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## Case Report

# Primary abdominal pregnancy causing diagnostic dilemma: a case report

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### ABSTRACT

The aim of the study was to present a case of primary abdominal pregnancy, a rare entity and highlighting the diagnostic dilemma and importance of surgical management. Primigravida with an amenorrhea of 35 days presented to the casualty with acute abdomen, with faintly positive UPT test and USG pelvis was suggestive of ill-defined hypoechoic mass lesion in right sided adnexal region abutting right ovary. Intra-operatively, blood clots with products of conception were found adherent to anterior layer of right broad ligament. Uterus, both fallopian tubes and both ovaries found intact with normal morphology. On histopathology, no chorionic villi was found inside the lumen of the fallopian tube. Presence of occasional ghost chorionic villi embedded in blood clots, scattered cytotrophoblast and syncytiotrophoblasts also seen in the sample obtained from the anterior leaf of broad ligament. Primary abdominal pregnancy is not only rare but the diagnosis is also a challenge. It can be diagnosed conclusively after laparotomy. There are no symptoms which are pathognomonic for abdominal pregnancy. The symptoms are akin to other types of ectopic pregnancy, so a high index of suspicion is highly necessary for diagnosis. The keys to management are an early diagnosis and prompt surgery.

**Keywords:** Primary abdominal pregnancy, Broad ligament pregnancy, Ruptured ectopic, Studdiford's criteria

### INTRODUCTION

Normally the fertilized ovum gets implanted inside the uterine cavity. If it is implanted anywhere inside the peritoneal cavity excluding tubes, ovaries or broad ligament, it is known as abdominal pregnancy. Most common location is pouch of Douglas, followed by mesosalpinx and broad ligament.<sup>1</sup> Rarely implantation on spleen, liver, and appendix is also reported. Abdominal pregnancy represents about 1% of extra uterine pregnancies with an incidence of 1:10,000-1:30,000 of all pregnancies.<sup>2</sup>

### CASE REPORT

A 30 years primigravida admitted with h/o amenorrhoea of 35 days followed by scanty bleeding per vaginam 20 days back for 2 days and free flow for 5 days after that. Patient

had acute abdominal pain last 4 hrs, her previous cycles were regular with average flow. There was history of treatment for infertility. There was h/o cholecystectomy 3 years back. No other significant past history. On general physical examination her pulse was 104/min, blood pressure was 110/70 mmHg, RR 17/min, RS, CVS-WNL. P/A lower abdomen OS closed. P/V cervical movements tender, guarding and rigidity in all fornices present, no definite mass could be palpated due to guarding.

Her UPT was faintly positive. USG pelvis was suggestive of ill-defined hypoechoic mass lesion in right sided adnexal region abutting right ovary. Moderate amount of free fluid collection in pelvis containing low level mobile echoes, no intrauterine gestational sac seen s/o right sided ruptured tubal gestation. Her Hb was 11.4 g/dl, WBC was 16410/cumm, platelet count was 1.48 lakh/l, INR was 1.26, PT was 16.4/13.3, RBS was 122.96 m/dl, sodium was 136

mmol/l, potassium was 4.03 mmol/l, urine R and M was WNL, HIV, anti HCV, HBsAg, RPR as NR.

She was taken for exploratory laparotomy with provisional diagnosis of right sided ruptured tubal pregnancy. Intra-operatively hemoperitoneum of approximately 300 ml was present, suction performed, clots removed. Uterus, both fallopian tubes and both ovaries found intact with normal morphology. Blood clots with products of conception were found adherent to anterior layer of right broad ligament. The adherent tissue was completely removed. After separating the tissue, a crater was observed on anterior layer of right broad ligament suggestive of old adhesion marks (Figure 1). Bleeding was seen from this area. Posterior layer of right broad ligament was intact, no bulge could be seen. The bleeding could not be controlled by cauterization, to achieve hemostasis, right salpingectomy was required. Complete hemostasis achieved. The fallopian tube and the blood clots along with the ectopic mass obtained from pelvic cavity sent for HPE. It was confirmed that there were no remnant chorionic villi tissue. Peritoneal lavage done. Drain was left in peritoneal cavity. Post-operative period was uneventful. Drain removed on third day, stitches removed on 7<sup>th</sup> post-operative day and patient was discharged.

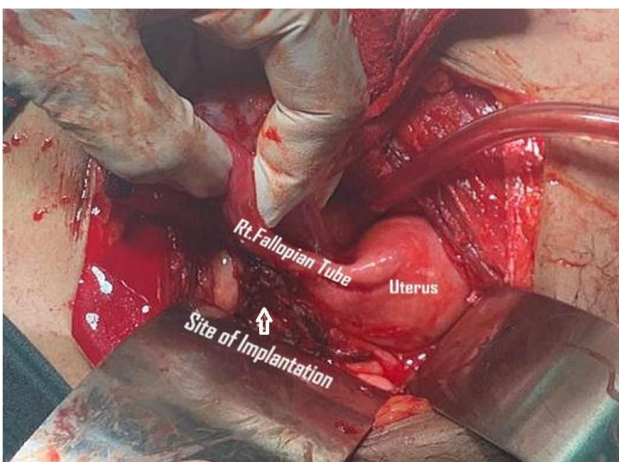
**Histo-pathological report**

*Fallopian tube*

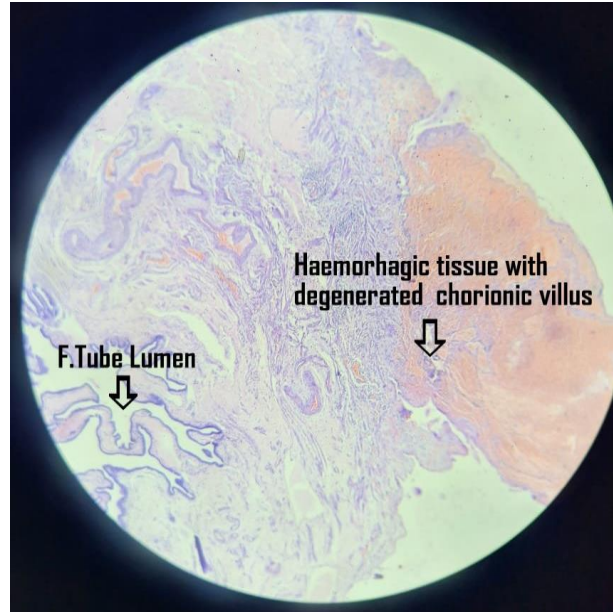
On the outer surface of fimbrial end there was presence of intermediate trophoblast cells embedded in marked haemorrhage. Arias-Stella reaction was also evident. No chorionic villi were found inside the lumen of the fallopian tube (Figure 2).

*Products of conception/blood clots*

Presence of occasional ghost chorionic villi embedded in blood clots, scattered cytotrophoblast and syncytiotrophoblasts also seen (Figure 2).



**Figure 1: Site of implantation.**



**Figure 2: Histopathology slide of fallopian tube and products of conception.**

**DISCUSSION**

In an abdominal pregnancy which is uncomplicated, the clinical symptoms are very nonspecific. Most frequently observed are unexplained persistent abdominal or suprapubic pain (100%), bloody vaginal discharge, nausea, vomiting (70%), painful fetal movements (40%), altered bowel movements and general malaise.<sup>3</sup>

In the first trimester and early second trimester, the symptoms may be same as are seen in tubal abortion or rupture as was in our case. Early diagnosis of an abdominal pregnancy is difficult until there is a sign of ectopic mass rupture, causing massive intra-peritoneal bleeding. Although transvaginal ultrasonography and MRI have made it possible to make an early diagnosis of abdominal pregnancy, definitive diagnosis is based on surgery. Therefore if there is any sign of suspected abdominal ectopic pregnancy, diagnostic surgical intervention should always be considered as a first-line intervention.

A primary abdominal pregnancy has been reported with intraoperative finding of grossly normal adnexae, suggestive of migration of fertilized ovum through the fallopian tubes into the abdomen. It can be pelvic (recto-uterine pouch, broad ligament, fundus or posterior side of the uterus), abdominal (diaphragm, liver, spleen, omentum) or even retroperitoneal. It is very rare.

Secondary abdominal pregnancy is the most common form. It can result from tubal rupture or from a tubo-abdominal abortion. It can also be the consequence of an intrauterine pregnancy after a rupture of a hysterotomy scar, or a uterine perforation or a rupture of a rudimentary horn. For diagnosing primary abdominal pregnancy, Studdiford's criteria needs to be fulfilled. These include:

(1) normal bilateral fallopian tubes and ovaries; (2) the absence of utero-peritoneal fistula; (3) pregnancy related exclusively to the peritoneal surface and early enough to eliminate the possibility of secondary implantation following a primary location in the tube.<sup>1</sup>

Friedrich and Rankin's modified the Studdiford's criteria in 1968 (a) the presence of pregnancy of no more than 12 weeks' histological gestation with trophoblastic elements related solely to a peritoneal surface; (b) grossly normal bilateral fallopian tubes and ovaries; and (c) no evidence of uteroplacental fistula.<sup>4</sup>

In our case, on the basis of history, clinical examination findings and USG report, the primary diagnosis was ruptured tubal pregnancy. But on opening the abdomen, initially it appeared like a secondary abdominal pregnancy after tubal abortion from right tube, as the right tube was dilated in its lateral part. But histopathology did not reveal any chorionic tissue inside the tube. However, the amenorrhoea was only 35 days; hence if diagnosis of secondary abdominal pregnancy after tubal abortion is considered, the chorionic villi should have been persistent inside the tube.

Additionally uterus, both tubes and both ovaries were intact, there was no uteroperitoneal fistula, confirming the diagnosis of primary abdominal pregnancy. The possibility of broad ligamentary pregnancy secondary to rupture of fallopian tube at its inferior surface, between the leaves of broad ligament is also ruled out because of the intactness of tube and presence of chorionic tissue exclusively to anterior surface of broad ligament. Overall findings fulfil Studdiford's as well as Friedrich and Rankin's modified criteria, supporting the diagnosis of primary abdominal pregnancy.

If diagnosed earlier before rupture, management depends on the gestational age, site of placental attachment, patient's condition and clinician's experience. The success of medical management does not correlate with beta-HCG levels.

Roughly 90% of early abdominal pregnancies are managed by surgical means as majority of them have hemoperitoneum and half of the women treated by medical method ultimately require surgical intervention. Laparotomy is considered better than laparoscopic surgery because of the risk of uncontrollable perioperative hemorrhage from the implantation site.<sup>2</sup>

Medical management with methotrexate is frequently used for small hemodynamically stable tubal ectopic but its use is controversial in abdominal ectopic. Methotrexate treatment appears to be contraindicated by some as it causes rapid tissue necrosis eventually providing a medium for colonic bacteria, leading to sepsis and death.<sup>4</sup>

Jayashreenayar et al in their case report of primary broad ligament pregnancy, proposed the required anatomical relationships to diagnose a broad ligament ectopic pregnancy, namely: the pelvic side walls laterally, location of the uterus medially, fallopian tube superiorly and the pelvic floor inferiorly.<sup>5</sup>

## CONCLUSION

Primary abdominal pregnancy is not only rare but the diagnosis is also a challenge. It can be diagnosed conclusively after laparotomy. There are no symptoms which are pathognomonic for abdominal pregnancy. The symptoms are akin to other types of ectopic pregnancy, so a high index of suspicion is highly necessary for diagnosis. The keys to management are an early diagnosis and prompt surgery.

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