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### RESEARCH ARTICLE

#### OMENTAL PREGNANCY: REPORT CASE AND LITERATURE REVIEW

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#### Abstract

**Objective:** Abdominal pregnancy is a rare form of ectopic pregnancy with very high morbidity and mortality for both the mother and the fetus. Diagnosis and management can pose some difficulties especially in low-resource centers. The objective of this study is to illustrate the different epidemiological, clinical and therapeutic data of abdominal pregnancy.

**Patient and observation:** We present an additional case of primary omental pregnancy at 12 gestational weeks presenting with symptoms of hemoperitoneum and acute abdomen. Pregnancy status was confirmed after admission. Transvaginal ultrasound examination revealed a single viable fetus with a large amount of free peritoneal fluid, but no intrauterine sac or adnexal mass. Laparotomy was done according to pre-operative diagnosis of ruptured tubal pregnancy. Bilateral tubes and ovaries were intact; omental pregnancy was detected and partial omentectomy was performed.

**Conclusion:** Early diagnostic of omental pregnancy is difficult but essential to reduce the high mortality.

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#### Introduction:-

Abdominal pregnancy is rarely reported, the incidence of abdominal pregnancy is 1 in 10, 000 deliveries, and omental pregnancy is the least common form of abdominal pregnancies [1]. It is associated with high maternal morbidity, with a risk of death 7–8 times greater than in ovarian pregnancies and 90 times greater than in an intrauterine pregnancy, mostly resulting from delayed diagnosis and profuse bleeding from the implantation site [2]. We report a case of primary omental pregnancy, diagnosed at laparotomy, which is rarely reported in literature.

#### Case observation

##### Patient information:

A 30-year-old nulliparous woman presented at 12 weeks gestation with vague lower abdominal pain and loss of fluid vaginally. The patient had no past medical problems, surgical operations and allergies. She denied a history of pelvic inflammatory disease and use of an intrauterine device.

##### Clinical findings:

On physical examination, the patient's vitals were stable, with a pulse rate of 100 beats per minute and a blood pressure of 100/60 mmHg. Abdominal examination revealed diffuse abdominal tenderness, signs of peritonitis.

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**Diagnostic assesement:**

Ultrasonography (abdominal and transvaginal) demonstrated a thick endometrium and an empty, normal-sized uterus surrounded by a large amount free blood with the adnexa clearly visualized (Figure1-2). In the peritoneal cavity, a well-defined gestational sac with the fetal pole was observed above the uterus, surrounded by intact choriondecidua (Figure1-2). Her preoperative hemoglobin was 10.6 mg/dl and platelet count was within normal limit. The renal and liver function tests were within normal limits. Serum b-hCG was 3000 mIU/ml. Abdominal pregnancy with hemoperitoneum led us to perform an immediate abdominal exploration.

**Therapeutic interventions:**

An exploratory laparotomy was carried out through pfannenstiel incision. There was 1,5 l of blood in the peritoneal cavity. Uterus, both the right and left tubes, and ovaries and adnexa were normal. The gestational sac and the bleeding site were observed within the great omentum (Figure 3-4), and partial omentectomy was performed. The pelvis was irrigated with 2 l of saline at the end of the procedure. Three units of blood were transfused. Subsequent histology confirmed an exclusive omental implantation site.

**Follow-up and outcome of interventions:**

The first post operative visit was after 1 month. There were no post-operative complications.

**Discussion:-**

Ectopic pregnancies (EP), resulting from the implantation of the blastocyst outside the uterine cavity, represent 1-2% of all pregnancies . Nearly 95% of ectopic pregnancies are implanted in one of the segments of the fallopian tubes [3]. The remaining 5% implant in the ovary, peritoneal cavity, within the cervix, and the omental pregnancy is the least common form of abdominal pregnancies [2]. Mortality due to omental pregnancy is mostly related to haemorrhagic shock. Omental pregnancies have been classified as either primary or secondary. Most abdominal pregnancies originate as tubal or ovarian pregnancies after rupture into the peritoneal cavity, they implant for a second time (secondary abdominal pregnancy) [4]. A small fraction of the reported cases are considered as primary (There were only 24 cases of primary abdominal pregnancy reported up to 2007) and reflect the three criteria for this condition established by Studdiford [5]: 1) Normal tubes and ovaries with no evidence of recent or remote injury; 2) An absence of any evidence of a utero-peritoneal fistula; 3) The presence of a pregnancy related exclusively to the peritoneal surface eliminates the possibility of a secondary implantation following a primary nidation in the tube. Our case fulfills the three criteria.

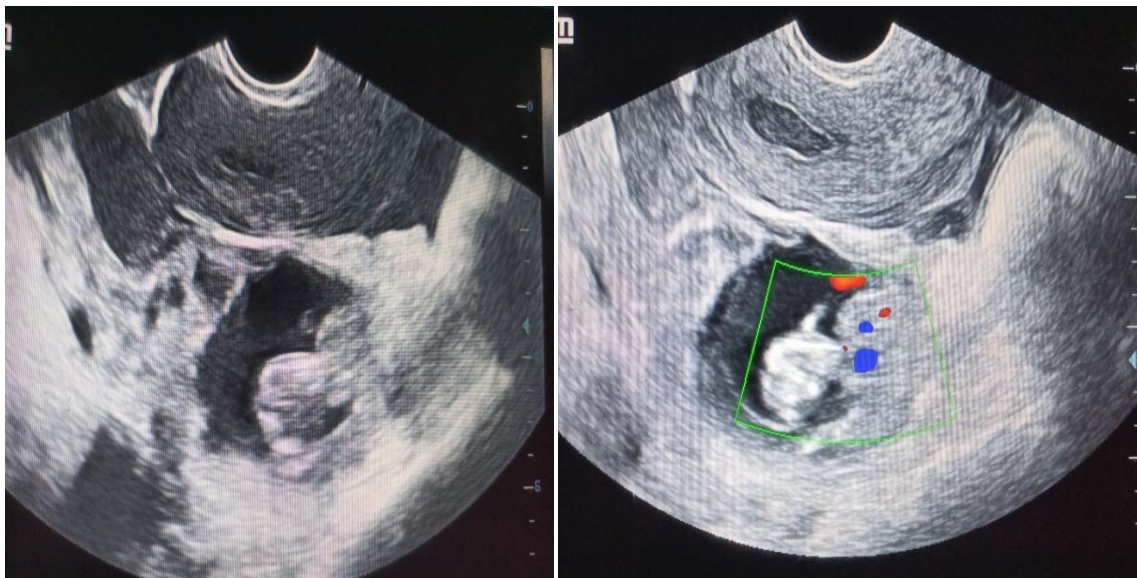
Early diagnosis of omental pregnancy is challenging. Abdominal pregnancy often leads to early spontaneous separation of the placenta from implantation site, causing abdominal bleeding. In rare cases, the pregnancy can develop to late stages.

The diagnosis of abdominal pregnancy is difficult, and is an intra-operative finding in 40 to 50% of cases [6], despite antenatal follow-up and ultrasound scan. The clinical expression of abdominal pregnancy is variable, depending on the degree of the anatomical distortion it creates and the placental insertion site [7]. Clinical signs described in literature are rather unspecific, among which the most frequently encountered: non-labour typically persistent abdominal or suprapubic pain (100%), no delay in menstruation, bloody vaginal discharge, gastrointestinal symptoms like nausea and vomiting (70%), painful fetal movements (40%), general malaise (40%), altered bowel movements [8,9]. Unfortunately our patient did not experience any of the above-mentioned symptoms, which could have led at least to a more scrupulous and frequent examination with a chance of discovery; the only symptoms experienced being the acute ones due to the bleeding, such as pelvic pain attributed to peritoneal irritation by blood. The most common physical findings reported in literature are the following: abdominal tenderness (100%), an abnormal fetal lie (70%; breech, oblique or transverse), easily palpating the baby's parts on clinical examination, and a displaced uterine cervix (40%) [8,9]. Abdominal tenderness was also positive upon palpation, the other signs being unable to be discovered as the pregnancy in our case was not as advanced. Ultrasonography remains the main method for the diagnosis of extra uterine pregnancy. It usually shows no uterine wall surrounding the fetus, fetal parts close to the abdominal wall, abnormal lie and/or no amniotic fluid between the placenta and the fetus [10]. Akhan et al. [11] presented the following ultrasonographic criteria for abdominal pregnancy: (1) visualization of the fetus separated from the uterus, (2) failure to visualize uterine wall, (3) eccentric position (relation of fetus to uterus) or abnormal fetal attitude (relation of fetal parts to each another) and visualization of extrauterine placental tissue, and (4) close approximation of fetal parts to the maternal abdominal wall. These features were also observed in our case. Efforts are currently being focused on other diagnostic modalities. In this

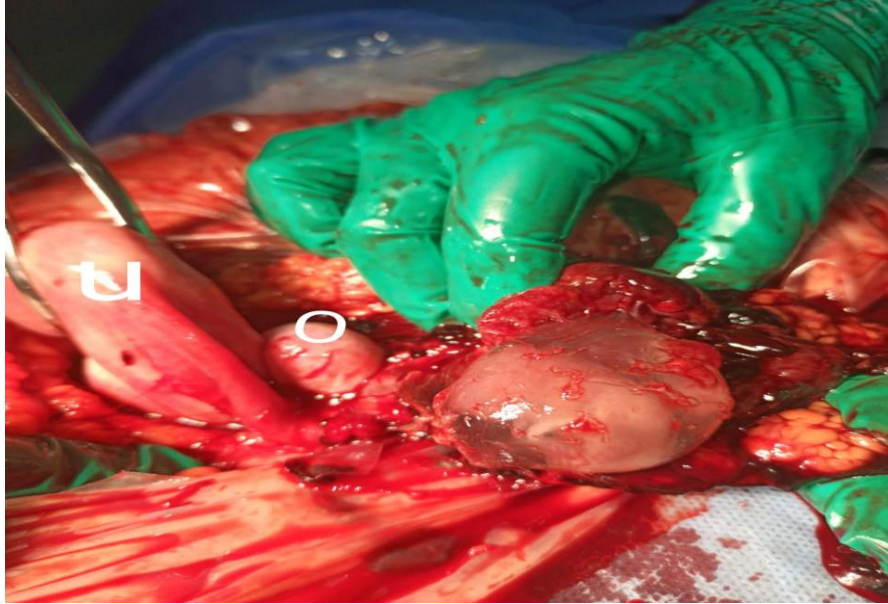
regard, a computed tomography (CT) scan or magnetic resonance imaging (MRI) has been used successfully to complement sonography in arriving at an accurate preoperative diagnosis. In fact, MRI is considered as the gold standard for diagnosis. Similarly, elevated maternal alpha fetoproteins have been found to be associated with abdominal pregnancy, especially those with a more extensive visceral implantation [12]. There are many treatment options, all decisions being made in correlation with the intraoperative findings and gestational age. In early pregnancy the sole treatment consisting of the surgical removal by laparotomy, laparoscopy or embolization [8,9,13,14,15]. Management of advanced abdominal pregnancy diagnosed after the mid-trimester and/or attainment of fetal viability remains controversial. The timing of the laparotomy procedure depends on the fetomaternal status and the neonatal intensive care facilities. Although undiagnosed asymptomatic abdominal pregnancies may extend for up to 38 weeks, for diagnosed abdominal pregnancies, it is recommended that in the absence of complications, a laparotomy procedure should be planned for at 34 weeks. The management of the placenta in abdominal pregnancy is still a matter of debate. Whether the abdominal pregnancy is early or advanced, it is recommended that the umbilical cord should be ligated as closely as possible to the placenta. The removal of the placenta is likely to be associated with torrential, uncontrollable intra-abdominal hemorrhage. The worst hemorrhage near to catastrophe has been reported by Ramchandran and Kirk [16]. When the placenta is left in place, it is necessary to keep watch over the appearance of the following maternal complications in post operative period: bowel obstruction, infection, hemorrhage, anemia, fistula, [17, 18] etc. These complications can worsen the maternal prognosis, with a lethality up to 18% [13,18]. Ombelet et al[19], in a large series of advanced abdominal pregnancies, reported that the placenta was completely removed in 58% of cases and left in situ in 42%. 10 Serial beta-HCG levels, ultrasonograms, and MRI can be used to follow up placental involution. The role of postoperative methotrexate is currently controversial, as it often leads to severe infection and abscess formation caused by accelerated placental destruction and necrotic tissue accumulation. Besides, spontaneous placental tissue resolution does occur in a majority of cases. However, methotrexate is still favored by some and has been used successfully in combination with preoperative arterial embolization [20].

### Conclusion:-

It is a very rare condition but its high rate of feto-maternal morbidity and mortality, the health authorities of our developing countries should make an effort to make routine. Early ultrasound accessible to pregnant women and the obstetricians should keep in mind the possibility of ectopic pregnancy, irrespective of the gestational age.



**Figure 1-2:-** Ultrasonography picture of the uterus shows empty endometrial cavity and well-defined gestational sac surrounded by intact choriodecidua.



**Figure 3:-** Intraoperative findings : Abdominal pregnancy within the omentum at laparotomy. The omental placental implantation site is seen separate from an intact uterus and bowel.



**Figure 4:-** Abdominal pregnancy - the excised placenta and the fetus.

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