



## OVARIAN ECTOPIC PREGNANCY: SUSPICION OF RADIOLOGY, SORTED BY HISTOPATHOLOGY

**Dr D P Singh**

Gynaecologist, Armed Forces Medical Services

**Jaya Manchanda\***

Pathologist, Armed Forces Medical Services \*Corresponding Author

**Dr Sunil Kumar  
Tripathi**

Radiologist, Armed Forces Medical Services

### KEYWORDS :

#### INTRODUCTION

Ectopic pregnancy is an important cause of pregnancy related complications during first trimester and accounts for 10% of all maternal mortality. Ovarian pregnancy constitutes <3% of all ectopic pregnancies with an incidence ranging from 1:6000 to 1:40,000 pregnancies(1,2). Ovarian ectopic pregnancies (OEPs) result from secondary implantation on the ovary or from failure of follicular extrusion(3). The increased incidence is because of wider use of intrauterine contraceptive device (IUCD), ovulatory drugs, assisted reproductive techniques such as *in vitro* fertilization (ivf), and embryo transfer(4). There has been a recent increase in the incidence of ovarian pregnancies due to better diagnostic modalities such as transvaginal ultrasonography and serum  $\beta$  hcg estimation.

#### CASE REPORT

A 26-year primigravida with no history of amenorrhea presented with acute Abdomen after sexual intercourse. She had no previous history of pelvic inflammatory disease, abortions, or use of any intrauterine device. On examination she was pale and per abdomen examination showed abdominal distension, tenderness, guarding, and shifting dullness. Per vaginal (P/V) examination showed tenderness in the fornices.

Relevant clinical investigations showed hemoglobin of 4.5 g/dl. Peripheral blood smear showed microcytic hypochromic anemia and pregnancy test was positive. Ultrasonography revealed thickened endometrial cavity, empty uterus, right sided ovarian rupture, and hemoperitoneum with collection of 1.5 L of blood(Figure 1). Left ovary and tube were normal. A provisional diagnosis of ruptured ectopic pregnancy was made.



**FIGURE 1-Transvaginal gray-scale image of the echogenic mass within the right ovary**

Emergency laparotomy was performed which showed enlarged and ruptured right ovary along with hemoperitoneum(Figure 2). There was no evidence of endometriosis or chronic inflammation. A unilateral salpingo-oophorectomy was performed and sent for histopathological examination.

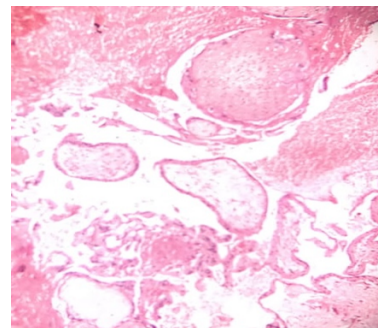


**FIGURE 2-Intraoperative findings- Ovarian ectopic.**

#### Pathological findings

Grossly the specimen consisted of ovary and fallopian tube sent separately in two containers. The ovary measured  $4.8 \times 3.5 \times 2.5$  cm. External surface was congested. Cut section showed areas of hemorrhage measuring  $3 \times 3$  cm compressing the normal ovarian parenchyma. Right tube measured 2 cm in length and cut section was unremarkable.

Histopathological examination (HPE) showed blood clots, chorionic villi, and ovarian stroma [Figure 3]. The fallopian tube was within the normal histological limits. Hence a diagnosis of right-sided ovarian pregnancy was established.



**FIGURE 3-Chorionic villi in ovarian stroma**

#### DISCUSSION

The earliest reported case of an ovarian pregnancy was described by Dr. Saint Monnissey in the 17th century [5] and although it remains one of the rarest forms of ectopic pregnancies the incidence has been rising, currently estimated to be between 0.5 and 3%. Ovarian ectopics occur by fertilisation of an ovum retained in the peritoneal cavity leading to implantation on the ovarian surface [6] Spiegelberg in 1882(7) suggested certain criteria for diagnosing ovarian pregnancies which are relevant even today.

1. The tube must be intact and clearly separate from the ovary.
2. The foetal sac must occupy the normal position of the ovary and be connected to the uterus by the uteroovarian ligament.
3. Definite ovarian tissue must be present in the sac wall.

Ovarian pregnancies are classified as primary and secondary. Primary occurs if the ovum is fertilized while still within the follicle and this phenomenon is postulated to be a consequence of ovulatory dysfunction. Secondary occurs when fertilization takes place in the tube and the conceptus is later regurgitated to be implanted in the ovarian stroma. Ovarian pregnancies can be intrafollicular or extrafollicular. Intrafollicular is invariably primary and fulfill the Spiegelberg criteria. Extrafollicular may be primary or secondary and ovarian tissue is usually not present in the wall of the gestational sac.[8]

Delayed diagnosis of ovarian ectopic pregnancies can be fatal with massive haemorrhage and carry a risk of oophorectomy with subsequent reduced fertility. As demonstrated in the case discussed, preoperative diagnosis of ovarian ectopic can be challenging as symptoms are nonspecific and ultrasound diagnosis is difficult [9]. In the literature case series have revealed preoperative diagnosis

achieved in 11–28% of cases [10, 11].

At the time of surgery, all four of Spiegelberg's criteria were met: the ipsilateral tube was normal and separate from the ovary, the pregnancy occupied a normal position on the ovary, the ovary was attached to the uterus by the ovarian ligament, and there was pathologic confirmation of placental tissue attached to the ovarian stroma.

In our case, the patient is a 26-year primigravida who presented with acute abdomen with no suggestive history. Preoperatively the diagnosis was suspected by clinical features, ultrasonography, raised serum  $\beta$ HCG levels, and later confirmed by histopathology.

## CONCLUSION

Ovarian pregnancies should be entertained as one of the important differential diagnosis in females of reproductive age group presenting with acute abdomen which helps in early diagnosis, better treatment, and good prognosis.

## REFERENCES

1. Parker VL, Srinivas M: Non-tubal ectopic pregnancy. *Arch Gynecol Obstet* 2016;294:1–9.
2. Io S, Hasegawa M, Koyama T: A case of ovarian pregnancy diagnosed by MRI. *Case Rep Obstet Gynecol* 2015;2015:143031.
3. Roy J, Babu AS: Ovarian pregnancy: two case reports. *Australas Med J* 2013;6:406–414.
4. Fox H. Ectopic pregnancy. In: Fox H, Wells M editors. *Haines and Taylor obstetrical and gynecological pathology*. Vol 2. 4th ed. New York: Churchill Livingstone; 1995. p. 1128–9.
5. S. Lurie, "The history of the diagnosis and treatment of ectopic pregnancy: a medical adventure," *European Journal of Obstetrics and Gynecology and Reproductive Biology*, vol.43, no.1, pp.1–7, 1992.
6. O.Birge, M.M.Erkan, E.G.Ozbey, and D.Arslan, "Medical management of an ovarian ectopic pregnancy: a case report," *Journal of Medical Case Reports*, vol.9, no.1, articleno.774, 2015.
7. Speigelberg O. Zuv casuistic der ovarial Schwangerschft. *Arch Gynackol* 1978;13:73–6
8. C heck JH, Chase JS. Ovarian pregnancy with contralateral corpusluteum. *Am J Obstet Gynecol* 1986;54:155–6.
9. G. Scutiero, P. Di Gioia, A. Spada, and P. Greco, "Primary ovarian pregnancy and its management," *Journal of the Society of Laparoendoscopic Surgeons*, vol.16, no.3, pp.492–494, 2012.
10. J. G. Hallat, "Primary ovarian pregnancy: A report of twentyfive cases," *American Journal of Obstetrics and Gynecology*, vol.143, no.1, pp.55–60, 1982.
11. LD. Goyal, R. Tondon, P. Goel, and A. Sehgal, "Ovarain ectopic pregnancy: a 10 years experience and review of literature," *Iranian Journal of Reproductive Medicine*, vol.12, pp.825–830, 2014