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Case Report

Primary ovarian ectopic pregnancy: A rare condition (Case Series)

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Abstract

Primary ovarian pregnancy is one of the rarest varieties of ectopic pregnancies and is usually seen in young highly fertile multiparous women using intra uterine devices. Primary ovarian pregnancy accounts for 0.15–3% of all ectopic gestations. Patients frequently present with lower abdominal pain and menstrual irregularities. Preoperative diagnosis is challenging in these patients. Awareness about primary ovarian ectopic pregnancy is very important as delay in the diagnosis of this condition may result in certain complications including rupture, operative problems and secondary implantation. Here, we are presenting three cases of primary ovarian ectopic pregnancies presented with acute abdominal pain and were diagnosed as a case of a ruptured ectopic pregnancy. All these cases were confirmed intra-operatively and histopathologically as primary ovarian pregnancy. All the cases were successfully managed by surgery.

Keywords: Primary, ovarian pregnancy, ectopic pregnancy.

1. Introduction

Ectopic Pregnancy is an important health problem and accounts for 10% of all maternal mortality. [1] Primary ovarian pregnancy is even rarer accounting for 0.15–3% of all ectopic gestations. [2,3] The clinical appearance varies. It is known to mimic an ovarian tumor or a tubal ectopic pregnancy [2]. They are known to rupture very early before the completion of the first trimester. [4] The diagnosis of an ovarian ectopic pregnancy is seldom made before surgery. With the advent of transvaginal sonography more cases of unruptured ovarian pregnancies are being diagnosed nowadays. [2]

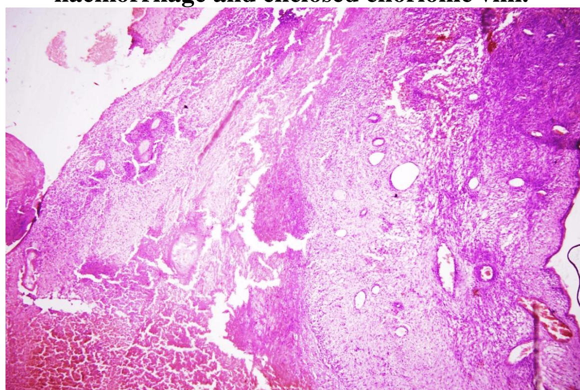
2. Case Series

2.1 Case -1

Twenty years old, Primigravida at 9+3 weeks period of gestation presented to Gynaecology casualty with the chief complaints of the severe lower abdominal pain of sudden onset since one day. There was a history of admission at 5+3 weeks of gestation, at that time patient was diagnosed as a case of unruptured ectopic pregnancy and given a single dose of injection methotrexate at βhcg value of 10402 mIU/ml and the patient was followed up on βhcg value which was showing a falling trend. Last βhcg value at the time of discharge was 1379 mIU/ml (day 22 of injection methotrexate). The patient came on day 26 of injection methotrexate. On examination vitals were stable and mild pallor was present. Abdominal examination revealed mild tenderness in the lower abdomen and on per-vaginal examination cervical motion tenderness was present. Uterus anteverted, normal size, fullness was present in left fornix and tenderness present in bilateral fornices. Routine hematological and biochemical tests were within normal limits. Ruptured ectopic pregnancy was kept as a provisional diagnosis. Trans-abdominal ultrasound was

showing minimal free fluid in the pouch of Douglas, no intrauterine sac, left adnexa was showing 5.9×4.9 cm heterogeneous lesion with peripheral vascularity & central anechoic area and left ovary was not seen separately. The decision of laparotomy was taken in view of ruptured tubal ectopic pregnancy. On laprotomy100 cc of hemoperitoneum was present, bilateral tubes appeared normal, left ovary was enlarged and hemorrhagic and right ovary was within normal limit. Left ovarian tissue (superficially) along with clots adherent to it sent for histopathological examination and left ovarian reconstruction was done. On histopathological examination, extensive areas of hemorrhage and scattered chorionic villi with inflamed decidua was found within ovarian stroma suggestive of ovarian ectopic pregnancy. (Figure 1)

Figure 1: Ovarian parenchyma with central area of haemorrhage and enclosed chorionic villi.

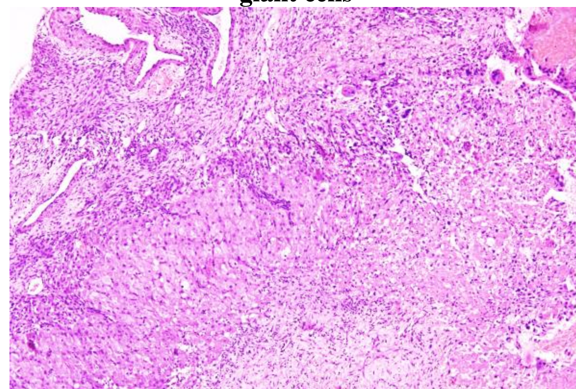


Histopathology of ovary showed corpus luteum within ovarian stroma along with extensive areas of hemorrhage and scattered trophoblastic cells suggestive of ovarian ectopic pregnancy.

2.2 Case -2

Twenty-eight-year-old female, G3P2L2 (last child birth 2yrs back) presented to Gynaecology casualty with the chief complaints of 1&1/2 months of amenorrhoea with the severe lower abdominal pain of sudden onset since 6 hrs and fainting attack. On general physical examination there was a mild pallor and tachycardia of around 110 beats /min, rest within normal limit. Abdominal examination revealed mild tenderness and fullness in the lower abdomen. Vaginal examination showed cervical motion tenderness, anteverted bulky uterus, fullness in right fornix and no tenderness in bilateral fornices. Routine hematological and biochemical tests were within normal limits and the βhcg value was 1370 mIU/ml on the same day. Ruptured ectopic pregnancy was kept as a provisional diagnosis. Trans-abdominal ultrasound revealed minimal free fluid in the pouch of Douglas, empty uterine cavity, a heterogeneous lesion in the right adnexa measuring 3.2×2.8cm with peripheral vascularity & central anechoic area and right ovary was not seen separately. Patient planned for laparotomy in view of eciduas tubal ectopic pregnancy. Per-operatively 1200 cc hemoperitoneum was found, bilateral tubes were appeared normal, right ovary was enlarged, hemorrhagic and active bleeding was present. The left ovary was normal looking. Right ovarian tissue (superficially) sent for histopathological examination and right ovarian reconstruction was done. Histopathological examination showed corpus luteum within ovarian stroma along with extensive areas of hemorrhage and scattered trophoblastic cells suggestive of ovarian ectopic pregnancy. (Figure 2)

Figure 2: Ovary with scattered synctiotrophoblastic giant cells



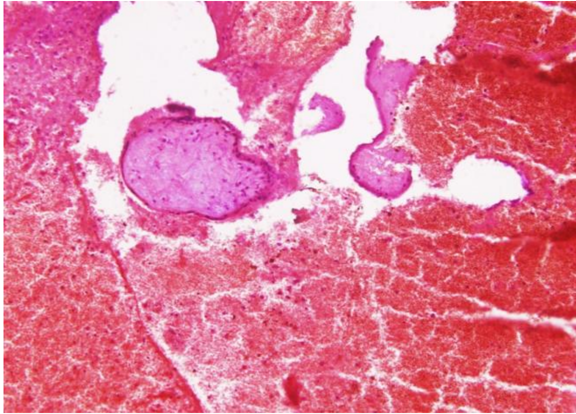
Histopathology of ovary showed extensive areas of hemorrhage and scattered chorionic villi with inflamed eciduas within ovarian stroma suggestive of ovarian ectopic pregnancy.

2.3 Case-3

Twenty-nine-year-old female, G3P1L1A1 presented to Gynecology casualty with the chief complaints of two months of amenorrhoea, the severe lower abdominal pain of sudden onset since 2 days, fainting attack and vomiting. There was a history of MTP pill intake followed by bleeding per vagina since two days. On general physical examination tachycardia was present (PR-128/min), BP was 90/60 mmHg and moderate pallor was present. Abdominal examination revealed free fluid, tenderness, guarding and rigidity in the lower abdomen. Vaginal examination showed cervical motion tenderness, retroverted normal size uterus, mass in the right fornix with the tenderness in the bilateral fornices and free fluid in the pouch of Douglas. Routine hematological and biochemical tests were within normal limits and βhcg value on admission is 636m IU/ml. Ruptured ectopic pregnancy was kept as a provisional diagnosis and patient planned for laparotomy. Per-operatively 500 cc hemoperitoneum was present, bilateral tubes were appeared normal, right ovary was enlarged and approx 0.5 × 1cm rent was present which was bleeding actively and left ovary was normal looking. Right ovarian tissue was sent for histopathological examination. Right ovarian reconstruction was done. On microscopic examination, the sections showed hemorrhagic corpus luteum within ovarian stroma along with the presence of

chorionic villi suggestive of ovarian ectopic pregnancy (Figure 3). The βhcg value on day 3 of laparotomy was 258 mIU/ml.

Figure 3: Hyalinised chorionic villi surrounded by blood clot within ovarian stroma



Histopathology of ovary showing hemorrhagic corpus luteum within ovarian stroma along with the presence of chorionic villi surrounded by blood clot suggestive of ovarian ectopic pregnancy.

3. Discussion

Primary ovarian pregnancy is one of the rarest varieties of the extra-uterine pregnancy. [2] The initial diagnosis is always made on the operation theater table with few exceptions and the final diagnosis is made only after histopathological examination on the basis of the four Spielberg's criteria. [1,5] The causes of primary ovarian pregnancy remains obscure.

Many different hypotheses were given and comprised of malfunction of the tubes, interferences in the release of the ovum from the ruptured follicle, inflammatory thickening of the tunica albuginea and empty follicle syndrome. Risk factors for ovarian pregnancy are obstructed ovulation, malfunction of tubes by the previous salpingitis, pelvic inflammatory diseases, intra uterine devices, endometriosis, tuberculosis and assisted reproductive techniques. [1] In the users of intra uterine contraceptive devices ovarian pregnancy is believed to occur more frequently as intra uterine devices prevent implantation in the uterus and fallopian tubes by 99.5% and 95% respectively showed by some studies. [6,7]

The symptomatology and examination findings of ovarian pregnancy are similar to the tubal ectopic pregnancy. [2] Conditions most commonly confused with this condition are a chocolate cyst, ruptured hemorrhagic corpus luteum cyst, hemorrhagic ovarian cyst, ruptured endometrioma, ovarian malignancy, ovarian torsion and tubal ectopic pregnancy. In case of an ovarian ectopic pregnancy, rupture is the usual rule in the first trimester, [4] but in some rare cases, the pregnancy may advance up to full term pregnancy.

Diagnosis of ovarian pregnancy is made by a presence of a cyst with an echogenic ring on the outer side of cyst detected on the ultrasound within the ovary. [7] Although surgery remains the best modality for the differential diagnosis and the management of an ovarian pregnancy.

Treatment consists of a methotrexate single dose protocol or a conservative surgery in a hemodynamically stable patient. Most commonly the surgical treatment consists of a partial ovariectomy or a wedge resection and oophorectomy by either laparoscopy or laparotomy. [8] Pregnancy outcomes after surgical treatment of ovarian pregnancy are reasonable and there is a good rate of successful pregnancies and very low rate of infertility and ectopic pregnancy as shown in a review of the literature. [8] Recurrent ovarian pregnancy has not been reported in contrast to approximately 15% incidence of recurrent tubal pregnancy.

4. Conclusion

Primary ovarian ectopic pregnancy is a rare condition but it is associated with high morbidity and mortality. The diagnosis of this condition is very difficult, therefore it remains a challenge for the practicing clinicians and awareness among surgeons and gynecologists is necessary. Now, with the ultrasonographic advances, diagnosis can be made early, leading to a conservative treatment and surgery.

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