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Case Report

Successful management of ruptured ovarian ectopic pregnancy: a case report

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ABSTRACT

Ovarian pregnancy is one of the rarest sites of non-tubal ectopic pregnancy. It has a prevalence of 0.5-3.5% in all ectopic pregnancies. It usually presents with rupture in the first trimester, a potential life-threatening condition. A preoperative diagnosis is difficult to make. Majority of the cases are diagnosed intraoperatively followed by confirmation on histopathology. We presented a case of 32-year-old woman with previous two normal deliveries at 7 weeks gestation who presented with abdominal pain and spotting. She was diagnosed with ruptured ovarian ectopic pregnancy on laparotomy and salpingo-oophorectomy was done. Later, ovarian pregnancy was confirmed on histopathology. The incidence of ovarian ectopic pregnancy is increasing and it should be considered as a differential diagnosis in women of childbearing age coming to emergency department with abdominal pain. It is important to keep a high index of suspicion for its diagnosis. High resolution transvaginal ultrasonography can help in earlier detection and preventing some of its complications like rupture, shock and maternal mortality.

Keywords: Ovarian ectopic pregnancy, Hemoperitoneum, Salpingo-oophorectomy, Adnexal mass

INTRODUCTION

Ectopic pregnancy is a leading cause of maternal morbidity and mortality worldwide complicating 1-2% of all pregnancies. Ovarian ectopic pregnancy is a rare type with an incidence of 0.5%-3.5% gradually increasing over years.¹ It has been reported with one in every nine ectopic pregnancies with an IUCD *in situ*.²

Ovarian ectopic pregnancy usually ends with rupture in the first trimester causing massive internal haemorrhage.³ Pre-operative diagnosis is difficult as they may mimic corpus luteal cyst, haemorrhagic cyst or an endometriotic cyst of ovary and most of the cases are diagnosed intraoperatively.

Surgical management is the mainstay and ovariectomy is usually performed. For small lesions without significant bleeding can be managed with ovarian wedge resection or cystectomy. For unruptured ovarian ectopic pregnancy,

methotrexate has been a successful modality of treatment. We hereby reported a case of ruptured ovarian ectopic pregnancy diagnosed intraoperatively and confirmed on histopathological examination.

CASE REPORT

The patient was a 32-year-old pregnant woman G3P2L2 who presented to the emergency department with abdominal pain and spotting at 7 weeks of gestation based on her last menstrual period. She had two vaginal deliveries at term without any complications. There was no history of any contraception use. Her past medical history, drug history and family history were otherwise insignificant.

On physical examination, she had tachycardia with pulse of 120 bpm and blood pressure was 90/60 mm of Hg. Her abdomen was soft without tenderness, rebound tenderness,

guarding or rigidity. Minimal bleeding was present on per speculum examination. On per vaginal examination, cervical motion tenderness was present. Uterus was normal in size, there was fullness in left adnexa. Culdocentesis was performed which was positive.

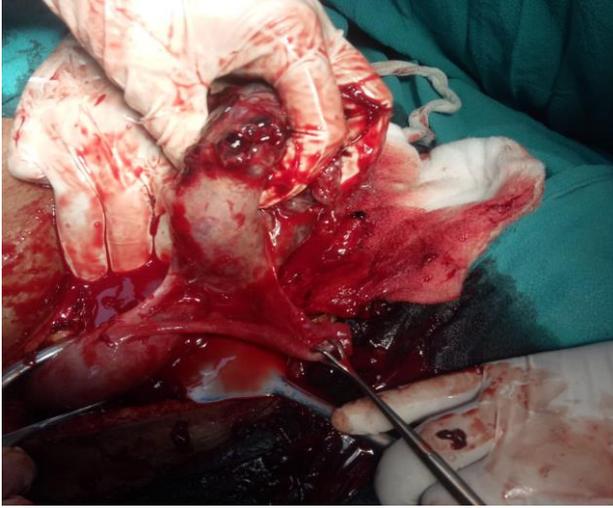


Figure 1: Intraoperative image showing ruptured primary ovarian ectopic pregnancy.

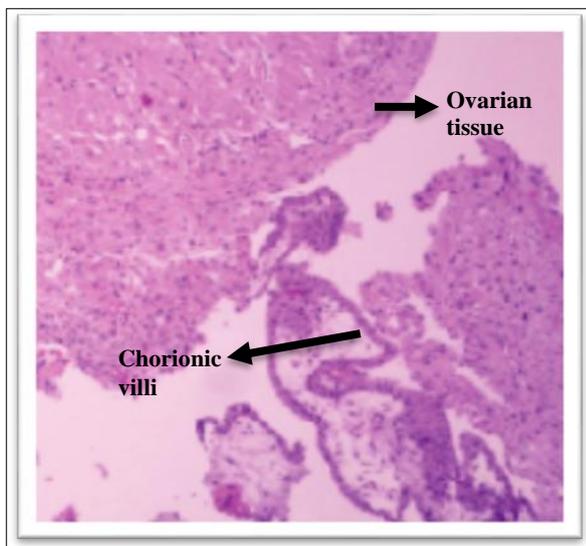


Figure 2: Histopathological photomicrograph showing ovarian tissue with chorionic villi.

On transvaginal ultrasound, there was no evidence of intrauterine pregnancy. There was a heterogenous echogenic lesion 7×4.5 cm in left adnexa with free fluid in pelvis and hepatorenal pouch. Her notable laboratory finding was β -human chorionic gonadotropin (HCG) which was 56,596 mIU/ml.

The patient was diagnosed with ruptured ectopic pregnancy and exploratory laparotomy was planned. There was a jumbled up mass 10×10 cm involving whole of the left ovary with normal left fallopian tube pointing towards

ruptured primary ovarian ectopic pregnancy (Figure 1). Right ovary and right tube were normal. Around 300 ml of blood and 200 grams of clots were evacuated. Left salpingo-oophorectomy was done.

The diagnosis of ruptured ovarian pregnancy was confirmed on histopathological examination with an intact tube and ovarian tissue present in the sac wall (Figure 2). The patient was followed up for one month, β -hcg decreased gradually and there were no other complications.

DISCUSSION

Primary ovarian pregnancy is one of the rarest type of ectopic pregnancies. Excluding a few cases in which preoperative diagnosis is made, most of these cases are diagnosed intraoperatively and confirmed by histopathological examination on the basis of Spiegelberg criteria.⁴

The cause of ovarian ectopic pregnancy is still uncertain. But there are a few hypotheses regarding its causation which are, thickening of the tunica albuginea, defect in the fallopian tube and defect in the expulsion of the ovum from the ruptured follicle. Recently, IUCD has also been reported to be a known causative factor.⁵ Empty follicle syndrome in which no oocytes are expelled from the ruptured follicle in spite of normal follicular development and normal estradiol levels, usually seen in ovarian hyperstimulation syndrome can also be a cause of ovarian ectopic pregnancy.⁶ In our case, as the patient did not have any high risk factor like ART, IUCD or PID, defect in ovum extrusion resulting in intrafollicular fertilization can be a possible cause.

There were controversies regarding the risk of ovarian ectopic pregnancy with parity. Some studies had reported higher incidence with higher parity while some other studies had reported otherwise. Ehsan et al in his study reported a mean parity of 2.66 in patients with ovarian ectopic pregnancy which was in association with our study.⁷

In most of the studies done previously, the mean gestational age at diagnosis was 7 weeks which was also similar in our case.⁸ However, Huang et al reported a case of ovarian ectopic pregnancy diagnosed at 36 weeks of gestation with delivery of fetus by laparotomy.⁹ There were no reported recurrences in ovarian ectopic pregnancy in contrast to tubal ectopic pregnancies which had a recurrence rate of 15%.¹⁰

Primary ovarian ectopic pregnancy needed to be differentiated from corpus luteal cyst and haemorrhagic cyst.¹¹ On TVS, ovarian ectopic pregnancy had a gestational sac adjacent to the ovary which looks like a double echogenic ring in a hypoechoic adnexal mass and ovarian cortex identified as follicles around the mass.¹² Corpus luteal cyst has thinner walls which are less

echogenic and haemorrhagic cyst has fine interlacing pattern.¹³

Patients present with abdominal pain and bleeding which are nonspecific symptoms. Hence, the cornerstone to timely diagnosis and appropriate management depends on the rapidity with which the patient seeks medical care. In our case also, prompt detection and surgical intervention without any delay saved the patient's life.

Nowadays, there is a shift in focus on pre-operative diagnosis and medical management. Phupong et al reported that high β -hcg levels along with TVS can aid in diagnosis of ovarian ectopic pregnancy pre-operatively.¹⁴ In order to prevent ovarian tissue loss and to preserve fertility, medical management can be given to unruptured cases with methotrexate, mifepristone and prostaglandin F2 α .¹⁵ Pagidas et al successfully treated patients diagnosed with ovarian ectopic pregnancy using TVS with methotrexate.¹⁶ Luigi et al in their study also succeeded in treating a 37 year old female with methotrexate diagnosed pre-operatively with TVS.¹⁷

Nonetheless, surgical management is definitive for diagnostic and therapeutic purpose. Oophorectomy is the radical procedure. But, patients age, desire for fertility and size of mass should be given due consideration and wedge resection can be performed in appropriate cases.

In our case, the patient presented to us in an unstable condition with adnexal mass and hemoperitoneum on USG. Therefore, laparotomy was the preferred approach. As the entire ovary was involved and no tissue could be salvaged, the entire ovary had to be removed. Keeping in mind the age of the patient and no desire of future fertility, salpingo-oophorectomy was performed.

CONCLUSION

There is an increase in the incidence of ovarian ectopic pregnancy. Despite advances in diagnostic techniques, patients still continue to present with circulatory collapse due to rupture of the ectopic mass. Therefore, awareness and a high index of suspicion is important for its diagnosis to reduce the associated morbidity and mortality. It should be considered as a differential diagnosis in women of childbearing age coming to emergency department with abdominal pain.

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