The patient was taken up for emergency laparotomy with necessary preparations. At laparotomy there was 100 ml of blood in the pouch of Douglas. Both the fallopian tubes were normal. The right ovary was enlarged with the hemorrhagic mass measuring 5x5cm which was oozing blood from the surface. There was a translucent membrane seen adjacent to the hemorrhagic mass. (Figure 2) The left fallopian tube and ovary were normal. The right fallopian tube was traced and palpated to its entire length and was found to be normal. Based on the above findings a diagnosis of ovarian pregnancy was made and right salpingo-oophorectomy was proceeded with. Her postoperative period is uneventful. Cut section of the ovary showed a haemorrhagic mass with a translucent tissue in the centre surrounded by ovarian tissue. (Figure 3)

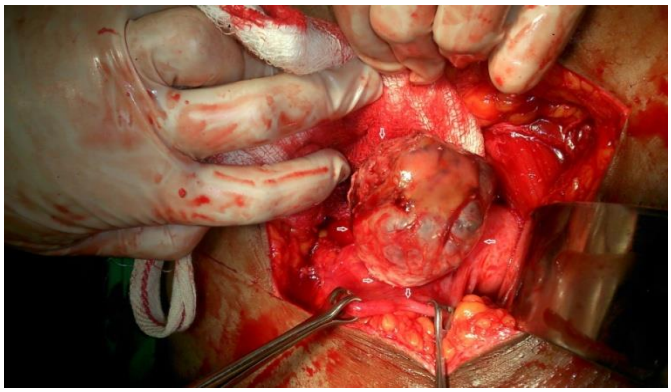

Figure 2. PICTURE SHOWING MACROSCOPIC APPEARANCE OF RIGHT OVARIAN PREGNANCY

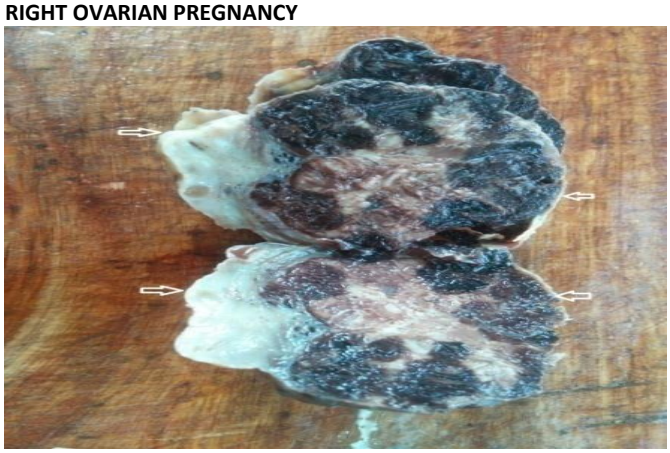

Figure 3. PICTURE SHOWING CUT SECTION OF THE MASS WITH OVARIAN TISSUE AT THE PERIPHERY.

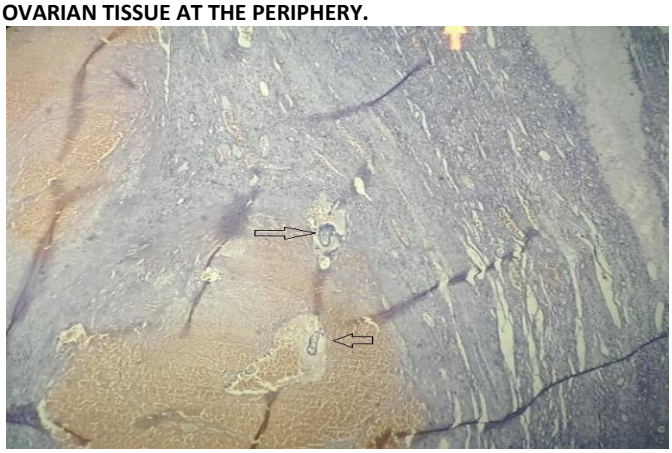

Figure 4. PICTURE SHOWING OVARIAN TISSUE WITH CORPUS LUTEUM AND CHORIONIC VILLI x 40

Histopathology was reported as ovary containing corpus luteum and ovarian tissue surrounding areas of chorionic villi. (Figure 4)

DISCUSSION

Primary ovarian pregnancy is a rare form of extra-uterine pregnancy. It accounts for nearly 3% of all ectopic gestations, with an incidence of one in 25000-40000 of all pregnancies.[1,2] Except in few incidences ,the final diagnosis is most often made at the time of laparotomy and final confirmation is by histopathology based on spiegelberg criteria [3].

The spiegelberg criteria are as follows:

- Intact fallopian tube on the affected side,
- Foetal sac must occupy the position of the ovary on the affected side,
- Ovary connected to the uterus by ovarian ligament,
- Ovarian tissue must be located in the sac wall.

In our case both the fallopian tubes were normal. The right ovary showed a hemorrhagic mass with a translucent membrane in the centre surrounded by normal ovarian tissue at the periphery. The histopathological report of chorionic tissue seen within the ovarian tissue confirmed the diagnosis of primary ovarian pregnancy.

The cause of primary ovarian pregnancy remains obscure and many hypotheses have been postulated. Literature review shows that interference in the release of ovum from the ruptured follicle, malfunction of the tubes and inflammatory thickening of the tunica albugenia, and current intrauterine contraceptive device use may all be possible risk factors for the occurrence of primary ovarian pregnancy.[4] There have been recent reports of primary ovarian pregnancy following IVF techniques.[5] As the clinical picture is similar to that of ruptured hemorrhagic corpus luteum, chocolate cyst and tubal ectopic pregnancy, primary ovarian pregnancy is often not suspected. However awareness of this rare condition is important in order to reduce the associated risk such as heavy intra peritoneal bleeding. [4] In our case though the USG showed a well formed right adnexal mass without haemoperitoneum, ovarian pregnancy was not suspected and the diagnosis was made only at the time of laparotomy. The signs and symptoms of ovarian pregnancy are similar to that of tubal ectopic pregnancy. Usually ovarian pregnancy ruptures in the first trimester and rarely progresses to advanced pregnancy[6] Our patient fortunately was operated upon before the full blown rupture of the ovarian pregnancy. With recent advances in USG instrumentation, use of vaginal probes and operator's skill, it is possible to diagnose ovarian pregnancy pre-operatively. Early diagnosis will allow conservative laparoscopic treatment of ectopic pregnancies.[7] By USG, presence of a wide echogenic ring with an internal echolucent area on the ovarian surface has been shown to be suggestive of ovarian pregnancy.[8]

Our case is unusual in that she was married only for 3 months at the time of presentation and she did not have any risk factors for any type of ectopic pregnancy. Similar to our case, there has been a report of primary ovarian pregnancy in a primigravida by Panda et al. [9]

Portunda et al have reported that fertility after ovarian pregnancy remains unmodified .[10] Number of conservative approaches such as ovarian wedge resection of the ovary and use of methotrexate have been described in the management of primary ovarian pregnancy.[11]

CONCLUSION

The diagnosis of ovarian pregnancy is difficult. However with the availability of advanced ultrasonographic techniques and operator skill it may be possible to diagnose ovarian pregnancy pre operatively which will allow conservative treatment, thereby preserving the ovary.

REFERENCES

1. Hertig AT. Discussion of Gerin-Lojoie L. Ovarian pregnancy. Am J Obstet and Gynecol. 1951;62:920
2. 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.
3. Spigelberg O. Casusistik der ovarial schwangers chaft. Arch Gynecol. 1878;13:73.
4. Mehmood SA, Thomas JA. Primary ectopic ovarian pregnancy, report of three cases. J Postgrad Med.1985;31:219.
5. Qublan H, Tahat Y, Al-Masri A. Primary ovarian pregnancy after the empty follicle syndrome: A case report. J Obstet Gynaecol Res. 2008;34:422–4.
6. Darbar RD, Reddy CC, Despande NR, Nagalotimath SJ. Primary Ovarian Pregnancy (a case report) J Obstet Gynecol India. 1976;28:310.
7. Russel JB, Cutler LR. Transvaginal ultrasonographic detection of primary ovarian pregnancy with laparoscopic removal. Fertil Steril. 1989;51:1055.
8. Ghi T, Banfi A, Marconi R, et al. Three dimensional sonographic diagnosis of ovarian pregnancy. Ultrasound Obstet Gynecol. 2005; 26: 102–104.
9. Panda S, Darlong M D, Singh S, and Borah T. Case report of a primary ovarian pregnancy in a primigravida. J Hum Reprod Sci. 2009; 2(2): 90-92.
10. Portundo JA, Ochoa C, Gomez BJ, Uribaron A. Fertility and contraception of 8 patients with ovarian pregnancy. Int J Fertil. 1984;29:254.
11. Chelmow D, Gates E, Penzias AS. Laparoscopic diagnosis and methotrexate treatment of an ovarian pregnancy: a case report. Fertil Steril. 1994;62:879–881