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Case Report

## A rare case of unruptured live second trimester ovarian ectopic pregnancy

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### ABSTRACT

Ovarian ectopic pregnancy is an extreme rare entity in all the cases of ectopic pregnancies. Before, the end of first trimester, it usually ends with rupture. It is such a unique and rare presentation that only 3% of all ectopic pregnancies are reported due to an ovarian cause. In this case report, authors have presented a patient with ovarian ectopic pregnancy which was found unruptured, live at the second trimester. The patient presented with abdominal pain and after routine check-up and ultrasound abdomen, patient was taken for an emergency explorative laparotomy and the ovarian pregnancy was excised and sent for histopathological examination, the histopathological examination further confirmed the diagnosis of the same. In some researches it has been seen that ovarian pregnancies are rising, considering that, the findings of the report may help frame future diagnostic and treatment guidelines.

**Keywords:** Ectopic, Ovarian, Pregnancy

### INTRODUCTION

Ovarian ectopic pregnancy is an extreme rare entity amongst all the cases of ectopic pregnancies.<sup>1</sup> It is such a unique and rare presentation that only 3% of all ectopic pregnancies are reported due to an ovarian cause.<sup>2</sup> The span of it goes from 1 in 2000 to 1 in 60 000 deliveries.<sup>3</sup> It has been found that this form of pregnancy usually ends with rupture even before the end of first trimester.<sup>4</sup>

Amongst the risk factors studied, it has been reported that, intrauterine device users (IUD) are more prone to develop ovarian ectopic pregnancy, even so, one in every nine of these ectopic pregnancies is an ovarian ectopic pregnancy.<sup>5,6</sup> Since the presentation of this case is rare and unique, the diagnosis of this is extremely difficult and based on surgical as well as histopathological study.

In comparison to other ectopic pregnancies, amongst which tubal pregnancy is the most common form, ovarian

can accommodate more easily and the chances of rupture and less than tubal pregnancy but it still leads to an early stage rupture.<sup>7</sup>

In this case report, authors present an extremely rare phenomenon of ectopic ovarian pregnancy which was unruptured and found live even in the second trimester. This is a rare case as most of the ectopic ovarian pregnancy rupture before the end of first trimester.

The patient presented with abdominal pain and after routine check-up and ultrasound abdomen, patient was taken for an emergency explorative laparotomy and the ovarian pregnancy was excised and sent for histopathological examination, the histopathological examination further confirmed the diagnosis of the same. It has been evident so far that the occurrences of ovarian pregnancies are rising, the findings of the report may help frame future diagnostic and treatment guidelines for the same.

## CASE REPORT

A 37-year-old female patient presented to an OPD of the department of obstetrics of a tertiary care hospital of Jodhpur for routine antenatal checkup with chief complaints of abdominal pain since the past 4 days.

The female was second gravida (gravida II) with history of amenorrhea since the past 4-5 months. She had her first child home delivered.

The general physical examination was performed. She was well alert and oriented to time, place and person. Her vitals were taken which were found well within limits. Further, per-abdominal examination was performed, during which a surrapubic mass was felt approximately 18-20 weeks, with external ballottement. Per-vaginal examination was performed, during which it was found that external os was patulous and internal os was closed. Tenderness and fullness were found in the left fornix, although per-vaginal exam was not very informative as the patient was un-corporative.

Furthermore, routine antenatal checkup profile was performed. The investigations were as follows- Her laboratory investigations are as follows-

- haemoglobin (hb): 8.3 mg/dl (normal range: 12.0-16 mg/dl),
- R.B.C. count: 3.18 mill/cumm (normal range - 3.5-5.5 mill/cumm),
- H.C.T. (haemocrit) - 22.0% (normal range - 34-48%),
- M.C.V. - 69.18 (normal range - 80-100),
- M.C.H. - 26.10 (normal range - 27-32),
- M.C.H.C. - 37.73 (normal range - 32-36),
- Total leucocyte count: 9,900/mm<sup>3</sup> (normal range - 4000-11,000/mm<sup>3</sup>),
- Platelets count- 2.98 lakh/cumm (normal range: 1.5 lakh/cumm - 4.5 lakh/cumm),
- Neutrophils: 75% (normal range - 40-70%). Other values were found well within limits.

Further, ultrasonography (USG) was performed which was suggestive of a single live extrauterine fetus in pelvis superior to uterus, closely abutting the uterine fundus and endometrial canal was found empty. A differential diagnosis of concealed uterine perforation with extrauterine amniotic sac development was made while the probability of ectopic pregnancy was considered less likely. The fetal weight was approximated to 217±32 grams.

The USG finding was considered abnormal, as according to the USG finding the fetus was extrauterine but the placenta was located in the antero-superior segment well above the internal os.

Further, patient was admitted in the emergency labour room and taken for an emergency procedure of explorative laparotomy under spinal anesthesia after arranging 1 unit of blood. Patient's abdomen was approached by a midline infra-umbilical vertical incision. After internal visualization, a huge mass of approximately 15×20×5 cm with fetus en sac was found adjacent to the uterus on the left side posterior to the left fallopian tube. Mass was highly vascular and mild amount of hemoperitoneum (approximately 100 ml) was present. Uterus was found enlarged (approximately of 8-10-week size) with right ovary and right fallopian tube normal (Figure 1).



**Figure 1: Right fallopian tube and ovary were found normal.**



**Figure 2: Left sided fallopian tube is intact. Gestational sac is connected to uterus by ovarian ligament and occupying a portion of ovary.**

Uterus was found completely intact with no sign of rupture which was in opposition of the findings of the USG. It was also found that left ovary was not separated from the thin walled mass and mass was attached to the uterus with ovarian ligament (Figure 2).

Therefore, a diagnosis of left ovarian ectopic pregnancy was made and excision of the ectopic pregnancy was decided and performed by clamping, cutting and ligating the mass at the base of the ovarian ligament and left fallopian tube. Further, complete hemostasis was achieved. 1 unit of blood transfusion was given intra-operatively. Post-operatively patient's vitals were found stable. Pulse rate - 84/min and blood pressure was-120/86. Patient was discharged on the 6<sup>th</sup> day with no complications post operatively.

Furthermore, on cut section of the mass, complete amniotic sac with live fetus (approximately 18-20 week) was found (Figure 3).



**Figure 3: Fetus extracted from ovarian ectopic pregnancy with attached umbilical cord and placenta.**



**Figure 4: Sac wall of ovarian tissue and placental tissue.**

Placenta was found covering the entire mass (Figure 4).

Further, placenta, fetus and cystic wall was saved in formalin solution and sent for histo-pathological examination. In the histopathological examination, first, gross cut section was done (Figure 5).

Further, the histopathological findings confirmed the diagnosis of ovarian ectopic pregnancy.



**Figure 5: Gross cut section showing ovary.**

## DISCUSSION

Ovarian ectopic pregnancy has been considered a rare entity, but according to research by Gaudoin et al, a rise in ovarian ectopic pregnancy has been noted, also in another research it was noted that ovarian ectopic pregnancy cases were 90% related to IUD usage.<sup>8,9</sup> For diagnosis of an ovarian pregnancy Spiegelberg's criteria for an ovarian pregnancy are 1) fallopian tubes, including fimbria, must be intact and separate from the ovary, 2) the pregnancy must occupy the normal position of the ovary, 3) the ovary must be attached to the uterus through the utero-ovarian ligament, and 4) there must be ovarian tissue attached to the pregnancy in the specimen.<sup>10</sup>

While these criteria are surgical, ultrasound guidelines for diagnosing are not mentioned. A study by Comstock et al studied the ultrasound imaging in these cases and found that, ovarian ectopic seemed to be a hemorrhagic ovarian cyst on the surface of the ovary in all patients while in the patient in whom no echogenic ring was seen by ultrasound, the mass had ruptured.<sup>11</sup>

Most commonly presenting clinical symptoms are abdominal pain and vaginal bleeding.<sup>12</sup> Sometimes, patients also present with hypovolemic shock secondary to an acute intra-abdominal bleed although in some cases, women can be totally asymptomatic.<sup>13</sup>

The management of the ovarian pregnancy has been attempted in many ways, surgery being one of the main management methods. The aim of surgery is to remove the ectopic pregnancy, while preserving ovarian tissue.<sup>14</sup> Multiple methods have been tried, but currently a procedure of minimal access surgery is becoming the preferred surgical option for the treatment of ovarian pregnancy. There are many techniques described by researchers which include - securing the ovary followed by sharp or blunt dissection of the ectopic pregnancy off



the ovary while hemostats is achieved by cautery, ultrasonic device has also been described, suture-loop surgery, and even medical management has been tried, methotrexate and etoposide have been used as an alternative to surgery.<sup>15-18</sup>

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