

CASE REPORT

Ovarian ectopic pregnancy: Rarest of the rare!

Sacheeta Babuta, Mithila Bisht, Nitesh Mohan, Anjana Arya

Department of Pathology, Rohilkhand Medical College and Hospital, Bareilly, Uttar Pradesh, India

Corresponding Author:

Dr. Sacheeta Babuta,
Junior Resident, Department
of Pathology, Rohilkhand
medical college and hospital,
Bareilly, Uttar Pradesh, India.
Mobile: 8938012283
E-mail: babuta.sacheeta@gmail.com

Received: 14-03-2021

Accepted: 02-04-2021

How to cite this article: Babuta S, Bisht M, Mohan N, Arya A. Ovarian ectopic pregnancy: Rarest of the rare! Int J Adv Integ Med Sci 2021;6(2):36-38.

Source of Support: Nil,

Conflicts of Interest: None declared.

Background: Primary ovarian pregnancy being one of the rarest forms of ectopic pregnancy, i.e., where gestational sac is implanted in the ovary. Following natural conception, the incidence ranges from 0.5% to 3% of all ectopic pregnancies and having 1 case in 7000–40,000 deliveries. One of the important risk factors for ovarian pregnancy is in the use of intra uterine contraceptive devices (IUCD). **Case Report:** We report here one such uncommon case of ovarian ectopic pregnancy. Our patient was a 20-year-old woman with history of one previous abortion, who presented with severe abdominal pain and bleeding per vagina. Transvaginal sonography revealed empty uterine cavity and hyperechoic lesion in right adnexa. During laparotomy, ruptured ovarian ectopic pregnancy was being diagnosed, and salpingo-oophorectomy was done. Histopathological examination confirmed it to be an ovarian ectopic pregnancy. **Conclusion:** Ovarian gestations until unruptured, can be detected ultrasonographically but in cases of ruptured ectopic gestation, differentiation of ovarian from other tubal gestation is a difficult task. Histopathology is thus the gold standard for the confirmation of its diagnosis.

KEY WORDS: Histopathology, intra uterine devices, ovarian ectopic pregnancy

BACKGROUND

Ectopic gestation is a complication of pregnancy where an embryo attaches itself anywhere outside the uterine cavity. It is the most frequent emergency in gynecology and the reason for pregnancy-related deaths during the first trimester of pregnancy.^[1] In about 95% of ectopic pregnancies fallopian tube is the site while the residual 5% cases occur in the ovary, cervix, and abdomen.^[1] Ovarian ectopic pregnancy (OEP) is a rare site for ectopic gestation and accounts for approximately 0.5–3% of all ectopic gestations.^[2] The incidence ranges from 1 in 7,000 to 1 in 40,000 live births.^[3] The first case was reported by St. Maurice in 1689.^[4]

OEP occurs when a fertilized ovum implants on the surface of the ovary and usually terminates with rupture in the first trimester,

which can lead to internal hemorrhage and hypovolemic shock. Although the ovary should be able to accommodate the expanding pregnancy more freely than the fallopian tube, still there are more chances of rupture at an early stage.^[1] Overall, 91% of OEPs end in rupture during the first trimester, 5.3% end in the second trimester, and 3.7% end in the third trimester.^[5] OEP shares the traditional risk factors with tubal pregnancy, but a disproportionate association with the use of an IUD has been observed.^[6] Role of USG in diagnosing a case of OEP has been described but generally the patients present with ruptured ectopic with a circulatory collapse thus diagnosing OEP preoperatively on sonography is not an easy task. Finding the diagnosis to be intricate, the final diagnosis is thus based on operative emergency laparotomies and histopathological assessment.

The Spiegelberg criteria for diagnosing OEP^[7]

- The location of the gestational sac should be in the region of the ovary.
- The ovarian ligament should attach the ectopic pregnancy to the uterus.
- Ovarian tissue in the wall of the gestational sac should be proved histologically.

Access this article online	
Website: www.ijaims.in	Quick Response code

This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material for any purpose, even commercially, provided the original work is properly cited and states its license.

- d. The fallopian tube on the side being involved should be intact.

CASE REPORT

A 20-year-old patient with obstetric formula $G_2P_{0+1}L_0$ at 5 weeks and 3 days Period of gestation was admitted with pain in the lower abdomen for 1 day, and spotting per vagina for 5 days. Her previous menstrual history is normal. On examination, she had pallor and tachycardia. The left uterine adnexal region was not palpable, while there was tenderness and guarding in the right iliac fossa. Per speculum examination showed blood coming through OS. On pre vaginal examination, uterus was anteverted, normal size, tender, right fornix was fixed, left fornix free, non tender. Transvaginal ultrasonography revealed an empty uterine cavity with a hyperechoic lesion in the right uterine adnexa. Gross amount of free fluid with dense internal echoes was observed in the peritoneal cavity. On laparoscopic exploration, the uterus and bilateral fallopian tubes were normal. The left ovary was absolutely normal, while the right ovary appeared enlarged with blood oozing from its surface. Blood in the peritoneal cavity was observed. Right, salpingo-oophorectomy was carried out. On histopathological examination, grossly, we received a specimen of right ovary and fallopian tube. Fallopian tube appeared normal measuring 5 cms in length, outer surface grey white smooth, cut section showed patent lumen. Right ovary measured $4 \times 3.2 \times 2.8$ cms, external surface graybrown with a ruptured hemorrhagic area on one side ms 2.2×1.5 cms. Cut surface showed solid hemorrhagic area ms 2.5×2.3 cms [Figure 1a]. Furthermore, received peritoneal clots as multiple dark brown soft tissue pieces ms altogether $12 \times 10 \times 2$ cms [Figure 1b]. Microscopic examination showed sections from ovary consisting of chorionic villi lined by cytotrophoblast and syncytiotrophoblasts within the ovarian tissue, large hemorrhagic areas were also noted [Figure 2a and 2b]. Sections from peritoneal clots also showed chorionic villi lined by cytotrophoblast and syncytiotrophoblast [Figure 2c]. Sections from the fallopian tube showed tissue lined by tall columnar pseudostratified epithelium with no evidence of products of conception [Figure 2d]. Thus a confirmatory diagnosis of ovarian ectopic pregnancy was given.

DISCUSSION

OEP is a rare form of ectopic gestation, when a fertilized ovum implants on the surface of the ovary, having poor symptoms to be diagnosed clinically and on ultrasonography.^[3] It can be further classified as primary and secondary in which primary OEP usually occurs because of ovulatory dysfunction and the ovum is fertilized within the follicle itself, before the follicle being expelled from the ovary.^[3] Secondary OEP occurs when fertilization takes place within the fallopian tube and the conceptus is regurgitated and implanted in the ovarian stroma.^[3] (nurse) The cause of OEP remains obscure, including history of IUCD use, pelvic inflammatory disease (PID), sexually transmitted infections (STIs), using assisted reproductive



Figure 1: (a) Right ovary with a ruptured hemorrhagic area on one side. (b) Peritoneal clots

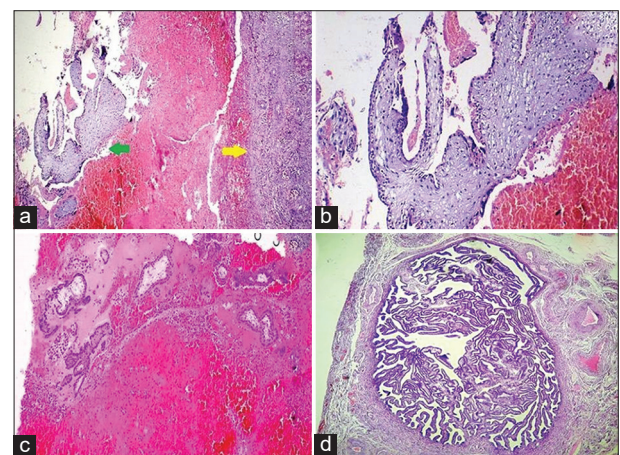


Figure 2: (a) Ovarian tissue (yellow arrow) and villi lined by trophoblastic cells (green arrow) (H and E $\times 40$). (b) Villi lined by cytotrophoblast and syncytiotrophoblast (H and E $\times 100$). (c) Peritoneal clots showing presence of villi within hemorrhagic areas (H and E $\times 40$). (d) Right fallopian tube showing normal histology (H and E $\times 100$)

techniques, previous pelvic surgeries, endometriosis, prior ectopic pregnancy, salpingitis, rising maternal age, multipara, and/or infertility.^[8] The true reason behind abnormal implantation is not clear. There are theories suggesting the abnormal implantation in the ovary:^[6]

1. Embryo migration is related to the presence of certain conditions that cause fallopian tube epithelial damage that alters tubal motility.
2. An improper release of the ovum from the ruptured ovarian follicle.
3. Thickened tunica albuginea due to inflammation.

Role of IUCD use is found in 14–30% of patients having non-ovarian extra-uterine gestation while in 57–90% of patients having primary ovarian pregnancy.^[9] The reason might be altered tubal motility, thus facilitating the process of implantation within the ovary. These IUCDs do prevent the implantation within the uterine cavity but have no provision for protection against ovarian implantation.^[6] In 28% of the patients, OEP can be misdiagnosed as a ruptured corpus luteal cyst intra-operatively.^[10] Suspicion is made during laparoscopy or laparotomy, but confirmation is done only by histopathology.^[6]

CONCLUSION

Incidence of ovarian pregnancy is on the rise due to increased incidence of infertility and the use of assisted reproductive techniques. Ovarian gestations until unruptured can be detected ultrasonographically but in cases of ruptured ectopic gestation, differentiation of ovarian from other tubal gestation is a difficult task. Management of such cases is laparoscopic resection. Histopathological diagnosis is considered as confirmatory and gold standard.

REFERENCES

1. Kadau JV. Sonographic detection of ovarian ectopic pregnancy: A case study. *J Diagn Med Sonogr* 2016;32:299-303.
2. Melcer Y, Maymon R, Vaknin Z, Pansky M, Mendlovic S, Barel O, *et al.* Primary ovarian ectopic pregnancy: Still a medical challenge. *J Reprod Med* 2016;61:58-62.
3. Begum J, Pallavee P, Samal S. Diagnostic dilemma in ovarian pregnancy: A case series. *J Clin Diagn Res* 2015;9:1-3.
4. Lurie S. The history of the diagnosis and treatment of ectopic pregnancy: A medical adventure. *Eur J Obstet Gynecol Reprod Biol* 1992;43:1-7.
5. Mathur SK, Parmar P, Gupta P, Kumar M, Gilotra M, Bhatia Y. Ruptured primary ovarian ectopic pregnancy: Case report and review of the literature. *J Gynecol Surg* 2015;31:354-6.
6. Ghasemi Tehrani H, Hamoush Z, Ghasemi M, Hashemi L. Ovarian ectopic pregnancy: A rare case. *Iran J Reprod Med* 2014;12:281-4.
7. Gerin-Lajoie L. Ovarian pregnancy. *Am J Obstet Gynecol* 1951;62:920-9.
8. Shrestha A, Chawla CD, Shrestha RM. Ruptured primary ovarian pregnancy: A rare case report. *Kathmandu Univ Med J* 2012;10:76-7.
9. Bouyer J, Rachou E, Germain E, Fernandez H, Coste J, Pouly JL, *et al.* Risk factors for extrauterine pregnancy in women using an intrauterine device. *Fertil Steril* 2000;74:899-908.
10. Ciortea R, Costin N, Chiroiu B, Malutan A, Mocan R, Hudacsko A, *et al.* Ovarian pregnancy associated with pelvic adhesions. *Clujul Med* 2013;86:77-9.