Ovarian Ectopic Pregnancy - A Case-Report

Amna Kazi
Sohhraj Maternity Hospital, Karachi

SUMMARY

Ovarian pregnancy is a rare form of ectopic pregnancy. Here one such case is presented that was missed at laparotomy and then successfully treated with methotrexate.

INTRODUCTION

The incidence of ovarian ectopic has been variously reported as one in 7,000 to one in 60,000 deliveries and accounts for 1-3% of all ectopic gestations[^1]. The diagnosis and treatment of this unusual implantation site present both diagnostic and therapeutic dilemmas. In this case-report, we attempt to discuss the diagnostic pitfalls and a review of literature on this rare condition.

CASE-REPORT

The patient was a 27 years old female married for eight years with two live issues. At seven weeks amenorrhea she underwent an induced abortion by a nurse. This was followed by a high grade fever with rigors and lower abdominal pain. The pain was colicky in nature, moderate to severe in intensity and associated with nausea and vomiting. She gave no history of any bleeding per vaginum or urinary or bowel complaints. She was on broad-spectrum antibiotics since the D&E. Her menstrual cycle was regular and she was not practicing any contraception.

On physical examination her vital signs were normal and the abdomen was soft with tenderness noted in the left iliac fossa. Vaginal examination revealed a closed os with cervical-motion sensitivity. The uterus was 8 weeks size and there was a 4x4 cms soft tender mass palpable in the left fornix. There was no bleeding or discharge per vaginum. On transvaginal ultrasound the uterine cavity appeared with a regular thin endometrial stripe with no evidence of an intrauterine pregnancy. In the left adnexa was a tubo-ovarian mass 6x5 cms in diameter. The sonographic scan of the right adnexa revealed no abnormality. There was no evidence of a corpus luteum or of free fluid in the peritoneal cavity. The beta human chorionic gonadotropin (HCG) level was 670mIU/ml with no previous level available.

A diagnostic D&C (to rule out a failed intrauterine pregnancy) followed by laparotomy was carried out. The exploration revealed 8 weeks sized uterus and an enlarged left fallopian tube which was distorted and adherent to the left ovary and Pouch of Douglas. There was a foul smelling purulent discharge pouring out from the inflamed tube. The left ovary was normal sized but hemorrhagic. The right ovary and tube appeared normal. There was no haemoperitoneum. After a thorough but non fruitful search for an extraterine conceptus, a left salpingectomy was done. The pathology report came back as “acute salpingitis and inactive endometrium with non-specific inflammation.”

The patient had an uneventful recovery and she remained stable thereafter. Hence, we chose to keep her hospitalized and follow her with serial quantitative beta HCG starting from the first day post-surgery. Her subsequent levels were as follows: 2341mIU/L, 2179 mIU/L, and 2026 mIU/L. A transvaginal ultrasound performed on her 7th postop day revealed a small corpus luteum cyst 2.5x2.7 cms cyst in the left ovary. A diagnosis of an ovarian pregnancy was made in the light of her operative and sonographic findings. She was given methotrexate I.M. (50mg/m2). Four days later the patient’s serum beta HCG level had declined to 649 mIU/L. Weekly follow-up showed a rapid fall in HCG concentrations until a negative result: 63 mIU/L, 19 mIU/L and 4 mIU/L.
DISCUSSION

Ovarian pregnancies result from either ovum fertilization within the ovary (primary) or the implantation of a tubal abortion on an ovary (secondary). Risk factors include previous pelvic inflammatory disease, IUCD use, endometriosis, and assisted reproductive technologies- none of which were present in this patient. In contrast to a tubal pregnancy, ovarian pregnancies occur in fertile patients and recurrence is exceptional. Most ovarian pregnancies rupture in the first trimester (75–90%), with two thirds occurring during the first 8 weeks. Due to increased vascularity of the ovarian tissue, the patient can sustain massive hemorrhage with rapid circulatory collapse. The clinical presentation of an ovarian pregnancy differs and when asymptomatic may be missed all the way until later in gestation.

A review of literature showed that even in the developed countries, the diagnosis of an ovarian pregnancy is seldom made before surgery. The conditions most commonly confused with ectopic ovarian pregnancy are ruptured hemorrhagic corpora lutea, chocolate cysts and ruptured tubal ectopic pregnancies. The presence of a hemorrhagic lesion on the ovaries in the presence of normal looking fallopian tubes should arouse the suspicion of the surgeon to an ovarian ectopic pregnancy. If a concomitant corpus luteum cyst is seen, then the diagnosis becomes easier. Spiegelberg (1878) suggested four criteria to distinguish a primary ovarian pregnancy from a distal tubal pregnancy which has secondarily involved the ovary: the tube has to be entirely normal, the gestational sac has to be anatomically located in the ovary, the gestational sac and the ovary have to be connected to the uterine ovarian ligament, and the placental tissue has to be mixed with ovarian cortex. In this patient, acute salpingitis caused by the recent induced abortion obscured the first Spiegelberg criteria. The other three criteria could not be confirmed either as the ovary was not removed.

The sonographic appearance of an ovarian pregnancy is of a wide echogenic ring on the ovary, rarely with a yolk sac or fetal parts. In this patient, the inflamed fallopian tube on the left was adherent to the ovary, giving the affected adnexa a complex appearance, hence leading to the misdiagnosis of a "tubo-ovarian mass" on her first scan. The absence of an embryonic echo within the ovary again led to the misdiagnosis of a corpus luteum cyst on her second scan. However, with her quantitative beta hCG above the discriminatory zone and an empty uterus, the surgical team after much deliberation and procrastination concluded that the diagnosis was indeed an ovarian ectopic pregnancy.

Laparoscopy is now the gold standard for the diagnosis of ectopic pregnancy. This can later be confirmed by histologic examination of removed tissue. The traditional management of an ovarian pregnancy is surgical, and in the event that the patients desire a future pregnancy, the conservation of ovarian tissue is essential. Therefore, the preferred therapeutic procedures are partial ovariection (wedge resection), ovarian cystectomy or blunt dissection of the trophoblast tissue. Ablative therapy such as oophorectomy or adnexitomy should be reserved for advanced cases or vital indications only. Most authors (Seiner et al, Einenkal et al, and Nadarajah) have concluded that since a laparoscopy is required for diagnosis, it is logical to effect definitive surgical management at that time.

Currently, taking into consideration the lack of technological progress in endoscopic surgery in Pakistan, the role of medical management needs a serious thought. Only a few case reports describe medical management of ovarian pregnancy, using either methotrexate, prostaglandin F2alpha, prostaglandin E2 and oestrogen in combination with prostaglandin F2alpha. Tulandi has suggested that in women in whom no abnormality is imaged sonographically, there is a high probability that an ectopic pregnancy will not be visualized or palpated at surgery. Therefore, these women should be managed conservatively with either medical therapy or expectant management.

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Treatment of ectopic pregnancy with systemic methotrexate (IM) is the most widely used medical management of this disorder. In properly selected women, the success rate of a single dose treatment calculated from the patients’ body surface area (50mg/m2) is from 86 to 94 percent. Methotrexate (MTX) is a folic acid antagonist that...
inhibits DNA synthesis and cell reproduction, primarily in actively proliferating cells such as malignant cells, trophoblast, and fetal cells. MTX therapy is well-established as a secondary option for primary incomplete resection or trophoblast persistence. Medical management has the advantages of preventing possible surgical complications such as intraoperative hemorrhage, oophorectomy and pelvic adhesions. However, it is also associated with patient anxiety (risk of rupture of ectopic pregnancy, possibility of surgery should MTX fail) and side-effects such as conjunctivitis, stomatitis, and gastrointestinal upset. Except for the former, none of these were documented in our patient.

This case report supports the use of MTX therapy in selected patients with ovarian pregnancy. It also highlights the fact that awareness of this rare condition on the part of doctors, nurses and midwives is extremely important in reducing the associated morbidity and mortality. As shown in the present case, a skipped menstrual cycle may be the patient’s only initial complaint. By widespread expansion of services such as quantitative Beta HCG and transvaginal ultrasonography to women in the reproductive age group in Pakistan, we can shift the presentation of ectopic pregnancy from a medical emergency to a more benign condition.

REFERENCES


The Author:
Amna Kazi,
Senior Registrar,
Sobhraj Maternity Hospital,
Karachi.

Address for Correspondence:
Amna Kazi,
Doctors Flats A-2,
Shaikh Zayed Hospital,
Lahore.
E-mail address: kazi-amna95@hotmail.com