

PRIMARY OVARIAN PREGNANCY

(A Case Report)

by

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Primary ovarian pregnancy is an extremely unusual form of ectopic gestation, occurring in 1 in 25,000 to 52,833 pregnancies. The first authentic case of ovarian pregnancy was reported as early as 1614 by Mercerdus. In 1878, Spiegelberg laid down definite criteria which are essential for the diagnosis of this condition and since then, the entity came to be fully accepted. The criteria cited by him were—

1. The fallopian tube including the fimbriated end must be intact and must be distinctly separate from the ovary.

2. The gestation sac must occupy the position of the ovary.

3. The gestation sac must be connected to the uterus by the utero-ovarian ligament.

4. Unquestionable ovarian tissue must be demonstrated in the wall of the sac.

5. Well defined chorionic villi must be present in the substance of the ovary.

The figures given by different authors, vary from 6.22 to 5.12% of all ectopic pregnancy. Novak (1961) collected 50 authentic cases of ovarian pregnancy till 1940 and Pewter (1956) 125 cases till 1956. Bornow *et al* (1965) could find 65 cases during the period from January 1950 to January 1963, and they believe that in all about (above) 250 cases, were on record. Quite a few cases of ovarian pregnancy, have since been reported from India. (Upadhyaya *et al*, 1955; Dalal, 1964; Rakshit, 1964; Vaish, 1965; Sakuntaladevi, 1967; Rajaram, 1967; Kalyanikutty, 1969; Mitra, 1973; Gulati and Jain, 1975; Das, 1974 and others.) The first and the only case that we have come across in the J.N. Medical College, Belgaum, during the last 10 years, is reported here.

CASE REPORT

Mrs. K.K.G., aged 43 years, was admitted on 15th May 1976 into the Gynaecological wards of the Civil Hospital, with the complaints of pain in the lower abdomen for the last 3 months and 16 weeks amenorrhoea. There was no history of vaginal bleeding and the previous menstrual cycles were regular.

The patient had 4 normal deliveries at term, her last child was one and half years old.

She was previously admitted in the Surgical Ward for 7 days, 2 months prior to the present admission. At that time she had abdominal pain

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for one month and vomiting since one day. diffuse tenderness was present all over the abdomen but no distension and peristaltic sounds were well heard. Stool examination revealed plenty of round worm ova. A clinical diagnosis of Ascariid colic was made and she was treated with piperazine citrate on two consecutive days. She passed more than 40 round worms. At the time of discharge, she was not completely free from the abdominal pain.

On examination (present admission) she was anaemic. Pulse rate—88/min. B.P.—130/80 mm. Hg. Temperature—normal. Physical examination of different systems revealed no abnormality but the lower abdomen was tender and slightly rigid. A firm lobular tender lump of 8 x 8 cms. in size was palpable in the left iliac and left lumbar regions. The lower border of the lump could not be felt. The mass was slightly mobile above downwards. Mass was dull to percussion.

Vaginal examination showed lax vaginal walls and slight oozing of white discharge from within the cervical canal. Cervix was soft and pointing forwards. Uterus was retroverted and slightly bulky. A firm tender mass could be palpated through the left and posterior fornices. There was no fullness or mass in the pouch of Douglas.

Laboratory Investigations

Hb.—8.2 gms.%, WBCs—10,700 cells/c.mm., D.C.—P-63%, L-20%, E-15%, M-0.2%. ESR—30 mm 1st hour. P.S.—Microcytic, hypochromic anaemia. Blood group—'A' Rh(D)—Positive. VDRL—Nonreactive. Blood urea 28 mg. Routine examination of urine and stool, nothing abnormal detected.

On 22nd June 1976, a laparotomy was performed under spinal anaesthesia. On opening the abdomen, no blood was found in the peritoneal cavity. Uterus was retroverted and slightly bulky. The right fallopian tube and ovary were normal. The left tube with its fimbrial end was healthy and intact. The left ovary was enlarged and showed an irregular brown coloured firm mass of 10 x 8 x 7 cms. Adhesions were removed. Abdominal hysterectomy with bilateral salpingo-oophorectomy was done. The postoperative period was uneventful and the abdominal wound healed without any complication.

Gross Appearance of the Specimen

Hysterectomy specimen with one side normal looking tube and ovary received. The other tube was tortuous and could be traced cleanly on the anterior superior aspect of the irregular mass. The fimbrial end of the tube was distorted and slightly oedematous. Uterus measures 7 x 4 x 3 cms. Cut surface showed patent endocervical canal and blood tinged mucinous plug in the cervical canal.

MASS: The mass was firm, dark-brown, irregular and haemorrhagic and measures 10 x 8 x 7 cms. External surface is shaggy looking. Cut section shows haemorrhagic area. On further cutting foetal head and upper limbs were exposed. The foetus was embedded in the gestational sac. The length of the foetus corresponding to 14 weeks size (96 mm.). The peripheral part of the mass adjacent to the haemorrhagic mass was fibrous and glistening.

Multiple sections were studied from different areas. The sections from the haemorrhagic zones revealed blood clots with number of degenerating chorionic villi. Sections from a pale-yellow area of the mass revealed corpus luteum with degenerative chorionic villi. One of the sections from the firm capsule like area, showed ovarian cortical structure. Sections from the tube, endometrium with myometrium and cervix, were normal. Other tube and ovary were normal.

Discussion

The case reported above, fulfils all the criteria cited by Spiegelberg (1878) only one case is recorded in the last 10 years in our institution.

Incidence

Primary ovarian pregnancy is a rare entity. Hertig (1951), reported an incidence of 1 in 25,000 to 40,000 pregnancies and 0.7 to 1.07% of all ectopic pregnancies. Boronow *et al* (1963) in a period of over 19 years at Evanstone Hospital, Chicago, found four ovarian pregnancies in 36,914 pregnancies. Dowling *et al* (1960) reported one ovarian pregnancy in 59,740 pregnancies. Sakuntaladevi (1967) observed four ovarian

pregnancies among 31,512 pregnancies. Hence, there is a varied incidence of ovarian pregnancy from 0.22% to 5.1% of all ectopic pregnancy. This wide variation in the incidence, may be explained by the fact that it is easy to mistake other types of ectopic gestation or other conditions such as ruptured haemorrhagic follicular or corpus luteum cysts, chocolate cysts etc. for primary ovarian pregnancy.

Pathogenesis

The pathogenesis of ovarian pregnancy is poorly understood. Fertilization of ovum may occur before extrusion from where the ovum may have undergone full maturation while still inside, the follicle. (Rocks and Hertig, 1932) or something may delay its expulsion into intra follicular fertilization (Leopold, 1899). The other theory is fertilized ovum may slip of backwards from the lumen of the tube and get implanted in the recently ruptured follicle (Curtis, 1941). Novak (1961) supports Mayer's view that surface epithelium of the ovary differentiates into endometrium at places and attracts the ovum leading to its cortical implantation. Endometriosis and presence of embryonic Mullerian tissue in ovary has been quoted as fertile soil for implantation. Kheng Khoon Tan *et al*, 1968 opined that oopharitis with or without thickened tunica albugenia is a factor in retaining the fertilised ovum in the ovary or corpus luteum.

Classification

Wittenberg and Ries (1948) suggest that the ovarian pregnancy should be classified as primary, secondary or combined. The primary ovarian pregnancy may be (a) Intrafollicular where the fertilised ovum develops in the graffian follicle. (b) Extra follicular where the fertilised ovum implants and develops in

the ovarian tissue other than the graffian follicle.

According to the implantation, the primary ovarian pregnancy is also classified as juxta follicular, interstitial, cortical and superficial. Baden *et al* (1962) also recommend a similar classification based on the site of implantation and development of the fertilised ovum.

In the present case, the pregnancy was of Extra-follicular type.

Course and Termination

Rupture in the first trimester is the most usual rule in ovarian pregnancy but it may advance to full term (Rakshit, 1964 and Vaish, 1965). Occasionally lithopedian formation can occur.

Clinical Diagnosis

The signs and symptoms of ovarian pregnancy are similar to ectopic pregnancy. The appearance of the haemorrhagic ovary, seen at laparotomy may simulate a picture of a ruptured corpus luteum haemotoma but the associated history of amenorrhoea should arouse the suspicion of this rare variety of ectopic pregnancy to be proved only by subsequent histopathological study. At operation healthy condition of both the tubes must be carefully noted.

Ovarian pregnancy is said to be more common during the third and fourth decades of life. The present case is elderly female than the reported cases (Rajaram, 1967; Kalyanikutty *et al*, 1969; Das, 1974). According to Dalal (1964) the clinical findings such as older age, period of sterility etc., are said to be helpful in suspected cases of ovarian pregnancy. A period of sterility or relative infertility is a common feature for all ectopics. However, some workers like Rajaram (1967), Kalyanikutty (1969), Das (1974), have recorded ovarian pregnancy in not less fertile women. The present case is also

of the same type. A history of amenorrhea is absent in ovarian pregnancy in as much as 50% of the cases. In the present case, 4 months amenorrhea was noted. Most of the primary ovarian pregnancies, 75% to 90% terminate in the 1st trimester (Boronow *et al*, 1965).

The first attack of abdominal pain in the present case after a period of 8 weeks amenorrhea may be the symptom of a small rent of the gestational sac. The leak from the sac might have produced pain in abdomen and vomiting with abdominal rigidity. Ascariasis in this case may be an incidental finding. A week's stay might be sufficient enough to produce adhesions and minimise the symptoms of pain in abdomen.

This patient continued with her ovarian pregnancy for some time. She noted the gradually increasing mass in her lower abdomen. Because of adhesions, the mass appeared irregular and tender with a restricted above downwards motility. Prior to the second admission, she had second attack of the abdominal pain which was more severe. This might correspond to the second major rent of the gestational sac and death of the foetus. Some of the workers like Mitra and Das (1974), Gulati and Jain (1975) have also observed passing of the decidual cast or a prolonged bleeding per vagina.

Treatment has almost universally consisted of atleast the removal of the affected ovary and often of the corresponding fallopian tube.

Summary

1. A case of primary ovarian pregnancy is reported.

2. Its rare incidence, pathogenesis, classification, diagnosis and treatment, have been discussed.

9

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See Fig. on Art Paper IV