ISSN No:-2456-2165

Ruptured Omental Pregnancy: A Case Report and Review of Literature

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Abstract:- Abdominal pregnancy is defined as the implantation and development of the fecundated ovum in the abdominal cavity in a primary or most often secondary manner. We report the observation of a patient who was treated for an abdominal pregnancy with ruptured omental location. We report the clinical data and therapeutic management of this rare pathology. Pelvic pain was the main reason for consultation associated with an anaemic syndrome. The diagnosis of ectopic pregnancy was suspected on ultrasound with an elevated beta HCG level. The treatment was performed by laparotomy because of the hemodynamic instability.

Keywords:- *Abdominal Pregnancy, Omental Localization, Vital Prognosis.*

I. INTRODUCTION

Abdominal pregnancy is defined as the implantation and development of the fertilized egg in part or in whole in the abdominal cavity in a primary but most often secondary manner **(M Mahi, 2002).** ; In about 1.5% to 2.0% of all pregnancies are ectopic **(Barnhart KT, 2009).** This is a rare occurrence, since it accounts for only 1% of ectopic egg implantations according to Half **(M Mahi, 2002).**

II. CASE

We report a case of 22-year-old patient, gravida two, para one with history of scarred uterus, no history of contraception use or any other medical history. She was referred to our hospital for suspicion of ectopic pregnancy with 10 weeks history of amenorrhea. She started to complain of epigastric crampy pain of 6 days duration, radiating down to the suprapubic area with no other associated symptoms. On physical exam, the patient was alert and conscious, tachycardic at 110 bpm and hypotensive with BP of 90/60, and pale mucous membranes; her abdomen was diffusely tender. Pelvic exam with speculum showed purplish cervix, macroscopically appears normal, and a long posterior closed cervix on vaginal digital exam. Pelvic ultrasound revealed any empty uterus with endometrial strip, both ovaries were visualized with no abnormalities, with right latero-uterine hypo/hyperecho area of 50x30x38mm probably due to a large blood clot with significant peritoneal effusion. On the blood workup: CBC revealed normochromic normocytic anaemia with HGB of 7.1 g/dl, Beta-HCG = 5608 mIU/mL. The patient underwent urgent exploratory laparotomy with mini-pfannenstiel for suspicion of ruptured ectopic pregnancy. Intraoperatively, she found to have a hemoperitoneum estimated at 1000 cc, the two adnexae were normal as well as the uterus, and ruptured gestational sac was discovered in the omentum on the left side **(Figure 1)** in the form of soft red-brownish encapsulated nodular tissue measuring approximately 3 cm x 2 cm. The gestational sac was identified with surrounding blood clots with multiple implants scattered all around, which is in favour of primary abdominal pregnancy, required partial resection of the omentum including the gestational sac and most the implants **(figure 2)** followed by abdominal lavage with normal saline and placement of drain; the rest of the exploration of the abdominal and pelvic cavity was unremarkable. Postoperatively, the patient received two units of packed red blood cells and an injection of Methotrexate (1 mg/kg) as single dose after normal prechemotherapy evaluation. Beta-HCG follow up at 48 hours was 1940 mIU/mL then followed by a weekly Beta-HCG level which returned negative at 3rd postoperative week. The pathology report revealed a fatty tissue with haemorrhagic suffusions in which small to medium sized chorionic villi, equipped with a vascular axis and bordered by a regular non-proliferating trophoblast, are present.

III. DISCUSSION

Ectopic pregnancy is the leading cause of death in the first trimester **(Barnhart KT, 2009)**. The abdomen is the least common site of ectopic pregnancy **(Daniel, 2017)** and primary omental pregnancy is still the rarest abdominal pregnancy.

The frequency of ectopic pregnancies (EP) is estimated as 11 ectopic per 1000 (eutopic) pregnancies **(National Institute for Health and Care Excellence, 2019)**.

Maternal mortality, resulting from this, can be as high as 20%, secondary to a massive haemorrhage from rupture or trophoblastic invasion into nearby structures and organs **(Poole and al.2012).**

Early omental pregnancy is difficult to diagnose because the clinical, biological, as well as ultrasound characteristics are not specific. The diagnosis is often made intraoperatively and then confirmed by histopathology. The first detailed description of an omental pregnancy dates to 1903 **(Poole A, 2012).**

During clinical assessment of women of reproductive age, be aware that: they may be pregnant, and think about offering a pregnancy test even when symptoms are non-specific and the symptoms and signs of ectopic pregnancy can resemble the common symptoms and signs of other conditions – for example, gastrointestinal conditions or urinary tract infection **(National Institute for Health and Care Excellence, 2019)** All healthcare professionals involved in the care of women of reproductive age should have access to pregnancy tests.

Abdominal pregnancies (AP) can occur as either a primary or a secondary event. In secondary abdominal pregnancies, the embryo implants on the fallopian tube and then is expelled and re-implanted on another abdominal surface, whereas in primary abdominal pregnancy, the rarest type, implantation occurs directly on the peritoneal surface **(Varma, 2003),** reflecting the three criteria for this condition established by Studdiford **(Studdiford, 1942)** :
- Both fallopian tubes and ovaries must be free of any lesions.
- Absence of utero-peritoneal fistula.
- The relationship of the oval sac is limited to the peritoneal surface.
- The pregnancy must be sufficiently young.

Friedrich and Rankin in a review of the literature, they found only 24 cases of first trimester pregnancies in which implantation was only peritoneal **(Onan, 2005).** They proposed to modify the Studdiford criteria to limit acceptable cases such as tubal lesions that should be clear and the placental site easily distinguishable.

(**Sophie M. Eisner and all** ; 2020) reported a recent review of the literature between 2007 and 2019 on abdominal ectopic pregnancies including its omental localization that elaborates on the clinical signs and diagnostic means and the envisaged treatment, 12 cases were reported from different countries. A total of 115 case reports from 113 publications were analyzed for this literature review. of which location in the greater omentum ranks fourth (12/115 or 10.4%) after uterine serous location, broad ligaments of the uterus, and the liver.

They have reported the following results of omental pregnancies :

➢ ***Presenting symptoms***
- Abdominal pain (10/12), often located in the lower abdomen, in one case with syncope
- Abdominal pain and vaginal bleeding with syncope (1/12)
- Not specified (1/12)

➢ ***Diagnosis and diagnostic procedures***
- Earliest diagnosis made in the 4th GW, latest diagnosis in the 14th GW
- Diagnosed by exploratory laparoscopy (5/12), ultrasound scan (4/12), MRI (1/12), exploratory laparotomy (1/12), or CT (1/12).

➢ ***Intervention***
- Surgical treatment with laparoscopy (7/12)
- Exploratory treatment with laparotomy (5/12)

➢ ***Placental management***
- Placental resection 12/12, combined with partial omentectomy in 7 cases.

Careful intraoperative evaluation revealed a normal uterus and fallopian tubes with intact ligaments and no evidence of adhesions. When the omentum was first examined and found to cover the fallopian tubes, there was little suspicion that the ectopic pregnancy was located in the omentum, because hemoperitoneum was present and gave an abnormal appearance to the entire omentum and abdominal cavity. All 3 Studdiford criteria were met in this case, confirming the presence of a primary omental pregnancy.

In our case, the presence of diffuse abdominal pain, elevated beta-HCG, and abundant hemoperitoneum proved the diagnosis of ectopic pregnancy; however, the intraoperative findings of normal uterus and tubes with implanted omental gestational sac and its surroundings further supported the diagnosis of omental pregnancy which was confirmed later by histopathology exam. The maternal morbidity rate is high due to the occurrence of haemorrhages, which complicate management **(Maiorana, 2007).**

The laparoscopic approach is preferred except in cases where laparotomy is inevitable such as patients with significant intraperitoneal haemorrhage, vascular damage, or poor visualization of the pelvis at the time of laparoscopy **(Maiorana, 2014).** Our patient had an abundant hemoperitoneum and laparotomy was safe and effective approach.

Adjunctive treatment with systemic methotrexate has been suggested to reduce the risk of uncontrolled placental bed haemorrhage and the possibility of persistent trophoblastic tissue **(Barnhart, 2009)** which has been reported more often after conservative surgery.

In conclusion, the omental ectopic pregnancy is a rare form of abdominal ectopic pregnancy difficult to diagnose even preoperatively because of its clinical presentation and non-specific ultrasound findings. It is therefore important to carefully examine the omentum if the ovaries and fallopian tubes appear normal intraoperatively.

ISSN No:-2456-2165

IV. CONCLUSION

Abdominal pregnancy is exceptional, especially in the omentum, and it is a rare and difficult to diagnose disease. The nonspecific clinical presentations make diagnosis difficult, especially in the first trimester. The treatment is surgical.

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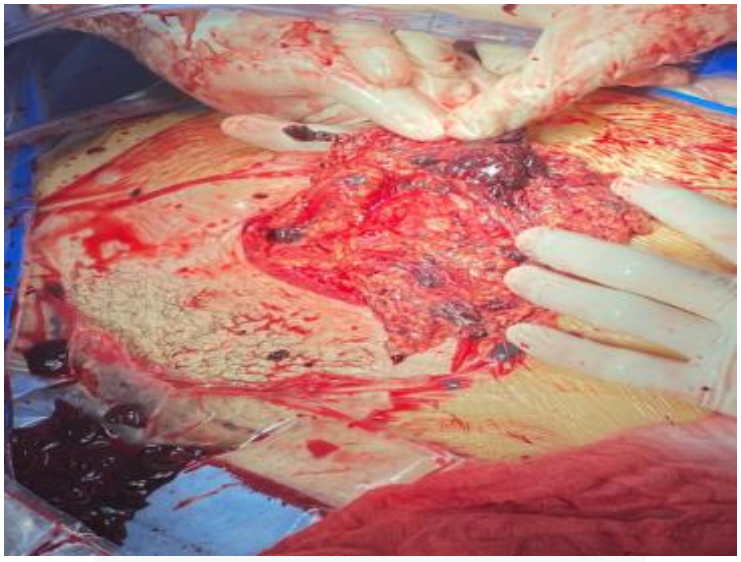

Figure 1: Omental location of an ectopic pregnancy

ISSN No:-2456-2165

Figure 2: Partial omentectomy (with ruptured sac)

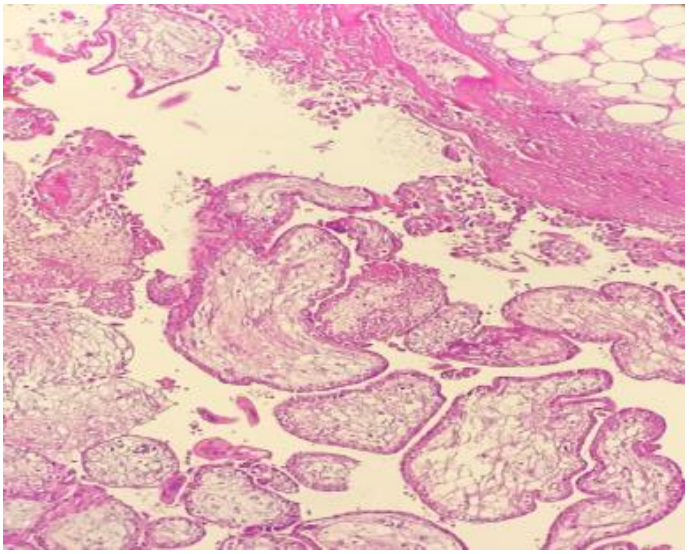

Figure 3: Histological aspect of chorionic villi within fatty tissue