

PUB: 07/2008

Ovarian pregnancy ✓

S. Das, R. Kalyani, V. Lakshmi, M. L. Harendra Kumar

Department of Pathology, Sri Devaraj Urs Medical College, Kolar - 563 101, Karnataka, India

Address for correspondence:

Subhashish Das, Department of Pathology, Sri Devaraj Urs Medical College, Kolar - 563 101, Karnataka, India.

E-mail: lifepathology@rediffmail.com

ABSTRACT

Ovarian pregnancy is a rare form of extrauterine pregnancy contributing <3% of ectopic pregnancies. We report an ovarian pregnancy in a 23-year female.

KEY WORDS: Ovarian pregnancy, ectopic pregnancy, amenorrhea, acute abdomen, laparotomy

INTRODUCTION

Ectopic pregnancy is an important health problem 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. Of late there has been an increase in the incidence of ovarian pregnancies due to better diagnostic modalities such as transvaginal ultrasonography and serum β HCG estimation. 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.

CASE HISTORY

A 23-year primigravida with history of amenorrhea for 6 weeks presented with acute abdomen. 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. Left ovary and tube were normal. A provisional diagnosis of ruptured ectopic pregnancy was made.

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

Pathological findings

Grossly the specimen consisted of ovary and fallopian tube. The ovary measured $6 \times 4 \times 2$ cm³. External surface was hemorrhagic. Cut section showed areas of hemorrhage, grayish yellow corpus luteum, and the gestational sac [Figure 1]. Right tube measured 5 cm in length and cut section was unremarkable.

Histopathological examination (HPE) showed blood clots, chorionic villi, corpus luteum, and ovarian stroma [Figure 2]. The fallopian tube was within the normal histological limits. This finding fulfilled the Spiegelberg's criteria. Hence a diagnosis of right-sided

ovarian pregnancy was made. The patient was discharged after 7 days of uneventful postoperative care.

DISCUSSION

Review of the literature reveals about 157 cases of ovarian pregnancies till date.^[1] The first reported case of ovarian pregnancy was described by Dr. Saint Monnissey in 17th Century. Speigelberg in 1882^[2] 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.

The exact incidence of ovarian pregnancy is unknown because of the large number of asymptomatic patients in whom the conceptus dies and involutes spontaneously. Younger age and high parity along with endometriosis have been suggested as risk factors. The IUCD usage causes relative increase in the incidence of ovarian pregnancy but, IUCD itself does not cause ovarian pregnancy. There have been reports of ovarian pregnancy following IVF, embryo transfer, use of ovulatory drugs, pelvic inflammatory disease, and endometriosis.^[3]

Ovarian pregnancies are classified as primary and secondary.^[4] 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

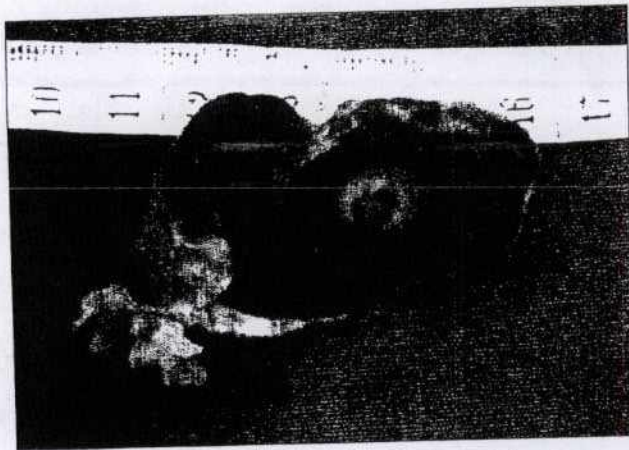


Figure 1: Gross photograph of the ovary showing gestational sac

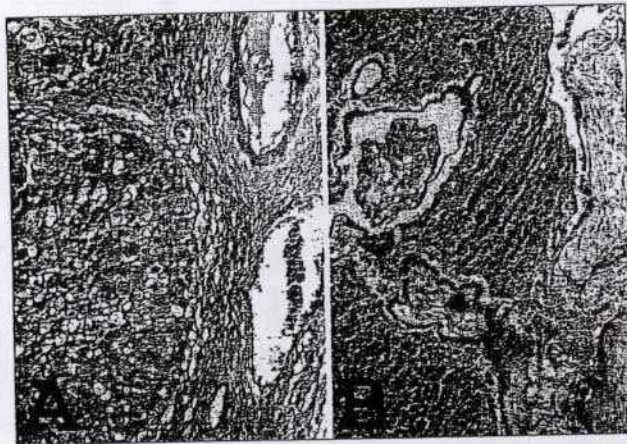


Figure 2: (A and B) Microphotograph of ovary showing corpus luteum, chorionic villi, and trophoblastic tissue (H&E, x400)

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.^[4] 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.^[4]

Macroscopically ovarian pregnancy can take the appearance of an ovarian hematoma, clear ovum and embryonized ovum of

<3 months size. Histology alone can confirm the diagnosis and distinguish the four sub types - intrafollicular, Juxtafollicular, Juxta cortical, and interstitial pregnancy.^[4]

Ovarian pregnancy may be subclinical or may present with acute abdomen. Correct preoperative diagnosis requires high index of clinical suspicion which can be confirmed by ultrasonography and serum β HCG assay.

Review reports reveals that about 91.0% of ovarian pregnancies get terminated in the first trimester, 5.3% in second trimester, and 3.7% in third trimester. Only one case of ovarian pregnancy progressed to full-term delivery has been reported.^[5] Usually postoperative period will be uneventful. In these patients fertility is conserved, recurrence is rare unlike tubal pregnancy, and the future pregnancies are usually intrauterine.^[6]

In our case, the patient is a 28-year primipara who presented with acute abdomen with no suggestive history. Preoperatively the diagnosis was suspected by clinical features, ultrasonography, raised serum β HCG levels, and later confirmed by histopathology.

Hence 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. Bobrow MI, Winkelstein IB. Intrafollicular ovarian pregnancy. *Am J Surg* 1956;91:991-6.
2. Spiegelberg O. Zuv casuistic der ovarial Schwangerschaft. *Arch Gynaecol* 1978;13:73-6.
3. 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.
4. Check JH, Chase JS. Ovarian pregnancy with contralateral corpus luteum. *Am J Obstet Gynecol* 1986;54:155-6.
5. William PC, Machar TC, Kneft JR. Team ovarian pregnancy with delivery of female infant. *Am J Obstet Gynecol* 1982;142:1589-91.
6. Gray CL, Ruffolo EH. Ovarian pregnancy associated with intrauterine contraceptive devices. *Oslet Gynecol* 1978;10:132-4.

Source of Support: Nil, Conflict of Interest: None declared.