

## A CASE OF TERM ABDOMINAL PREGNANCY: A DIAGNOSTIC ENIGMA

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### Abstract

Abdominal pregnancy is a rare, potentially fatal condition characterized as pregnancy in the peritoneal cavity without involvement of the tubal, ovarian, or intra-ligamentary systems. It can be either a primary or secondary abdominal pregnancy. We present a case of a 25-year-old female patient G3P2A0L2 with full-term abdominal pregnancy admitted to our trauma center in emergency with complaints of abdominal pain for 4 hours. She was diagnosed and managed successfully at our institution. On diagnostic tapping, hemoperitoneum was present, and the patient was shifted to emergency laparotomy. Postoperative recovery was uneventful. This patient was diagnosed to be pregnant at 13 weeks of gestation and subsequently confirmed on USG as an intrauterine gestation at a private hospital. This case study demonstrates the value of clinical suspicion and awareness for such a potentially fatal illness in preventing maternal morbidity and mortality.

## INTRODUCTION

Abdominal pregnancy is a rare life-threatening condition. Pregnancy anywhere within the peritoneal cavity is referred to as an abdominal pregnancy but not in the tubal, ovarian, or broad ligament regions.<sup>[1]</sup> The mesosalpinx and omentum are the next most typical locations for abdominal pregnancy after the pouch of Douglas (POD). However, reports of implantation on the spleen, liver, and appendix have also been made.<sup>[2]</sup>

Abdominal pregnancy is thought to represent around 1–1.5% of all ectopic pregnancies with an estimated incidence of 1:8000–10 000 pregnancies.

The likelihood of significant haemorrhage from a partially or completely separated placenta at any stage of pregnancy makes it a serious and potentially fatal condition. Maternal mortality is around 7.7 times that of other locations of ectopic pregnancy and 90 times that of intrauterine pregnancy.<sup>[3]</sup> According to the literature available worldwide, maternal mortality is estimated to be 2–30%, whereas perinatal mortality in those undiagnosed is 40–95%.<sup>[4]</sup>

Abdominal pregnancy can be primary or secondary. Primary abdominal pregnancy occurs when there is direct implantation of the conceptus into the abdominal cavity. It is the less common type than secondary; secondary abdominal pregnancy is due to fimbrial abortion, tubal rupture, ruptured uterus, or a ruptured uterine rudimentary horn. It is the more common type.<sup>[5]</sup> We present a case of full-term pregnancy admitted to our trauma center as an emergency.

A 25-year-old female patient G3P2A0L2 with 9 months of amenorrhea presented to Shree Krishna Hospital with complaints of abdominal pain for 4 hours. The patient was referred from the local Community Health Center in view of non-progression of labor; she was date-wise 37 weeks pregnant with two previous normal, uneventful, full-term deliveries.

She was diagnosed to be pregnant at 4 months of amenorrhoea. A urine pregnancy test performed was positive followed by a USG scan at a private hospital, which revealed a single live intrauterine fetus of 13 weeks of pregnancy. There was no history of prior admissions during pregnancy.

On admission, the patient was conscious, cooperative, and well oriented to time, place, and person. The temperature was normal; pulse was 148 beats/min, low volume, and regular in the right radial artery; and BP was 130/70 mm/hg in the right brachial artery in the supine position and RR-30/min. Pallor was noted, and pedal edema was present. No other significant signs or symptoms were present. On examination, respiratory and cardio vascular systems were found to be normal. The abdomen examination showed a distended abdomen which was tense with a tympanic note on the upper abdomen; fetal parts were palpated with difficulty. Fetal heart sounds on sonography was absent. Uterine contractions could not be appreciated. Vaginal examination revealed a 5–6 cm dilated cervix with 60% effacement. The presenting part was vertex, with membrane flat on the head and station very high, and the head could be pushed back.

Ultra sonography showed free fluid in the abdominal cavity. On diagnostic tapping, hemoperitoneum was present, and the patient was shifted to emergency laparotomy with an initial diagnosis of a ruptured uterus.

#### **Intra-operative findings**

Pfannenstiel incision was kept; the abdomen opened layer-wise after separating muscles. About 150 ccs of blood clots were present. Clots were removed. The baby was found in the left abdominal cavity en-sac, the membrane was ruptured, and the baby was extracted. Placenta was found to be implanted on the posterior wall of the uterus with signs of separation. The partially separated placenta was removed. The uterus was exteriorized and examined. All the walls of the uterus were intact. No signs of rupture were found.

P/V was done, and the vaginal cavity was found to be continuous with the abdominal cavity. The posterior fornix was torn, and continuous bleeding from the posterior wall of the uterus was present. The patient developed hypotension, and the decision for an obstetric hysterectomy was made. Obstetrics hysterectomy was done with 1 cycle of massive blood transfusion.

#### **On examination of a specimen of the uterus**

A vertical incision on the anterior wall of the uterus was made. The endometrial cavity could not be identified properly. the serous coat over the posterior surface of the uterus was absent (Figure 3; site of placental attachment), and a gap was present in the serous covering at the lower part of the uterus and cervix [Figure 4]. This gap, which was continuous with the abdominal cavity and vagina, was occupied by the fetal head intraoperatively; the rest of the body was in the peritoneal cavity.

There was no connection between the cervix and uterine cavity.

B/L tubes were examined, and no signs of tubal abortion were present.

**Postoperative recovery:** Postoperatively, the patient was shifted to the ICU from the operation theater. She was extubated on day 3. Postoperative recovery was

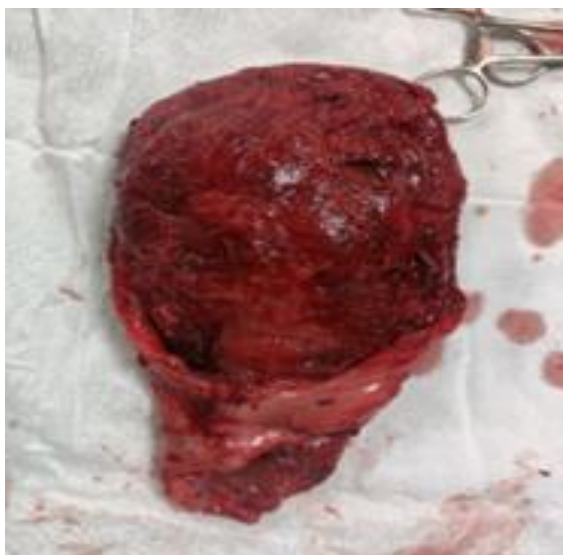
uneventful. The patient developed hypertension in the postpartum period and was started on anti-hypertensive medications. She was discharged on day 10.



**Figure 1: Placenta attached on the uterus**



**Figure 2: Anterior wall of the uterus**



**Figure 3: Posterior Wall of the uterus**



**Figure 4: Torn Post. Serosal Surface**

## DISCUSSION

The first abdominal pregnancy was reported in 1708 as an autopsy finding, and many cases of abdominal pregnancy have been reported worldwide since.<sup>[6]</sup> Abdominal pregnancies are either primary or secondary.<sup>[7]</sup> For the diagnosis of primary abdominal pregnancy, Studdiford's criteria need to be fulfilled. These include (a) normal bilateral fallopian tubes and ovaries; (b) the absence of utero-peritoneal fistula; and (c) pregnancy-related exclusively to the peritoneal surface and early enough to eliminate the possibility of secondary implantation following a primary location in the tube.

Patients can present with abdominal pain, breathlessness, and many other variable symptoms. In our case, the patient had four USG scans that were suggestive of intrauterine pregnancy, so the possibility of abdominal pregnancy was not

considered initially. The diagnosis can be confused with a ruptured uterus because the presentation is similar. In the present case, diagnostic tapping yielded hemoperitoneum, creating suspicion of a ruptured uterus. However, after gaining entry into the peritoneal cavity, a diagnosis of abdominal pregnancy was made, most probably secondary to tubal abortion. The dead fetus was found in the peritoneal cavity with its head in between the serous coat and myometrium of the posterior aspect of the uterus. The placenta was implanted over the posterior uterine wall. Based on the interoperative findings, the assumption was made that the fetal head might have torn the posterior fornix from where it was felt during the P/V examination. Surprisingly no continuous cavity could be found between the cervix and the uterus.<sup>[8]</sup>

Abdominal pregnancy often leads to early spontaneous separation of the placenta from the implantation site, causing abdominal bleeding. In rare cases, the pregnancy can develop to late stages, like in our case.

The most important issue in managing advanced abdominal pregnancy is the placental management. The massive haemorrhage that often occurs with surgery is related to the lack of constriction of the blood vessels after placental separation. The parietal peritoneum, mesentery, and bowel are the usual sites where the placenta is attached firmly, Bleeding usually does not occur if it is left untouched. In such cases the umbilical cord should be ligated close to the placenta, excess membranes trimmed off, and the abdomen closed with drainage. Sometimes, the placenta may separate spontaneously, simulating an abruption, but the conditions in which hemorrhage becomes uncontrollable are more likely to arise from failed attempts at placental removal. Placental separation is not always straightforward, and it may fail in up to 40% of cases. The hemorrhage from the placental separation may be torrential, and rapid surgical action is necessary to salvage the woman's life. Local techniques can be used to stop bleeding in such cases. This may include compression of the bleeding site, ligating the vascular pedicles, lavage with cold saline, and local and/or systemic coagulation-promoting agents (tranexamic acid, plasminogen derivatives, absorbable gelatin sponge, etc.). Repair of placental lacerations may need to be performed. The removal of the organ to which the placenta is adherent (hysterectomy and/or salpingo-oophorectomy or resection of the bowel and/or bladder) may be justified to control the hemorrhage.<sup>[9]</sup> Abdominal packing has been used effectively for uncontrolled hemorrhage following cesarean hysterectomy for the morbidly adherent placenta, massive hemorrhage during gynaecological cancer surgery, and postpartum hemorrhage. Alternative options for placental management include methotrexate therapy and uterine artery embolization. Arterial embolization performed preoperatively minimizes blood loss. Placental

vascular embolization facilitates the resorption of a placenta that is left in situ.

Advanced abdominal pregnancy with preeclampsia is reported rarely. This may be due to underreporting or due to the rare nature of advanced abdominal pregnancy by itself. The presence of placental tissue in the maternal body, and the poor placentation resulting from inappropriate uterine spiral artery invasion may be the primary pathology. In our case, the patient developed hypertension in the postpartum period and was started on antihypertensive medications.

There are some other cases of abdominal pregnancy reported at different gestational ages.

Nemat Abdul Rahman Abdul Jabbar et al. published two cases of early abdominal pregnancy, one treated by laparotomy and another by laparoscopy in the United Arab Emirates. A 37-year-old female with G3P2A0L2 and 14 weeks of pregnancy presented to the trauma center with complaints of abdominal pain, vomiting, and distention. On USG, the pouch of Douglas showed an empty uterus and a viable 14-week pregnancy. The peritoneal cavity contained a significant amount of free fluid. A viable pregnancy in the pouch of Douglas and around 3 liters of hemoperitoneum were successfully removed during surgery.

Another case of abdominal pregnancy has been recorded. A 36-year-old woman, para 3 with four miscarriages, went to the trauma center with a 7-week history of amenorrhea, mild bleeding, and abdominal pain, as well as an HCG level of 14444 mIU/mL. She was hospitalized as a case of pregnancy at an unknown place with normal TVS. The patient's hemodynamic condition deteriorated. An urgent diagnostic laparoscopy revealed a 150-mL hemoperitoneum, a bulky uterus, and healthy right and left adnexa. A 3–4 cm patch of bleeding tissue (conception products) was excised from the pouch of Douglas.<sup>[8]</sup>

Nkusu ND et al. reviewed 163 cases of advanced abdominal pregnancy after 20 weeks of gestation from 1946 to 2008; among them 45% of cases were diagnosed preoperatively. Fetal/perinatal mortality was 72%, and pressure deformities were common among survivors. Maternal postoperative complications like hemorrhage and infection were noted in half of the patients, with transfusion of blood products used in almost all patients. Maternal mortality was noted in 12% of cases.<sup>[9]</sup>

A surviving fetus from an abdominal pregnancy is extremely rare. Tesfaye Kebede Legesse et al. published a case of a 26-year-old Gravida III Abortion II female with 9 months of amenorrhea who visited a hospital with severe abdominal pain with each movement of fetus. Early USG showed an intrauterine pregnancy, but when USG was

performed by a senior consultant, it was suggestive of a fetus in the abdominal cavity and a separate enlarged uterus with the placenta pushing the spleen in the thoracic cavity. The patient was taken for emergency laparotomy, and she delivered a live fetus. The placenta was evacuated manually, including the right ovary, because it was adherent to it. The blood supply was from the tubal branch of the uterine artery, which was carefully ligated before evacuation of the placenta.<sup>[10]</sup>

## CONCLUSION

Abdominal pregnancy is a rare condition, and a high index of suspicion is the key to its effective management. In situations of clinical uncertainty and suspicious findings, experience, attentiveness, clinical correlation, and a strong index of suspicion are crucial. The availability of a multidisciplinary surgical team and proper operative techniques with timely availability of blood products and ICU facility can reduce mortality.

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