Original Research Paper

Volume -10 | Issue - 5 | May - 2020 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Gynaecology

A REPORT ON A RARE CASE OF JUXTA INTERSTITIAL ECTOPIC PREGNANCY RUPTURE WITH MASSIVE HEMOPERITONEUM

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ABSTRACT An interstitial ectopic pregnancy is a rare form of an ectopic pregnancy which is also considered dangerous when ruptured due to massive blood loss. It occurs in interstitial or intramural segment of the fallopian tubes. The diagnosis of interstitial pregnancy should be ascertained by ultrasonography. Depending on size, viability and condition of the patient management should be planned accordingly. Laporascopic management is considered ideal. Adequate suturing of uterine cornua could prevent risk of rupture for subsequent pregnancies. Minimizing blood loss during and after surgery is a priority. Here we present a case which had pregnancy inserted at junction of isthmus and interstitial part of uterus.

KEYWORDS : Interstitial Pregnancy, Cornual Pregnancy, Tubal Pregnancy

Learning Objective

This case is rare presentation among all ectopic pregnancies. Our patient had conceptus inserted at the junction of Isthmus and Interstitial part of uterus. Our case was an un-booked case presenting at a rural tertiary care centre. She presented at 8 weeks of pregnancy as a acute abdomen case in casualty. Patient gave history of infertility treatment being taken on irregular basis. Assisted reproductive procedures are on the rise hence clinicians must be aware about diagnosing an interstitial ectopic pregnancy at the earliest.

Introduction

Interstitial pregnancy (IP) is a rarest variety of tubal pregnancy, because of thick and vascular musculature of the uterine wall with greater distensibility, foetus grows dissecting the muscle fibres for a longer period (i.e., 12-14 weeks) before termination occurs (1). Whereas cornual pregnancy is a conception that develops in the rudimentary horn of a uterus with a Mullerian anomaly (2). Some people use the terms interstitial pregnancy (IP) and cornual pregnancy interchangeably. Mostly this pregnancy terminates as rupture into the peritoneum, associated with massive peritoneal haemorrhage due to combined vascularization of uterine and ovarian artery.

Incidence

Ectopic pregnancy occurs at a rate of about 1-2% of pregnancies and can occur in any sexually active woman of reproductive age. In India a tertiary care centre reported the incidence of ectopic pregnancy as 2.46 per thousand of deliveries. Among all the ectopic pregnancies, 97% occur in the fallopian tube, 80% in the tubal ampulla, 10% in the tubal isthmus and about 5% in the tubal infundibulum [Fig 1]. Only about 3% occur in the interstitial portion of the fallopian tube (3). Mortality rate is as high as 2.5 percent (4).

Case Report

A 25 years old female, gravida 2 parity 1, with a history of infertility treatment, with no comorbidities, presented to casualty with 2 months of amenorrhea. She had complaints of persistent vomiting, loose stools, abdominal pain and distention since last 24 hours. She had features of hypovolemic shock. She was managed for hemodynamic stabilisation with fluids and inotropes. Her initial labs showed UPT positive, haemoglobin of 5gm/dl, deranged coagulation profile (INR 1.9, APTT 35.6/31, platelets of 79000/cumm). A bedside ultrasound showed gross hemoperitoneum with ruptured ectopic pregnancy. Immediately multiple packed cell RBCs and fresh frozen plasma were arranged and she was shifted to operation theatre under high risk. 4 packed RBC and 6 fresh frozen were transfused during pre and post procedure period. Under general anaesthesia, a Pfannenstiel incision was performed in view of USG report stating lower abdominal site for ectopic. After dissecting rectus sheath and separating rectus muscle we entered peritoneal cavity. Gross hemoperitoneum (total amount of blood loss in peritoneal cavity 2446ml estimated as follows

1. Clots 960 gm x 1.5 clot conversion factor = 1440ml of blood
2. Free blood and fluid in peritoneal cavity and mop squeezed measured flask 860ml and Hb estimated 7.6gm%
3. All mops washed in minimal NS and peritoneal wash together Hb estimated, Hb corrected to 7gm % blood equals to 146ml Grand total of blood loss 1440+860+146 ml = 2446 ml) was noted after entering peritoneum, which was drained and cleared (5).

Quick inspection for the bleeder, revealed right ruptured ectopic pregnancy near the interstitum with active bleeding. Haemostasis was achieved with artery forceps and continuous haemostatic prolene suturing. This was followed by right salpingectomy and removal of products of conception [Fig 2]. After a thorough peritoneal wash, a drain was kept and abdomen was closed in layers. Post-surgical management included higher antibiotics, fluids and pain killers with continuous monitoring of urine output. The post-surgical management of patient in surgical ICU was uneventful. The histopathology report confirmed the pregnancy. The patient was discharged in hemodynamically stable and healthy condition.

Discussion

The diagnosis and treatment of IP is difficult in view of its rarity, majority of the tertiary care centres manage about 1 to 2 such cases every year. Also due to lack of RCTs and large-scale studies, therefore there is less consensus with regards to the gold standard in the management of IP.

Usually fimbrio ampullary ectopic pregnancy commonly ruptures or aborts in peritoneal cavity between 39 days to 56 days and isthmic tubal ectopic pregnancy ruptures by around 8- 9 weeks and interstitial pregnancy ruptures by around 12-14 weeks. Our patient had pregnancy which ruptured near interstitum, this could be reason for presentation at 8 weeks. Above mentioned position in our patient allows dual supply (uterine and ovarian artery), when ruptured, it presents with features of shock which invariably requires emergency laparotomy. Some patients will be diagnosed in a early stage where trial of expectant management (such as spontaneous miscarriage) or medical management (Systemic Methotrexate at 50mg/m2 x BSA, or Intra-gestation sac Methotrexate) can be given (6) (7). Here beta HCG play an important role, patients with declining serial HCG can be managed with expectant management as first line therapy (8). Other patients who have been diagnosed early can be managed with methotrexate. The Royal College of Obstetricians and Gynaecologists recommends that the women with tubal pregnancies who are most suitable for the methotrexate therapy are those who have serum beta HCG levels of

3000IU/ml and minimum symptoms. There is some evidence which suggests that the women who present with interstitial pregnancies and beta HCG levels of <5000IU/mL can be treated successfully with a single dose of methotrexate (9). Therefore, early diagnosis has got better prognosis for the patient.

Laparoscopic surgery techniques have improved over last 2 decades and it permits less invasive option. Future fertility is preserved with cornual ('wedge') resection, it carries the risk of uterine rupture due to the loss of myometrium and extensive uterine scarring (10). Liao et al. reported an incidence of subsequent uterine rupture and dehiscence after wedge resection of 30%.

Our case report had some unique features such as, our patient was un-booked, therefore she presented as acute abdomen to the casualty with features of shock. She had a teenage pregnancy 10 years ago, following which she was on infertility treatment at local centre for the past 3 months, with irregular follow-up.

Women are predisposed to IP who suffer risk factors such as previous ectopic pregnancy (22.9-54%), previous ipsilateral or bilateral salpingectomy (22.9-54%), conception after in vitro fertilisation (17.1-34.4%) and sexually transmitted disease (12.5-25%) (11).

Main stay of diagnosis of interstitial pregnancy are ultrasonography and beta HCG assay. Transabdominal/ transvaginal sonography can, not only help in diagnosing ectopic pregnancy but helps in differentiating interstitial from others. Criteria that may aid include: an empty uterus, a gestational sac seen separate from the endometrium and >1 cm away from the most lateral edge of the uterine cavity, and a thin, <5-mm myometrial mantle surrounding the sac (12). An echogenic line, known as the "interstitial line sign," extending from the gestational sac to the endometrial cavity most likely represents the interstitial portion of the fallopian tube and is highly sensitive and specific (13). Sometimes diagnosis can be difficult and in such cases MRI or a diagnostic laparoscopy will aid the diagnosis (14). Laparoscopy will reveal enlarged globular mass lying outside the round ligament with normal ovary and distal fallopian tube.

Mechanisms of rupture

Chorionic tissue around gestational sac (GS) penetrates muscle in the fallopian tube, as there is no endometrium to limit its penetration. At first there is hemorrhage around GS. This hematoma gets converted to organised clot which is invaded by fibroblasts. More hemorrhage develops around previously organized clots, followed by more layers of organised clot around the gestational sac (GS). This leads to formation of a multi-layered mass, 5 to 10 times larger than actual size of GS (conceptus) for that gestational age, which is hard enough to rupture any part of tube.

Conclusion

The diagnosis and management of interstitial ectopic pregnancy remains challenging, due to the rarity of these cases. Also, when the patients come with acute abdomen to casualty bedside sonography and early diagnosis is a key in managing such patients.

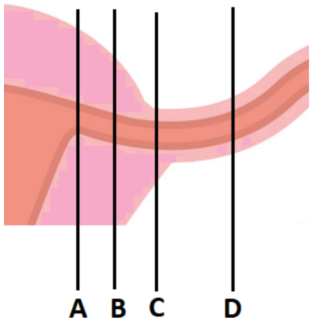

Fig 1: Schematic diagram of upper part of uterus with left fallopian tube showing cornua, interstitium, juxta interstitium, isthmus

Fig 2: Operative image showing left juxta interstitial ruptured ectopic pregnancy

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