

## Secondary Abdominal Pregnancy: Tale of a Catastrophe

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### Abstract

**Introduction:** Abdominal pregnancy is an extremely rare event. It can be primary or secondary, while secondary abdominal pregnancy ranges from 1 per 2200 to 1 per 10,200 pregnancies<sup>1</sup>. Secondary abdominal pregnancy results from tubal abortion, tubal rupture or uterine rupture leading to potential life-threatening conditions.

**Case report:** A 35years old lady, G2P0+1 presented with 20 weeks of amenorrhea, apparently stable hemodynamic status, severe anemia, abdominal distension and oliguria for 7 days. Abdominal palpation revealed a mass (measuring about 20x15cm) in right lower quadrant and on per vaginal examination, cervix was soft, os closed, right fornix was full and tender, bleeding absent. Secondary abdominal pregnancy was confirmed following laparotomy, a 15X12 cm sized mass surrounded by omentum and loops of small bowel found attached behind the posterior surface of uterus and right broad ligament. Removal of the whole sac including placenta was successful with least injury to the surrounding structures.

**Conclusion:** In spite of diagnostic dilemma and misleading ultrasonography, laparotomy or laparoscopy should be the way to confirm the diagnosis. Saving the surrounding structures and removal of whole placental tissue is the best reward for the surgeon and also the maternal outcome.

**Keywords:** Abdominal pregnancy, Laparotomy, Laparoscopy

### Introduction

Abdominal pregnancy is an extremely rare event and is classified as either primary or secondary, with the latter being found 1 per 2,200 to 1 per 10,200 pregnancies<sup>1</sup>. Secondary abdominal pregnancies usually develop as a result of tubal abortion, tubal rupture or uterine rupture with intra-abdominal implantation<sup>2</sup>. It still remains a diagnostic characterized by the following criteria: 1) normal tubes and ovaries, 2) absence of uteroplacental fistula, 3) attachment exclusively to a peritoneal surface early enough in gestation to eliminate the likelihood of secondary implantation<sup>3</sup>. Mortalities in these cases rise up to 20 % because of the risk of massive hemorrhage from partial or total placental separation and therapeutic challenge for every obstetrician. Primary peritoneal pregnancy was first described by Studdiford as a rare form of ectopic pregnancy.

The placenta can be attached to the uterine wall, bowel, mesentery, liver, spleen, bladder and ligaments. It can be detached at any time during pregnancy leading to severe blood loss<sup>4</sup>.

Diagnosis and treatment of these unusual ectopic gestations

have been always challenging, and they usually include major operative procedures that affect future fertility. Ultrasound is the first line diagnostic imaging method, although, if available, magnetic resonance imaging (MRI) would be superior, especially in cases when the delineation of anatomic relationships may alter the surgical approach<sup>5</sup>. Treatment with the least invasive method, either by minimal access techniques, on-invasive radiological procedures or medical treatment should be encouraged<sup>6</sup>.

### Case report

A 35-year-old lady, 2nd gravida with H/O one mid trimester abortion, was admitted in the Department of Obstetrics and Gynecology of Khulna Medical College Hospital, Khulna, complaining of amenorrhea for 20 weeks, lower abdominal pain and moderate abdominal distension without any significant per-vaginal bleeding. She was found severely anemic with apparently stable hemodynamic status, pelvic examination showed tenderness in right fornix. Routine investigations and basic metabolic panel normal parameters except Hb% 8 and S. creatinine 1.4. USG of whole abdomen

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revealed, an empty and just bulky uterus, 164X115 mm soft tissue mass (placenta + soft tissue) & a dead fetus in lower abdomen with gross local adhesions. At least 2000-2500ml thick collection (blood) seen surrounding the mass & in whole abdomen. Also, bilateral pleural effusion R100-120ml, L 50-60ml). Laparotomy showed huge clotted blood in abdominal cavity, a 15X12 cm sized mass surrounded by omentum and loops of small bowel found attached behind the posterior surface of uterus and right broad ligament. A dead fetus (weighing about 250gm) with fetal membranes were completely extracted with minimal surrounding tissue injury. Uterus was just bulky, both fallopian tubes and ovaries were congested and inflamed. Due to hemorrhage from right sided adnexa, salpingectomy was done on right side. She needed two hemodialysis sessions for acute renal failure. Within two weeks she recovered from all the ailments and discharged with a good condition.

## Discussion

Abdominal pregnancy is a rare obstetric complication with high maternal and perinatal mortality. Ultrasound, magnetic resonance imaging (MRI), computed tomography (CT) scan and laparotomy can help in differentiating between primary and secondary abdominal pregnancy<sup>7</sup>. As early rupture of tubal ectopic pregnancy is the usual antecedent of a secondary abdominal pregnancy, a suggestive history can usually be obtained. These include spotting or irregular bleeding along with abdominal pain, nausea, vomiting, flatulence, constipation, diarrhea and abdominal pain, all in varying degrees. Fetal malpresentation, extreme anterior displacement of the cervix, failure of spontaneous onset of labor and artificial induction of labor are common complications. Appreciable cervical effacement is also unusual in these patients. Small fetal parts may be palpated through the vaginal fornices and identified clearly outside the uterus<sup>8</sup>.

The patient with an abdominal pregnancy typically presents with constant abdominal pain; our patient developed lower abdominal pain and brisk per vaginal bleeding, which did not alarm her about the severity of the condition. About 50% of diagnoses are missed on ultrasound<sup>9</sup> but MRI and CT are both excellent diagnostic tools to diagnose secondary abdominal pregnancy<sup>7</sup>. In our case, her previous ultrasonography was very misleading, resulting in her worsening condition in spite of her typical signs and symptoms of constant abdominal pain, progressive anemia and abdominal distension. CT scan or MRI could have diagnosed this patient preoperatively resulted in less blood loss per operatively and hence reduced maternal morbidity but those investigations could not be done.

During laparotomy the surgeon must make a decision concerning the fate of the placenta. Postoperative maternal morbidity will probably be lessened by total removal of the placenta if this is technically feasible and this should be possible using proper pre-operative treatment modalities such as embolization or systemic methotrexate. If vascular attachment involves major vessels or vital structures, the organ should be left undisturbed<sup>10</sup>. Due to fetal demise, there was placental degeneration which facilitated complete placental separation, as a result our surgery outcome was

comparatively satisfactory.

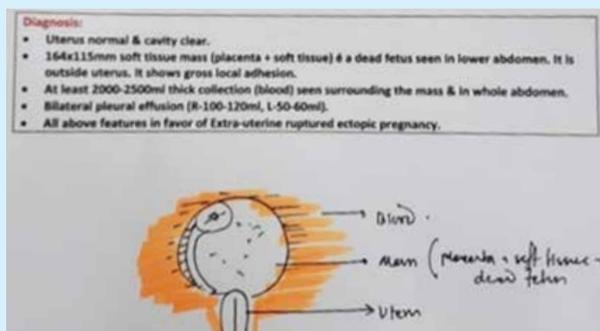
Successful control of hemorrhage after removal of the fetus and placenta at laparotomy depends upon the various treatment protocols used pre and intra-operatively. Even pre-operative embolization of vessels supplying the placental bed has been tried by some surgeons, thus decreasing intra-operative blood loss associated with removal of the fetus and placenta<sup>11</sup>.

Retention of the placenta in situ is not without its attendant risks and postoperative morbidity can be substantial. Secondary hemorrhage, abscess formation, paralytic ileus, bowel obstruction, pre-eclampsia and eclampsia have all been reported as complications of leaving the placenta in situ<sup>12</sup>. Any modality which can offer a reduction of intra-operative vascularity and hence blood loss would be a boon for these patients. Where the facility for embolization is not easily accessible, injectable methotrexate is an easy, cheap and relatively safer option.

Resorption of a placenta left in situ has been reported to be a slow process and can be followed either by sonography, MRI or CT scan. Visualization of a hyperechoic placental mass has been reported as late as five years after delivery<sup>13</sup>. Although no consensus regarding the treatment of the placenta in abdominal pregnancy has been established, most authors advocate leaving the placenta in situ unless the surgeon can be confidently assured that the entire blood supply to the placental bed can be surgically ligated without loss of excessive amounts of blood, and the need for extensive blood replacement therapy. In our case the whole placenta was successfully removed and the area of attachment was not threatening to bleed, only right sided salphingo-oophorectomy was adequate.

The treatment options for patients with abdominal pregnancies are dependent on various factors and the availability of resources. In our case the diagnostic dilemma could be avoided by expert sonography. Other pre-operative considerations include the insertion of ureteric catheters, bowel preparation, assurance of sufficient blood products and the availability of a multidisciplinary surgical team. Should such resources not be available, elective transfer of a woman with a known advanced extra-uterine pregnancy to a tertiary care facility is appropriate.

**Fig 1: USG report of whole abdomen, 12 hours prior to laparotomy**



**Fig 2: Per operative findings, just bulky uterus with a small subserous fibroid**



**Fig 3: Per operative findings, congested right fallopian tube and leaf of broad ligament.**



## Conclusion

Expert sonography, timed referral to tertiary institution, availability of multidisciplinary surgical team and efficient surgical skill in managing abdominal pregnancy can reduce maternal morbidity and mortality. During laparotomy the surgeon is the one to make a decision regarding the fate

of the placenta. Postoperative maternal morbidity could be reduced, if complete removal of placenta is possible. If there is more firm attachment with vital structures, then it should be left behind and postoperative methotrexate may be administered, although there are grave complications. There is no definitive consensus regarding the management of the placental tissue, so each case should be individualized.

## Consent

Written informed consent was obtained from the patient for publication of this case report. A copy of the written consent is available for review by the editor.

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