

Ovarian Ectopic Pregnancy: A Case Report

Dr Ankita Mago¹, Dr Shailja Rani²

Abstract: Ovarian ectopic pregnancy is a rare variant of ectopic implantation. It ends with rupture before the end of the first trimester. Ovarian ectopic incidence after natural conception ranges from 1 in 2000 to 1 in 60,000 deliveries and accounts for 3 % of all ectopic pregnancies. **Aims and Objectives:** Reporting a case of ovarian ectopic and defining the role of surgery in the management. **Background:** The incidence of ovarian ectopic has increased in the last 50 years attributable to increased use of intrauterine devices, ovulatory drugs and assisted reproductive technologies. A history of PID has been implicated as well. Ovarian pregnancy is frequently misdiagnosed clinically as tubal ectopic pregnancy. **Case:** 24 year old primigravida presented with lower abdominal pain, minimal vaginal bleeding with 8 weeks of amenorrhoea. She did not have any past history of PID or infertility treatment. Her vitals were BP 99/58 MM of Hg, PR 100/min pallor present with abdominal guarding and tenderness. Per vaginal had bleeding and right forniceal fullness and tenderness. Managed surgically and recovery was uneventful. **Conclusion:** Ovarian ectopic pregnancy is rare. Despite modern diagnostic modalities these patients continue to present with circulatory collapse. Usually surgical treatment in the form of oophorectomy or wedge resection of the ovary is required.

Keywords: ovarian ectopic, wedge resection, oophorectomy

1. Introduction

Ovarian ectopic pregnancy is a rare variant of ectopic implantation. It ends with rupture before the end of the first trimester. Ovarian ectopic incidence after natural conception ranges from 1 in 2000 to 1 in 60,000 deliveries and accounts for 3 % of all ectopic pregnancies. Ovarian ectopic pregnancy is a rare variant of ectopic implantation (1). It ends with rupture before the end of the first trimester (2). Ovarian ectopic pregnancy incidence after natural conception ranges from 1 in 2000 to 1 in 60 000 deliveries and accounts for 3% of all ectopic pregnancies (3, 4). One in every nine ectopic pregnancies among Intra uterine devices (IUD) users is an ovarian pregnancy (5, 6). The diagnosis is intricate and based on surgical and histopathological observations (3).

Ectopic pregnancy implanted in the ovary is rare. Traditional risk factors for ovarian ectopic pregnancy are similar to those for tubal pregnancy, but use of an IUD seems to be disproportionately associated. Although the ovary can accommodate more readily than the fallopian tube to the expanding pregnancy, rupture at an early stage is the usual consequence (7).

2. Diagnosis

Findings are likely to mimic those of a tubal pregnancy or a bleeding corpus luteum. Serious bleeding is seen in approximately one third of cases. At surgery, early ovarian pregnancies are likely to be considered corpus luteum cyst or a bleeding corpus luteum. Use of transvaginal sonography has resulted in a more frequent diagnosis of unruptured ovarian pregnancies (7).

3. Management

The classical management for ovarian pregnancies has been surgical. Early bleeding for small lesion has been managed by ovarian wedge resection or cystectomy. With larger lesions ovariectomy is most often performed and laparoscopy has been used to resect or to perform laser

ablation. Finally methotrexate has been used successfully to treat unruptured ovarian.

4. Case

24 year old primigravida presented with lower abdominal pain, minimal vaginal bleeding with 8 weeks of amenorrhoea. She did not have any past history of PID or infertility treatment. Her vitals were BP 99/58 MM of Hg, PR 100/min pallor present with abdominal guarding and tenderness. Per vaginal had bleeding and right forniceal fullness and tenderness. TVS showed a uterus of normal size with no gestational sac, but an ovarian cyst 11×11mm in the right side with another echogenic mass medially to the right ovary of 9×11 mm size and right tubal ectopic pregnancy was suggested. Decision for laparotomy was taken and per operatively it was found to be right ruptured ovarian ectopic and wedge resection was done. Some ovarian tissue was tried to be conserved. Sample was sent for histopathology which confirmed ovarian pregnancy. She was followed by beta hcg levels which declined after laparotomy.

5. Discussion

An ectopic pregnancy is characterized by implantation and development of an embryo outside of the uterine cavity. Ectopic pregnancies can occur in the ovary (3.2%), or abdomen (1.3%) (8). Hertig estimated that ovarian pregnancy occurs in one in 25 000 to 40 000 pregnancies (9). It is characterized by a poor clinical symptomatology and a difficult ultrasound diagnosis. The surgical criteria remain hard to prove (10). Intrauterine contraceptive devices may also be a cause (11). As a matter of fact, an intrauterine contraceptive device is found in 14-30% of patients with a nonovarian extra uterine pregnancy while it is found in proportions ranging from 57-90% of patients with a primary ovarian pregnancy (12-18).

Its action could be explained by altered tubal motility, thereby facilitating the implantation in the ovary (10). The increase in the incidence of ovarian pregnancy is closely related to the use of intra uterine devices (IUD) as a contraceptive method. These prevent uterine implantation,

but do not provide protection against ovarian implantation (19). A study showed the strong association of IUD as a risk factor of ovarian pregnancy thus IUD reduces uterine implantation by 99.5%, tubal implantation in 95% and they have no effect on ovarian location (19-21).

The lowest ectopic pregnancy rates is seen for the most effective IUD like TCu380 A (1). Also, fertility treatment had remained important associated risk factor (20). Patients mainly have symptoms as in ectopic pregnancy at other sites (1). Ovarian pregnancy can be missed diagnosed with ruptured corpus luteum cyst in 75% of cases (21, 22). Chronic pelvic pain alone is the most frequent clinical symptoms of an ovarian gestation as in our patient, also an adnexal mass may be palpable on examination (22-23). The diagnosis is often made at surgery and requires histological confirmation. A correct diagnosis of ovarian pregnancy during surgery is only possible in 28% of the cases, because it is difficult to differentiate from a hemorrhagic corpus luteum intraoperatively (19).

Diagnosis is based on the classic description of a cyst with a wide ectogenic outer ring using ultrasound (20, 21). Patel *et al* reported a rare case of twin ovarian pregnancy diagnosed by ultrasound (24). Although Ultrasound may suggest the diagnosis, surgery (laparoscopy or laparotomy) remains the best method of a differential diagnosis and management (22, 25, 26).

A high index of suspicion is based upon a combination of ultrasound finding, (both gray scale and color Doppler), as well as high levels of serum HCG and sonographic experience (22). Ultrasound diagnosis of an ovarian ectopic pregnancy may be different such as serum cell tumors or other ovarian pathology (22-25). Diagnosis is suspected during laparoscopy or laparotomy and confirmed by histopathology (24-27). Treatment of almost all known ovarian ectopic pregnancies has been surgical. Also case reports have described successful MTX therapy (1).

In our case, since the patient was hemodynamically stable and HCG titer was in plateau, we suggested multiple dose of MTX treatment but when the patient suffered from severe abdominal pain and tenderness of the right lower quadrant, we suggested laparotomy. Patel *et al* showed that the most surgical treatment of ovarian ectopic pregnancy consists on wedge resection and oophorectomy (24, 28). During our laparotomy, an ovarian pregnancy was clearly seen and an ovarian wedge resection was done. Resta *et al* reported a case of ruptured ovarian ectopic pregnancy despite low levels of beta HCG. In our case there were no rupture and HCG was slowly raised (29). Histopathologist confirmed an ovarian ectopic pregnancy. Ovarian ectopic pregnancy is a rare variant of ectopic gestation. The diagnosis is made often at surgery and requires histologic confirmation. For a woman with a previous history of ectopic pregnancy, it is better not to use a copper or levonorgestrol containing IUD.

References

- [1] Fritz MA, Speroff L. Clinical Gynecologic Endocrinology and infertility. 8th Ed. Philadelphia: 2011. p. 1409.
- [2] Shrestha A, Chawla CD, Shrestha RM. Ruptured primary ovarian pregnancy: a rare case report. Kathmandu Univ Med J. 2012;10:76-77. [PubMed]
- [3] Scutiero G, Di Gioia P, Spada A, Greco P. Primary ovarian pregnancy and its management. JSLS. 2012;16:492-494. [PMC free article] [PubMed]
- [4] Odejimi F, Rizzuto MI, MacRae R, Olowu O, Hussain M. Diagnosis and laparoscopic management of 12 consecutive cases of ovarian pregnancy and review of literature. J Minim Invasive Gynecol. 2009;16:354-359. [PubMed]
- [5] Hallett JG. Primary ovarian pregnancy. A case report of twenty five cases. Am J Obstet Gynecol. 1982;143(1):55-60. [PubMed]
- [6] Grimes H, Nosal RA, Gallagher JC. Ovarian pregnancy. A series of 24 cases. Obstet Gynecol. 1983;61:174-180. [PubMed]
- [7] Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Rouse DJ, Spong CY. Williams Obstetrics. 23rd Ed. Mc Graw Hill; 2010. Ectopic pregnancy; p. 251.
- [8] Bouyer J, Coste J, Fernandez H, Pouly JL, Job-Spira N. Sites of ectopic pregnancy: a 10 year population-based study of 1800 cases. Hum Reprod. 2002;17:3224-3230. [PubMed]
- [9] Gerin-Lajoie L. Discussion of Gerin-Lojoie L. Ovarian pregnancy. Am J Obstet Gynecol. 1951;62:920. [PubMed]
- [10] Sergent F, Mauger-Tinlot F, Gravier A, Verspyck E, Marpeau L. Grossesses ovariennes: réévaluation des critères diagnostiques. J Gynecol Obstet Biol Reprod (Paris) 2002;31:741-746. [PubMed]
- [11] Mehmood SA, Thomas JA. Primary ectopic ovarian pregnancy, report of three cases. J Postgrad Med. 1985;31:219-222. [PubMed]
- [12] Ercal T, Cinar O, Mumcu A, Lacin S, Ozer E. Ovarian pregnancy; relationship to an intrauterine device. Aust N Z J Obstet Gynaecol. 1997;37:362-364. [PubMed]
- [13] 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. [PubMed]
- [14] Comstock C, Huston K, Lee W. The ultrasonographic appearance of ovarian ectopic pregnancies. Obstet Gynecol. 2005;105:42-45. [PubMed]
- [15] Ghi T, Banfi A, Marconi R, Iaco PD, Pilu G, Aloysio DD, et al. Three dimensional sonographic diagnosis of ovarian pregnancy. Ultrasound Obstet Gynecol. 2005;26:102-104. [PubMed]
- [16] Raziell A, Golan A, Pansky M, Ron-EI R, Bukovsky I, Caspi E. Ovarian pregnancy: a report of twenty cases in one institution. Am J Obstet Gynecol. 1990;163:1182-1185. [PubMed]
- [17] Herbertsson G, Magnusson SS, Benediktsdottir K. Ovarian pregnancy and IUCD use in a defined complete population. Acta Obstet Gynecol Scand. 1987;66:607-610. [PubMed]
- [18] Cabero A, Laso E, Lain JM, Manas C, Escibano I, Calaf J. Increasing incidence of ovarian pregnancy. Eur J Obstet Gynecol Reprod Biol. 1989;31:227-232. [PubMed]
- [19] Ciortea R, Costin N, Chiroiu B, Malutan A, Mocan R, Hudacsko A, et al. Ovarian pregnancy associated with

- pelvic adhesions. *Clujul Med.* 2013;86:77–79. [PMC free article] [PubMed]
- [20] Sandvler Sandstad E, Steir JA. Ovarian pregnancy associated with intrauterine contraceptive device. *Acta Obstet Gynecol Scand.* 1987;66:137–41. [PubMed]
- [21] Joseph RJ, Irvine LM. Ovarian ectopic pregnancy: aetiology, diagnosis, and challenges in surgical management. *J Obstet Gynaecol.* 2012;32:472–474. [PubMed]
- [22] Mehra S, Negi H, Hotchandi M. Rare case of Ovarian pregnancy managed by laparoscopy: A case report. *JK Sci.* 2003;5:29.
- [23] Hassan S, Arora R, Bhatia K. Primary ovarian pregnancy: case report and review of literature. *BMJ Case Rep.* 2012;2012:bcr2012007112. [PMC free article] [PubMed]
- [24] Patel Y, Wanyonyi SZ, Rana SF. Laparoscopic management of an ovarian ectopic pregnancy: case report. *East Afr Med J.* 2008;85:201–204. [PubMed]
- [25] Comstock C, Huston K, Lee W. The ultrasonographic appearance of ovarian ectopic pregnancies. *Obstet Gynecol.* 2005;105:42–45. [PubMed]
- [26] Di Luigi G, Patacchiola F, La Posta V, Bonitatibus A, Ruggeri G, Carta G. Early ovarian pregnancy diagnosed by ultrasound and successfully treated with multidose methotrexate. A case report. *Clin Exp Obstet Gynecol.* 2012;39:390–393. [PubMed]
- [27] Nadarajah S, Sim LN, Loh SF. Laparoscopic management of an ovarian pregnancy A case report. *Singapore Med J.* 2002;43:95–96.
- [28] Koo YJ, Choi HJ, Im KS, Jung HJ, Kwon YS. Pregnancy outcomes after surgical treatment of ovarian pregnancy. *Int J Gynecol Obstet.* 2011;11:97–100. [PubMed]
- [29] Resta S, Fuggetta E, D'Itri F, Evangelista S, Ticino A, Porpora MG. Rupture of Ovarian Pregnancy in a Woman with Low Beta-hCG Levels. *Case Rep Obstet Gynecol.* 2012;2:13169. [PMC free article] [PubMed]