Primary Intrafollicular Ovarian Pregnancy: A Case Report

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Intrafollicular ovarian pregnancy is a rare event of ectopic pregnancy with a reported incidence of 1/7000-1/40000 pregnancies. Only 15% of cases of ovarian pregnancy are intrafollicular in origin. In spite of advances in clinical sciences diagnosis of ovarian pregnancy is difficult pre-operatively as it mimics hemorrhagic cyst, luteal cyst, and adnexal mass. The diagnostic criteria for ovarian pregnancy were described by Spiegelberg in 1878. Diagnosis of ovarian pregnancy should be suspected when the hemorrhagic mass is identified near the ovary with normal fallopian tube during surgery of ectopic ovarian pregnancy. The classical management of ruptured ovarian pregnancy is surgical like any other ruptured ectopic pregnancy. The extent of surgery varies according to the amount of tissue destruction. Recent advances in the management of ovarian pregnancy are laparoscopic laser ablation and methotrexate for unruptured ovarian pregnancy.

Keywords: Hemorrhagic cyst, Intrafollicular, Ovarian pregnancy, Spiegelberg criteria

INTRODUCTION

Ectopic pregnancies are most common seen in fallopian tubes. Ovarian pregnancy is an uncommon presentation of ectopic gestation; 0.5-1% of all ectopic pregnancies. Only 15% of cases of ovarian pregnancy are intrafollicular in origin. Pelvic pain, amenorrhea, and vaginal bleeding are the foremost classical symptoms found in these cases. Abdominal pain is the most common presenting complaint, but the severity and nature of the pain varies widely. Ovarian pregnancies could be misdiagnosed because they are mostly and easily confused with a ruptured corpus luteum. Here, we present a case of ovarian pregnancy which presented as hemorrhagic cyst and on suspicion of ovarian pregnancy was surgically explored and later diagnosed histopathologically as intrafollicular ovarian pregnancy.

CASE REPORT

An 18-year-old lady with 8 weeks amenorrhea with complaints of lower abdominal pain since 5-6 days had been referred to our hospital with ultrasound report suggestive of bulky left ovary and with evidence of intra-abdominal collection.

On examination, blood pressure was 100/70 mm Hg, and her pulse rate was 103/min. She was pale, per abdominal examination revealed tenderness in the lower abdomen with no guarding or rigidity. On per vaginal examination no vaginal bleeding or discharge, normal anteverted soft uterus with marked cervical movement tenderness. Urine pregnancy test was positive. Ultrasound report of our hospital showed mixed echogenic 4.4 cm × 5.5 cm mass in left adnexa with the moderate collection in Pouch of Douglas and right ovary normal. Culdocentesis revealed frank blood, which failed to clot. Hemoglobin was 8.5 g%, blood group was B positive. Rest investigations were within normal limits.

Histopathology showed sections containing ovarian tissue with blood clots admixed with chorionic villi, trophoblasts, and sheets of deciduas (Figures 1 and 2).

On exploratory laparotomy, hemoperitoneum was present 300 ml of altered colored blood was removed. Uterus, right fallopian tube, right ovary, and left fallopian tube were normal, a 5 cm × 5 cm mass was seen at left ovary and was bleeding from the edges of the mass (Figure 3). Wedge resection of the mass was performed (Figure 4) and the mass sent for histopathological examination. The remaining ovary was reconstructed with vicryl 3-0. Provisional diagnosis of ruptured ovarian pregnancy was made.
In this case,
1. The tube including the fimbriae was intact and separate from the ovary
2. The gestational sac was definitely occupied in the normal position of the ovary
3. The sac was connected to the uterus by the ovarian ligament
4. The unequivocal ovarian tissue was demonstrated in the wall of the sac.

All the Spiegelberg criteria were satisfied and a diagnosis of primary intrafollicular ovarian pregnancy was made.3

**DISCUSSION**

Ovarian pregnancy may be an involvement of ovary following tubal abortion or as one of primarily ovarian origin.2 Tan and Yeo4 proposed that primary ovarian pregnancy could be classified histologically into two distinct forms, intrafollicular and extrafollicular. Intrafollicular seems to be extremely rare. Two mechanisms have been proposed to explain ovarian implantation. One theory suggests that fertilization occurs normally and implantation on the ovary follows reflux of the conceptus from the tube.2 According to the second theory various disturbances in ovum release, are responsible for ovarian implantation.4 Alternately, fertilization of an extruded ovum, which remains adherent to the ovarian stigma may occur, followed by implantation into its own ruptured follicle or into other parts of the ovarian tissue. The second theory explains intrafollicular ovarian pregnancy.6,8

The patients usually present early in gestation as the ovary can accommodate the gestation for a short duration as the tunica albuginea is weakened by the invading cytotrophoblast. Due to the increased vascularity of the ovarian tissue, it is common to sustain massive hemorrhage with circulatory collapse.9 Management is mainly surgical as most of the patients present with profuse bleeding and shock and diagnosis is suspected during surgery.10
As reported cases in the literature are most of that of young age group like in the present case, the treatment option is that of wedge resection of ovary like it is done in present case. There are also medical means of management like use of methotrexate, but it may not always be feasible. It is the line of management if there was persistent trophoblastic tissue even after surgical resection.\textsuperscript{11,12}

CONCLUSION

Ovarian pregnancy is a rare variant of ectopic pregnancy. The diagnosis of ovarian pregnancy is difficult pre-operatively as it mimics hemorrhagic cyst, luteal cyst and an adnexal mass.

Whatever approach is used in the treatment of ovarian pregnancy, the conservation of ovarian tissue is essential given that most of such cases are infertile. The preferred therapeutic procedure is partial ovariectomy including the site of ectopic implantation or ovarian cystectomy. It seems that despite the increased vascularity of the tissue, the risk of an uncontrollable hemorrhage is minimal, and the patients usually exhibit an uneventful recovery.

There are various postulates available in the literature regarding the primary ovarian pregnancy \textit{viz.} obstructed ovulation, malfunction from new salpingitis, favorable surface phenomenon because of endometriosis, use of intrauterine contraceptive device and also likelihood of chance occurrence.\textsuperscript{10,11}

Since in our case, we could not find the exact and apparent cause of the ovarian pregnancy; so there is high probability of a chance occurrence.

In our case, a partial left ovariectomy was performed, removing the section of the ovary containing the bruised and hemorrhagic ovarian pregnancy. The patient experienced an uneventful post-operative course.

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