Case Report

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Pathology Section

Ruptured Ovarian Ectopic Pregnancy: A Case Report

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ABSTRACT

Ovarian pregnancy is a rare form of ectopic pregnancy. It accounts for 0.5-3% of all non-tubal ectopics and the incidence ranges from 1 in 7000 to 1 in 40,000 deliveries. Review of literature suggests its possible association with risk factors like Intrauterine Contraceptive Device (IUCD) use, endometriosis, pelvic inflammatory disease, previous ectopics, previous tubal surgery, tubal sterilisation, use of ovulation induction agents and the use of Assisted Reproductive Techniques (ARTs). Clinical and ultrasound picture often mimics tubal ectopic pregnancy, haemorrhagic ovarian cyst and corpus luteal cyst, thus posing a challenge to the gynaecologist or surgeon. Accurate diagnosis can be made only intraoperatively using Spiegelberg's criteria followed by histopathological confirmation. Treatment includes wedge resection of affected ovarian tissue followed by ovarian reconstruction or salpingo-oophorectomy. The author hereby reports A case of a young second gravida with previous full-term normal vaginal delivery who presented with amenorrhoea along with hypogastric pain and a syncopal attack. Transvaginal Sonography (TVS) revealed left-sided ruptured ectopic gestation with massive haemoperitoneum. During laparotomy, left-sided ruptured ectopic pregnancy was diagnosed and wedge resection of the ovary followed by ovarian reconstruction was done. Histopathological examination confirmed it as an ovarian ectopic pregnancy. The incidence of ovarian pregnancy is on the rise with an increase in the use of ARTs and hence it is imperative to keep a high-suspicion index and consider it in the differential diagnosis of acute lower abdominal pain in all women of childbearing age who present to the emergency department. High-resolution transvaginal sonography may lead to earlier and precise detection of ovarian pregnancies and decrease the risk of complications like rupture, secondary implantation, haemorrhagic shock and maternal mortality.

Keywords: Extrauterine gestation, Laparotomy, Partial ovariectomy

CASE REPORT

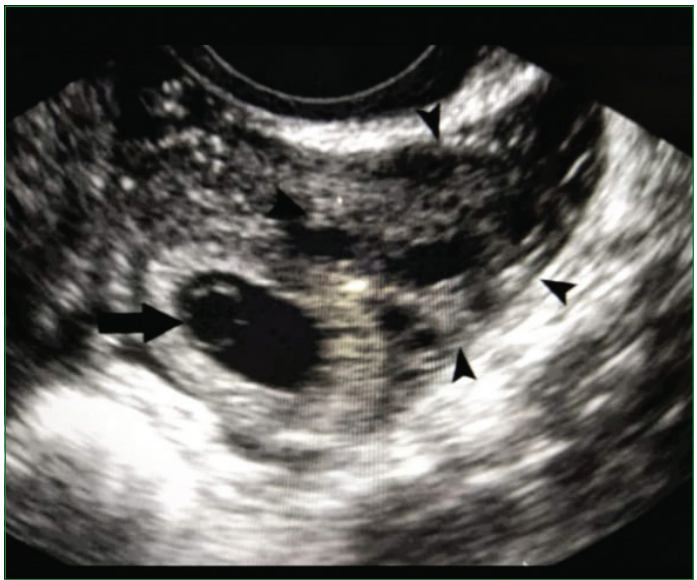
A 20-year-old (Gravida 2 Para 1) female came to gynaecology emergency with history of amenorrhoea of 6.5 weeks and pain in the hypogastrium for one week. She had a syncopal attack just before admission.

Her past obstetric history involved a full term normal vaginal delivery with birth of a healthy male child six months back. In present pregnancy she conceived spontaneously. There was no history of irregular menstrual bleeding or use of any contraceptive device. No history of any medical illness, abdominal surgeries, pelvic inflammatory disease or tuberculosis was noted. There was no significant family history.

On general examination, the patient had pallor, tachycardia with a pulse rate of 102/minute and BP of 100/60 mmHg. On per abdomen examination, there was guarding with mild tenderness in the left iliac fossa. Per speculum examination revealed a healthy cervix and vagina with bloody discharge coming through the external os. Per vaginum examination revealed a normal sized and anteverted uterus. Left sided fullness was noted with Cervical Excitement Test (CET) positive.

Her urine pregnancy test was positive. On investigation, her haemoglobin (Hb) was 7 gm/dL, total leukocyte count was 10,500/cumm, platelet count was 2 lac/cumm and rest of the investigations were within normal limits.

Ultrasonography pelvis (TVS) report showed normal sized anteverted uterus with an endometrial thickness of 13 mm. No intrauterine gestational sac was seen. There was a cystic structure in the left adnexa with yolk sac complex within showing increased peripheral vascularity in close proximity to the left ovary suggestive of ectopic gestational sac. There was a 6.0x4.0 cm mixed echogenecity mass lesion with cystic and hypoechoic areas adjacent to this cystic structure without any vascularity suggestive of haematoma. Free fluid with internal echoes was noted in the pelvis and Morrisons pouch. Sonographic opinion of left sided ruptured ectopic gestation with haemoperitoneum was given [Table/Fig-1].



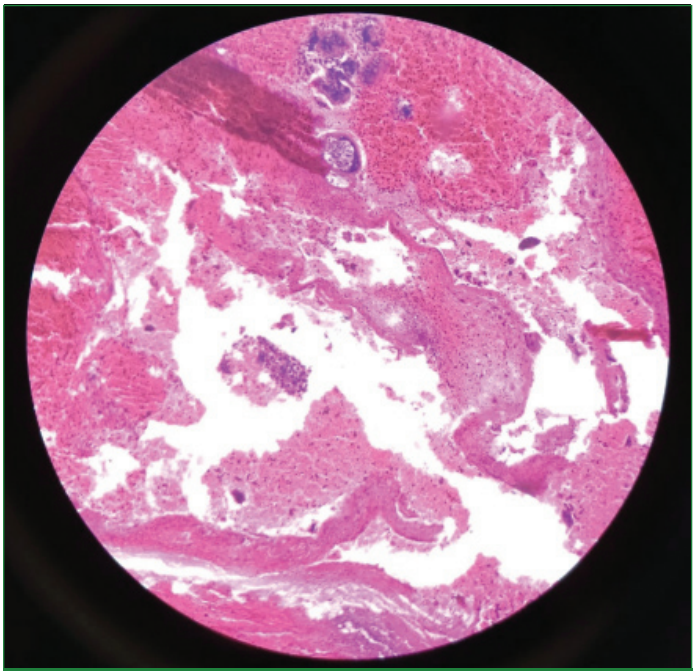
[Table/Fig-1]: TVS showing cystic structure in the left adnexa with yolk sac complex (big arrow) in close proximity to the left ovary (arrow heads).

Provisional diagnosis was made as left sided ruptured ectopic pregnancy. Blood availability was confirmed. Decision for laparotomy was taken. Laparotomic exploration revealed mildly bulky uterus and bilateral normal fallopian tubes with no obvious rupture of left fallopian tube. The right ovary was normal while there was a rent of 1.0x1.0 cm in the left ovary with active bleeding. There was haemoperitoneum of approximately 700 mL with large clots and total blood loss was estimated to be approximately 1.5 litres. Provisional diagnosis of left sided ruptured ovarian ectopic pregnancy was made based upon

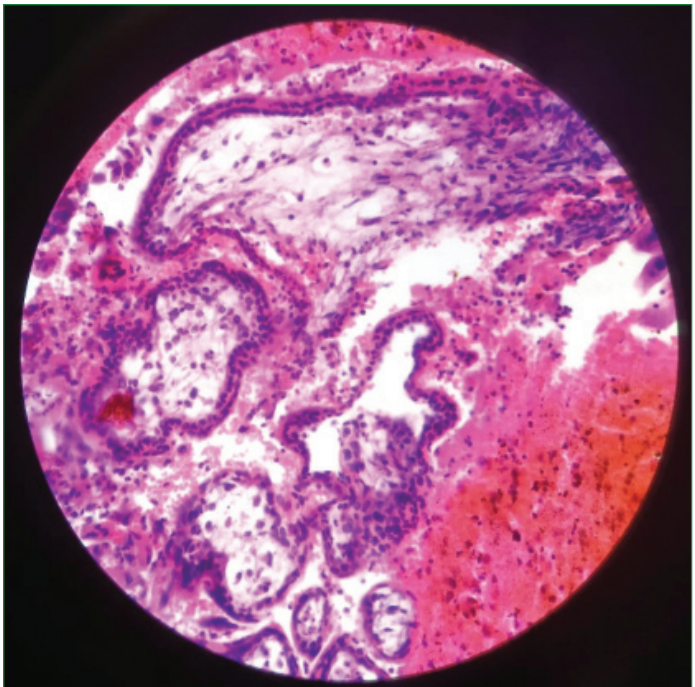
ultrasound and intraoperative findings. Left ovarian wedge resection was done followed by ovarian reconstruction and sample was sent for histopathology. Total two units of blood transfusion was given intra and post-operatively.

Patient had an uneventful post-operative course and was discharged on day seven of surgery. Patient was lost to follow-up thereafter.

Grossly, gray brown haemorrhagic tissue was received in multiple pieces measuring 3.0x2.0 cm (entire tissue was put for processing hence picture cannot be furnished). On histopathological examination, the sections revealed ovarian tissue enclosing chorionic villi surrounded by syncytiotrophoblasts and cytotrophoblasts along with areas of haemorrhage and vascular congestion. The surrounding ovary showed congestion of the blood vessels [Table/Fig-2a-c].

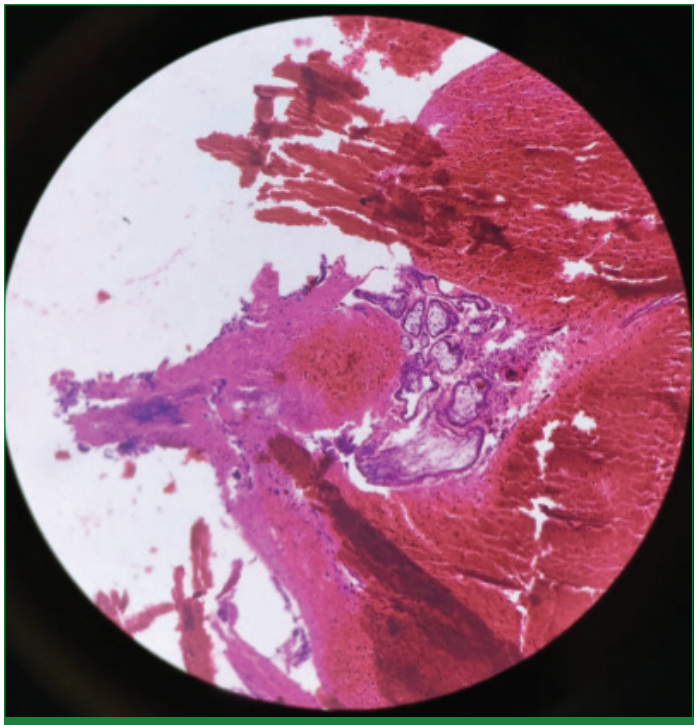


[Table/Fig-2a]: Histopathological section showing chorionic villi (confirms products of conception) in the ovarian tissue (H&E, X40).



[Table/Fig-2b]: Histopathological section showing chorionic villi embedded in the ovarian stroma which confirms ovarian ectopic pregnancy (H&E, X100).

Thus, the intraoperative findings and the histopathology examination satisfied the criteria for ovarian pregnancy as described by Spiegelberg.



[Table/Fig-2c]: Histopatholoigical section showing chorionic villi in haemorrhagic ovarian stroma (H&E, X400).

DISCUSSION

Spiegelberg described in 1878 four criteria for the diagnosis of ovarian pregnancy: the tube on the involved site should be intact, the gestational sac has to be located in the ovary, the ectopic pregnancy has to be connected to the uterus by the utero-ovarian ligament and ovarian tissue in the wall of the gestational sac should be proven on histopathology [1]. The present case fulfilled all these criteria. Macroscopically, ovarian pregnancy can be present in different forms such as an ovarian haematoma, clear ovum, embryonised ovum <3 months and placenta with fetus aged >3 months. Only histopathology can help in confirming the final diagnosis and distinguishing the four forms: intrafollicular, juxtafollicular, juxtacortical and interstitial pregnancy [2]. This case was interstitial ovarian pregnancy.

In literature incidence of ovarian pregnancy is 0.001-0.013% of normal pregnancies accounting for nearly 3% of all the ectopic gestations [3]. This condition seems to be strongly associated with IUCDs [4]. Presence of IUCD leads to changes in prostaglandin synthesis that increases the tubal motility, leading to implantation in the ovary itself [3]. The present case however did not have history of any IUCD insertion. Other risk factors are ARTs, endometriosis and pelvic inflammatory disease; however none of these risk factors were present in this case. Ovarian ectopic gestations are mostly associated with high parity, young age and ARTs [5]. Ovarian ectopic pregnancies can be classified as primary and secondary. Primary ovarian ectopic pregnancy results from ovulatory dysfunction whereas secondary ovarian ectopic pregnancy results from secondary implantation in ovarian stromal tissue after tubal abortion or perforation [3,4]. Common clinical features are lower abdominal pain, amenorrhoea with or without per vaginum bleeding.

Ovarian pregnancy must be differentiated from tubal pregnancy, haemorrhagic ovarian cyst and ruptured corpus luteal cyst [5]. Rupture in the first trimester is the usual rule in an ovarian ectopic pregnancy [6]. The introduction of high-resolution transvaginal probes has changed the management of ectopic pregnancy pregnancies [7]. Adjacent to ovary there is presence of gestational sac which has been described as a double echogenic ring within a hypoechoic adnexal mass and the presence of ovarian cortex which included coprus luteum/follicles around the mass because of the increased peripheral vascularity around the sac [8,9].

Volume acquisition and 3D rendering of the ovary reveals a small hypoechoic mass bulging from the ovarian cortex surrounded by a thick hyperechoic ring consistent with "bagel" appearance. Corpus luteal cyst usually has thinner walls which are less echogenic than the endometrium whereas haemorrhagic cyst has fine internal lace like pattern [9,10].

Several surgical techniques have been described: ovarian wedge resection, enucleation of the pregnancy from the ovary, corpus luteum cystectomy for the trophoblast, trophoblast curettage with coagulation or haemostatic suture of the bed with total ovarian conservation. In rare cases oophorectomy may be necessary [11]. The present case was managed with wedge resection of the ovary followed by ovarian reconstruction. To prevent tissue loss of ovary, many treatments have been introduced in recent years which are conservative in nature. they help in prevention of pelvic adhesions and preserve the fertility. These techniques include administration of mifepristone, parenteral prostaglandin F2α and methotrexate treatment for non ruptured cases detected with laproscopy [12]. After surgical treatment of an ovarian pregnancy, the outcome of a subsequent pregnancy is favourable; there is a high chance of successful subsequent pregnancy and a low incidence of subsequent ectopic pregnancy or of infertility [13,14].

CONCLUSION(S)

The incidence of ovarian ectopic pregnancy has been steadily increasing, likely related to better identification of the presenting symptoms as well as the use of improved transvaginal ultrasound technology. But making pre-operative diagnosis of ovarian ectopic pregnancy is still challenging due to its similar appearance to ruptured corpus luteal cyst, haemorrhagic ovarian cyst and tubal ectopic pregnancy. Laparoscopy is considered as the gold standard for definitive diagnosis with histopathologic confirmation. Management is essentially surgical and early diagnosis and intervention can prevent mortality. Even though ovarian ectopic pregnancy is commonly managed surgically, still no problem is noticed in case of subsequent future pregnancy.

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