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A Rare Case of Ruptured Ovarian Ectopic Pregnancy with Chronic Appendicitis

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Abstract: ***Ovarian pregnancy is a rare and dangerous form of ectopic pregnancy. A little is known about its risk factors and incidence. This is a case of ruptured primary ovarian pregnancy which was a surprise intra operative finding. As assisted reproductive technology (ART) procedures are becoming popular, the incidence is likely to increase. Clinicians should be well equipped to diagnose and treat this unusual form of ectopic pregnancy at the earliest***

1. Case Report

Our patient is a 37 years, married, G3P1L1A1, previous LSCS, regular cycles, with history of 44 days amenorrhoea came with complaints of lower abdominal pain for past 4 days which was acute in onset, severe in intensity 2 days, now dull aching and persistent in nature, no complaints of bleeding per vaginum. For writing this study, oral consent was obtained from our case. Her menstrual history was regular, 3-4 / 30 days cycle, her period of gestation is 6weeks2days, according to her LMP. She is married at 33 years of age, married since 4 years, non consanguinous marriage.

Obstetric History

G3P1L1A1

- Male / 2.30kg/full term LSCS in view of PROM/ Oligohydramnios/ fetal distress/ 2 ½ years / A&H
- One Spontanous abortion at 2 months amenorrhoea, 1 year back for which dilatation and curretage done, certified, 1 Unit of blood transfused in view of anemia.
- Present pregnancy, Spontaneous conception, confirmed by UPT two days back

2. On Examination

- Pale, not dyspnoeic / tachypnoeic ,pulse rate was 94/ min, BP = 110/70 mmHg
- CVS/ RS appeared normal
- On per abdomen examination, soft, non tender, mild distension noted, SPT scar healthy.
- On per speculum examination, cervix and vagina were healthy, no significant discharge
- On per vaginum examination, cervix pointing downwards, uterus anteverted, normal size, fornices free, non tender, no cervical motion tenderness

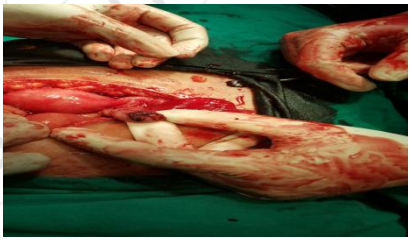
Investigations done

Urinary beta human chorionic gonadotropin was positive

- Transvaginal ultrasound was done to confirm the diagnosis and showed no intrauterine pregnancy , ET regular , 6mm, Right ovary could not be visualized, Thick wall echogenic ring shaped lesion with irregular central anechoic area measuring 5.1 x 3.8 cm noted in the right adnexa. Peripheral vascularity noted, free fluid in POD and right paracolic gutter noted, thin rim of free fluid noted in morrison's pouch
- HB = 7.5 g/dl
- Blood group = O Positive
- Serology – NEG
- After preoperative check up, patient was taken for exploratory laparotomy under general anesthesia, with a preoperative provisional diagnosis of ruptured right tubal ectopic pregnancy
- Abdomen opened with suprapubic transverse incision

Intra op findings

- Haemoperitoneum of 300 ml with blood clots
- Uterus was normal in size
- Right fallopian tube was congested
- Left fallopian tube, and left ovary were normal
- Right ovary was enlarged and showed a breech on the surface with an active bleeder on ruptured surface



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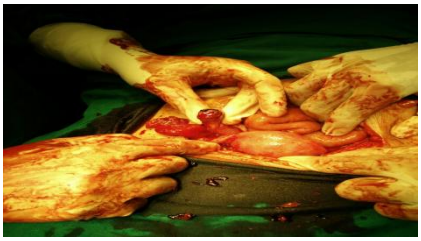

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Right fallopian tube was congested

- Right salphingo- oophrectomy done, as fallopian tube was congested, and the fresh bleeding vessels on the ovarian surface could not be secured after plication and electrocauterization.

- Right partial salpingectomy done using modified pomeroy's technique as per the patient's desire
- Incidentally, appendix was found inflammed and edematous, Surgeon called over and appendicectomy done
- Peritoneal wash given, right pelvic drain kept, perfect hemostasis secured, abdomen closed in layers
- Two units of cross matched and typed packed cells transfused in immediate postoperative period
- Post operative period uneventful.
- Serum beta HCG levels on
- POD 1 = 2115mIU/ml
- POD 3 = 378.14mIU/ml

HPE

- Excised specimen – blood clot with few hyperplastic villi, synctiotrophoblast and cytotrophoblast
- Right tube – numerous congested blood vessels in the wall
- Right ovary – ovarian stroma with numerous corpora albicantes and hemorrhagic corpus luteal cyst.
- IMP : RUPTURED OVARIAN PREGNANCY
- Appendix – chronic appendicitis

3. Discussion

- Ovarian ectopic pregnancy is a rare diagnosis of exclusion and constitutes only 0.15 to 3 % of all ectopic pregnancies[1]. Incidence: 1:3000 to 1:7000 deliveries. Primary ovarian pregnancy result when an ovum not released from the ovary is fertilized or following a primary implantation of fertilized ovum in the ovary after reverse migration from the fallopian tube.
- Intrafollicular – etiology is hormonal resulting in a rapped ovum inside the follicle, due to thickened tunica albugenia of ovary, or inefficient sweeping of fimbria across the surface of ovary resulting in ineffective ovum pick up
- Extrafollicular
- In secondary ovarian pregnancy, there is a tubal abortion or rupture with secondary implantation of gestational sac on the surface of ovary.
- USG may show hyperdense chorial ring which moves with movement of ovary
- The main differential diagnosis is reuptured corpus luteum or hemorrhagic cyst of ovary

Spiefelberg Criteria

Distal tubal pregnancy vs primary ovarian pregnancy

- The fallopian tube with its fimbriae should be intact and separate from the ovary
- The gestational sac should occupy the normal position of the ovary
- The gestational sac should be connected to the uterus by the ovarian ligament
- A histologically proven ovarian tissue should be located in the sac wall.

There is often a delay in the diagnosis of ovarian pregnancy as the gestational sac mimics corpus luteum, hemorrhagic cyst, and endometriotic cyst of ovary. They pose a significant diagnostic and therapeutic challenge and carry a greater maternal mortality risk that tubal ampullary ectopic pregnancy. The developing chorionic villi may eventually erode into the blood vessels of ovary, causing severe hemorrhage. Significant maternal hemorrhage leading to hypovolemia and shock can rapidly result from ovarian pregnancy rupture

Causes of Ovarian Pregnancy Remain Obscure[3,4]

- PID
- fibroids
- Tubal diseases- peri and intra tubal adhesions
- IVF – altered tubal motility due to increased progesterone causing hyperstimulation, excessive pressure on syringe during embryo transfer
- Previous pelvic surgeries
- IUCD
- Favourable implantation surface as in endometriosis

The mean age of diagnosis is 29 years, mean gestational age is 45 days. Patient usually presents with pain abdomen (100%)[2], vaginal bleeding (33%), hypovolemic shock (8%)

Diagnosis

- Serum Beta HCG
- TVS
- Abdomino pelvic USG cannot always differentiate it from other types of ectopic pregnancies
- Laparoscopy

Transvaginal Ultrasound Criteria for Ovarian Pregnancy

- More echogenic white ring in the ovary compared with ovarian tissue
- A yolk sac or fetal parts may be visualized but an embryonic pole is rarely seen
- The corpus luteum has an anechoic texture and less wall echogenicity as compared to endometrium
- 3D – Coronal plane of uterus – exact localization of GS relative to uterine tube and ovary

Medical Management

- Early diagnosis of ovarian pregnancy with TVS allows for first trimester conservative management with methotrexate
- Serum beta HCG – 3000 IU/ml
- Minimum symptoms

Surgical Management

- LAPAROSCOPY
- LAPARATOMY –
- Unruptured - Ovarian wedge resection, Ovarian cystectomy
- Ruptured – Oophrectomy, Salphingo - oophrectomy

Ovarian pregnancy usually rupture in 91% of cases in first trimester. Laparoscopic visualisation is considered as gold standard of modern management of ovarian pregnancy – frozen section biopsy of gestational sac. Unlike the tubal pregnancy, no recurrences has been documented till date in ovarian ectopic pregnancy.[5] Fertility after ovarian ectopic pregnancy remains unaltered.

4. Conclusion

Ovarian pregnancies are rare, they are often missed radiologically and intraoperatively. It is difficult to differentiate between GS and corpus luteum/ hemorrhagic cyst in the ovary. ART remains as a major risk factor for increasing incidence of ovarian ectopic pregnancies. In this patient, the ovarian gestation had ruptured and the only option was emergency salpingo – oophrectomy.

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