadotropin (hCG) values as seen in ectopic pregnancies, is not seen in abdominal pregnancies. The clinical picture mimics ectopic pregnancies, pregnancy in rudimentary uterine horn, placental abruption and uterine rupture. Other conditions that cause acute abdomen, such as appendicitis and ovarian torsion must be ruled out.

Current concepts on management of abdominal pregnancy support immediate active surgical intervention, with termination of pregnancy, if detected before 24 weeks of gestation³⁴. If detected early, laparoscopy is preferred for first trimester management of abdominal ectopics^{2, 18}. Preoperative selective arterial embolisation can reduce hemorrhage during placental removal^{16,19}. Laparotomy is preferred over laparoscopy when the placenta is implanted on major vessels, to reduce risk of hemorrhage. Use of methotrexate here is not as successful as in tubal ectopics, probably due to the more advanced gestational age at diagnosis²⁰. Expectant management, aiming to gain fetal maturity, needs close maternal surveillance, and has succeeded in very few cases²¹. The real dilemma lies in placental management – whether to remove it or leave it in situ. Placental removal can cause torrential hemorrhage. When it cannot be separated easily, the placenta is left in situ after ligating the umbilical cord. Arterial embolisation or methotrexate may be used to hasten placental involution, or patient can be followed without any further intervention^{4, 16, 19, 22}. Leaving the placenta may lead to abscess formation, sepsis and delayed hemorrhage²³. Sometimes, both the fetus and placenta are left in situ, and the gestational sac is allowed to involute slowly. However, long term consequences due to inflammatory changes induced by the necrotic placenta include abscess formation, delayed hemorrhage, sepsis, fistula formation, intestinal or ureteral obstruction and wound dehiscence^{16, 24, 25}. Methotrexate can be used when the placenta is retained, which causes rapid destruction of the placenta²⁵. Sometimes, placenta is removed, post ligation of its blood supply^{4,8,16}. Pre surgical MRI to localize the placenta, and visualize its attachment, can help with this. Since the normal uterine contraction mechanism to stem blood loss is absent, placental removal in abdominal pregnancy may cause massive bleeding. Transfusions, pelvic packing, uterine artery embolisation, and occlusive catheters may be used to control hemorrhage.

Perinatal mortality (85-95%)³² is higher, compared to maternal mortality(0.5-18%)²⁶. Fetal deformations were reported in 20-90% of the cases, with exposed areas like the head and extremities showing maximum deformities³³. Rarely, the dead fetus in an unrecognized abdominal pregnancy, may get calcified. The condition, known as lithopedion, may be incidentally discovered on x-ray of the abdomen²⁸.

IV. Conclusion

A high degree of suspicion, combined with vigilance, clinical correlation and experience, are integral in diagnosing and managing a case of abdominal pregnancy. Ultrasonography is the diagnostic procedure of

choice, and MRI can be used to clearly locate the pregnancy and placental attachments. Prompt surgical intervention with careful evaluation of the placenta, can lead to favourable maternal outcome.

V. Disclosure

The authors declared no conflicts of interest

Figure 1-3: MRI T2 WI showing abdominal pregnancy

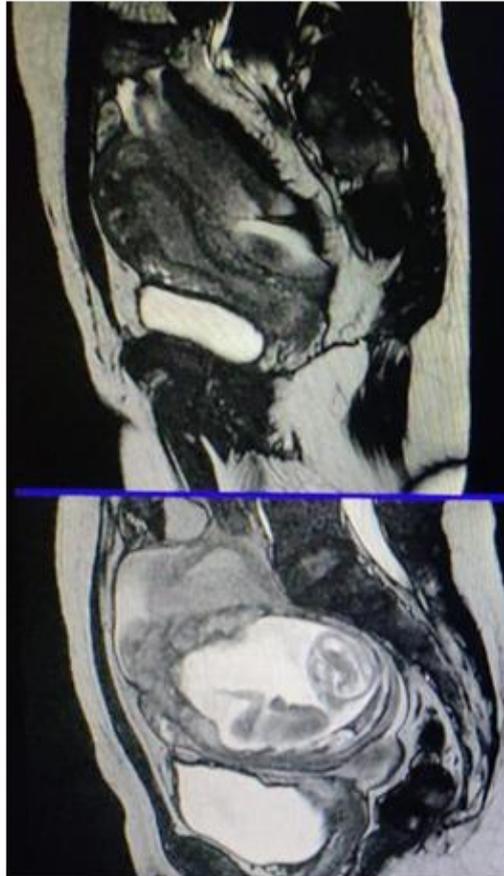


Figure 4: Intra-operative photograph showing fetus



Figure 5: Fetus with placenta



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Ravi Jahagirdar, et. al. “Successful Management of Secondary Abdominal Pregnancy-A Case Report.” *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 19(6), 2020, pp. 10-14.