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**Case Report**

# Primary ovarian pregnancy: histopathology remains the key to confirming diagnosis setting

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## ABSTRACT

Ectopic pregnancy occurs in 2% of all pregnancies. Primary ovarian pregnancy is a rare entity and accounts for only 0.15-3% of all ectopic gestations. It usually ends with rupture before the end of first trimester. The diagnosis is often made intraoperatively and confirmed histopathologically. A 23 year old female presented with severe hypogastric abdominal pain with no history of amenorrhea. She underwent a laprotomy and a right sided salpingo-oopherectomy and the excised material was sent for histopathological examination. Chorionic villi were seen within the ovarian stroma suggesting the likely possibility of an ovarian pregnancy. Ovarian pregnancy is rare; although awareness of this condition is important for reducing its associated morbidity and mortality. This highlights the importance of histopathology for the accurate diagnosis of this condition.

**Keywords:** Chorionic villi, Ectopic, Histopathology, Ovarian, Ovarian stroma

## INTRODUCTION

Ovarian ectopic pregnancy is a rare variant of ectopic implantation.[1] Incidence ranges from 1 in 2000 to 1 in 60,000 deliveries and accounts for 3% of all ectopic pregnancies.[2,3] The increased incidence is because of wider use of intrauterine devices, ovulatory drugs, invitro fertilization and embryo transfer.[4] One in every nine ectopic pregnancies among intrauterine device users is an ovarian pregnancy.[5,6] Diagnosis is intricate and based on surgical and histopathological observations.[2]

## CASE REPORT

A 23 yr primigravida with no history of amenorrhea presented with severe hypogastric abdominal pain. She had no previous history of abortions, pelvic inflammatory disease or use of any intrauterine device. Relevant clinical investigations were performed; Hb was 6g/dl, peripheral blood smear showed microcytic hypochromic anemia and pregnancy test was positive. On ultrasonography, endometrial cavity was thickened, empty uterus, right sided ovarian rupture and hemoperitoneum.

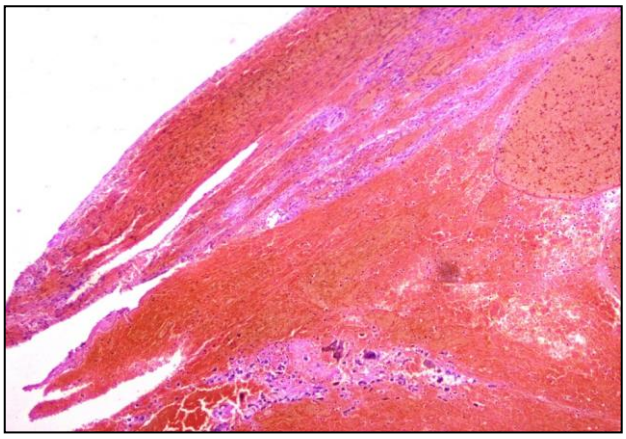

**Figure 1: Ovarian stroma above and trophoblastic tissue below (Low power, 4x).**

Left ovary and tube were normal. A provisional diagnosis of ruptured ectopic pregnancy was rendered with a differential diagnosis of incomplete abortion with ruptured ovarian cyst. Emergency laprotomy was performed which showed enlarged and ruptured right sided ovary along with hemoperitoneum. A unilateral salpingo-oopherectomy was performed and sent for histopathological examination.

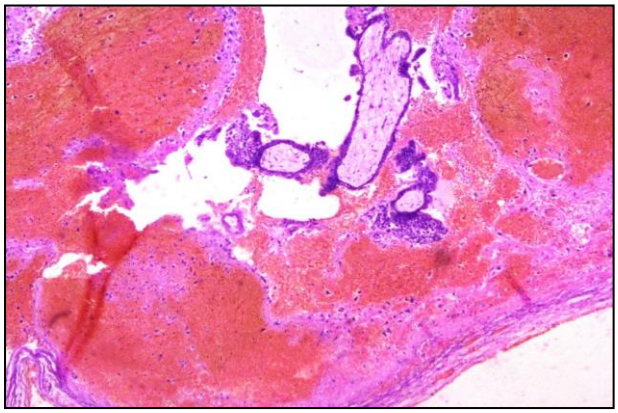

**Figure 2: Chorionic villi (confirms products of conception) in the ovarian tissue (Low power, 4x).**

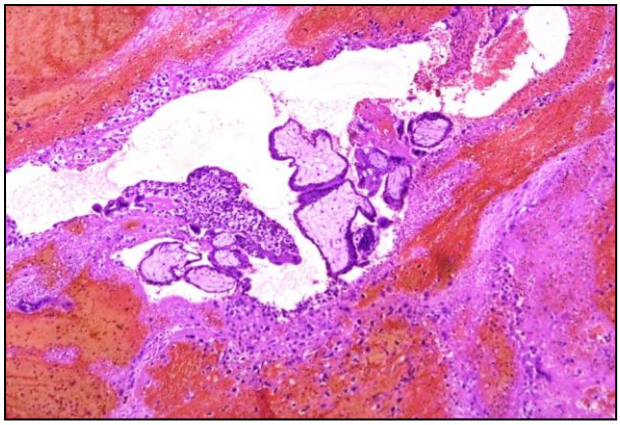

**Figure 3: Trophoblastic tissue (Low power, 4x).**

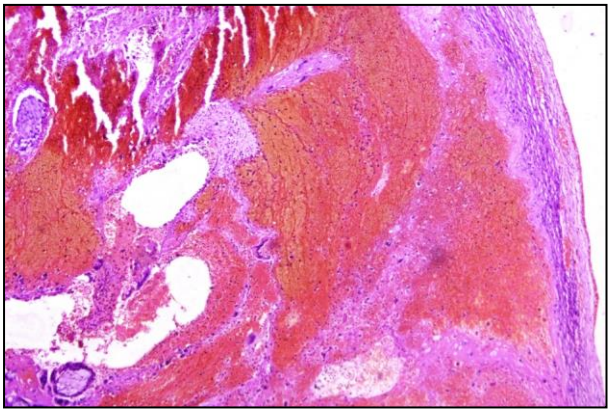

**Figure 4: chorionic villi embedded in the ovarian stroma which confirms ectopic ovarian pregnancy (Low power, 4x).**

***Histopathological findings***

Grossly nodular grayish brown hemorrhagic soft tissue mass measuring 3x2.5x2cms. On c/s areas of hemorrhage was seen. Histopathological examination showed blood clots, chorionic villi, corpus luteum and ovarian stroma. Hence a diagnosis of right sided ovarian pregnancy was given.

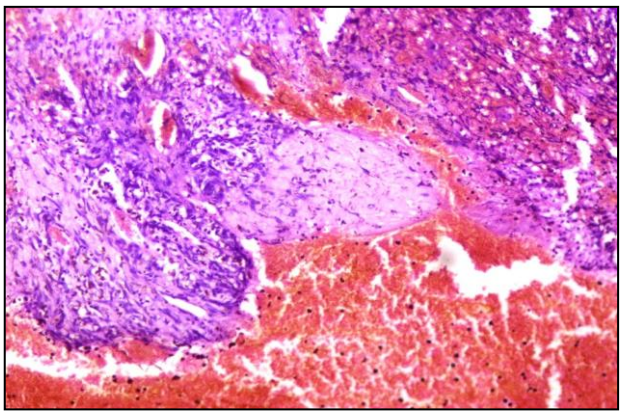

**Figure 5: Fibrosed chorionic villi (10x).**

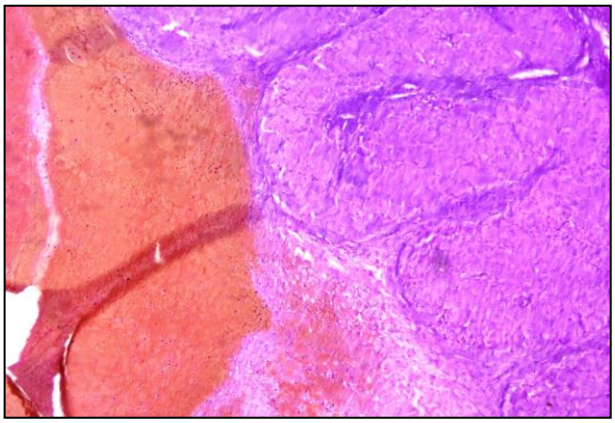

**Figure 6: Corpus luteum of the ovary on the right side of image (Low power, 4x).**

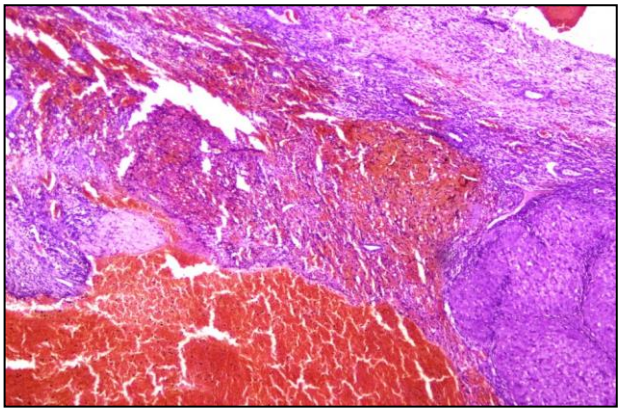

**Figure 7: Fibrosed chorionic villi towards the left lower side and membrane (part of the ovary) seen in the right part of the image (Low power, 4x).**

## DISCUSSION

Ovarian pregnancy is a rare form of ectopic pregnancy. The widespread use of transvaginal ultrasonography and serum beta-hcg assays have improved the preoperative diagnosis of ectopic gestations, however diagnosing ovarian pregnancy remains a challenge and often intraoperatively it may be misdiagnosed as a hemorrhagic ovarian cyst.

Histopathology plays a key role in clinching the diagnosis.[7] In 1882, Speigelberg described certain criteria for diagnosis of ovarian pregnancy.[8]

- An intact ipsilateral tube, clearly separate from the ovary
- Gestational sac occupying the normal position of the ovary.
- Gestational sac connected to the uterus by uteroovarian ligament
- Ovarian tissue in the wall of the gestational sac.

Younger age and high parity along with endometriosis have been suggested as risk factors. Intrauterine contraceptive device usage causes relative increase in the incidence of ovarian pregnancy but, itself doesnot cause ovarian pregnancy.[4] Chronic pelvic pain alone is the most frequent symptom of an ovarian gestation as in our case, also an adnexal mass may be palpable on examination.[9,10] The diagnosis is often made at surgery and requires a confirmation histopathologically. A correct diagnosis during surgery is only possible in 28% of the cases, because it is difficult to differentiate from a hemorrhagic corpus luteum intraoperatively.[11]

## CONCLUSION

Ovarian pregnancy remains a rare entity and a diagnostic challenge. Histopathological examination is mandatory for confirming diagnosis and is the key to effective therapy and outcome.

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