

PRIMARY OVARIAN PREGNANCY

(A Case Report with Review of Literature)

by

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Ovarian pregnancy is said to be as "... rare as a blue lion or a swan with two necks," according to Guilford quoted by Brenn (1960). Primary ovarian pregnancy is the least common of all ectopic pregnancies.

It was in the year 1614, that Mercerdus first described this relatively rare type of ectopic pregnancy. But the entity was fully accepted only after Spiegelberg, in the year 1878, had established his criteria for arriving at diagnosis. Saint Maurice of Perigord, France, in 1682, while doing an autopsy on a woman, who had died of acute pain in the right lower quadrant, discovered massive intraperitoneal haemorrhage with a foetus attached partially to the right ovary. The right ovary was torn longitudinally while the left ovary and both tubes were normal in appearance. This was, probably the first record of a primary ovarian pregnancy.

Case Report:

S. B. (5407/63), 37 year old, was admitted to our hospital on 15.4.63 with the complaint of lower abdominal pain for the

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past 1½ months, which had become worse for 3 days.

Following a period of 1½ months' amenorrhoea the patient had brownish red vaginal discharge for 3 days from 17th February 1963. Eighteen days later, while straining at stool she suddenly felt giddy. This was followed by severe pain in the abdomen and she was treated for it at home. Since then the patient continued to feel vague pain in the lower abdomen and was feeling progressively ill, for which she sought admission. There was no history of vomiting. There was nothing remarkable with micturition and defaecation.

Menstrual history was normal. Her last menstrual period was about 14 weeks prior to admission. She had had six full-term normal deliveries, the last one being 3 years ago.

The patient was anaemic. Pulse rate was 100 per minute. Temperature and blood pressure were normal. Slight tenderness was elicited all over the lower abdomen.

Pelvic examination revealed that uterus was slightly bigger than normal and was pushed backwards by a well defined, oblong, firm, mass, about 10 cm. in diameter, occupying the anterior and left fornices. Movements of the cervix did not elicit any tenderness. Cervix was healthy. Rectal examination confirmed the same physical findings.

Her haemoglobin was 10 gm. per cent. Red blood corpuscles 3 millions per cm. White blood corpuscles 8,600 per cm. Polymorphs 76%, lymphocytes 27%, eosinophils 3%. E.S.R. 20 mm. first hour and second hour reading was 32 mm. Blood group 'O'. Urine reaction was alkaline, no albumin or sugar, 2-4 pus cells per field were present. Galli Mianini test was positive.

Differential diagnosis between an ectopic pregnancy and a twisted ovarian cyst was considered. Hence laparotomy was indicated. Under general anaesthesia, on opening the peritoneal cavity no free or clotted blood was to be seen. There were some plastic adhesions between the omentum and the bladder; a mass was found lying in the utero-vesical pouch, measuring about $15 \times 10 \times 8$ cms. resembling a dermoid cyst. Uterus was slightly bigger than normal. The left tube including fimbriae was intact. The mass when traced was seen attached to the uterus by means of the ovarian ligament and was confirmed to be the left ovary. Right tube and ovary were normal. Left salpingo-oophorectomy was done.

The ovarian mass was oval in shape and size of a large orange (Fig. 1). When this was cut open, tissue suggestive of the ovary was noticeable. A foetus of 8 weeks within sac was seen inside the same (Fig. 2). On histopathological examination, chorionic villi and ovarian structure were seen in the sac wall (Fig. 3).

Comments

Although primary ovarian pregnancy was considered to be rare, as more cases are being reported its incidence is apparently increasing. Pewters (1956) could collect only 125 cases of primary ovarian pregnancy. But Badan and Hein (1952) while reporting pertinent facts from review of literature expressed difficulty in evaluating the number of authentic cases that were reported. Courtess, as quoted by Baden and Heins (1952), gave an incidence of 1 to 209 ectopic pregnancies, while Bacile gave this as 1 to 316. Baden and (1952) could place the incidence as one in 117 ectopic pregnancies or one in 2,500 pregnancies. There were two cases of primary ovarian pregnancy at this institution during the last five years (1960-

1964) among 54,026 deliveries in the same period, giving an incidence of one in 27,013.

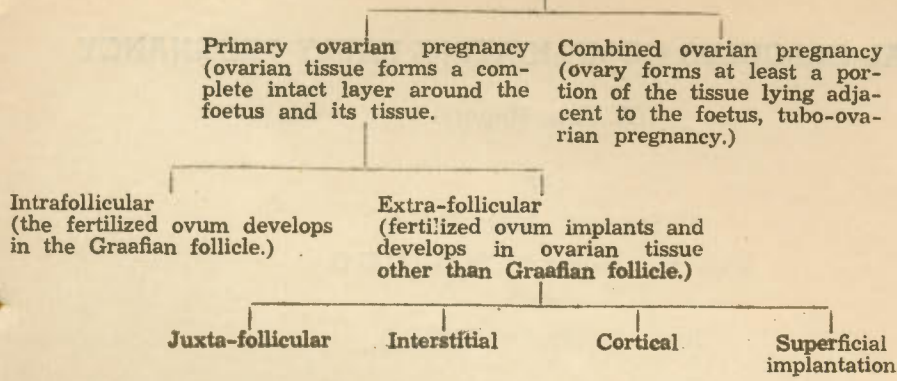
The mechanism of ovarian pregnancy is poorly understood. The theory postulated by Leopold as quoted by Garry and Parsons (1957) about the egg finding difficulty in escaping out of the follicle and getting subsequently fertilised in the follicle itself is no more accepted. Curtis (1941) suggested that the ovum gets fertilized in the tube and then slides backwards and gets implanted on the ovary or near the recently ruptured follicle.

Novak (1962) endorses the mechanism proposed by Meyers that the pregnancy occurs through cortical implantation of the egg, which is due to the differentiating potency of germinal epithelium. This theory is supported by the frequency with which ectopic endometrium is found in the ovary. Recently John and Gavin (1958) reported a case of ovarian pregnancy with endometriosis. This ectopic endometrium in the ovary favours nidation. While the maturation of the ovum within the oviduct is not considered necessary, the follicular ovum does undergo mitosis as part of the reduction division process. The ovum is ready for fertilization, while a virile spermatozoon could penetrate such an intrafollicular ovum. Yet other authors believe pelvic inflammatory disease as the basis for all ectopic pregnancies.

The most accepted criteria for diagnosing ovarian pregnancy are those postulated by Spiegelberg in the year 1878, which are satisfied in this case.

But Novis (1909) amplified the

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first postulate of Spiegelberg by stating that the tube must show no microscopic evidence of pregnancy. Stander in the year 1941, further enlarged the fourth criterion by requiring ovarian tissue to be found in several places at some distance from each other in the wall of the sac. By taking into consideration the amount of hypertrophy the ovarian stroma has to undergo to accommodate the growing foetus, and the stretching of the sac wall, Rama Vaish (1965) and Rakshit (1964) totally nullify the possibility of the fourth postulate in cases of advanced ovarian pregnancy. A positive evidence, according to Rakshit in arriving at a diagnosis is the finding of blood supply to the gestational sac through the ovarian vessels. This might be useful in arriving at a clinical diagnosis before his-topathological examination.

A practical classification of ovarian pregnancy based on the site of implantation and later development of fertilized ovum rather than on the site of fertilization was given by Baden *et al* (1952).

Summary

A case of primary ovarian pregnancy is reported. The clinical and histological criteria for its diagnosis are discussed. Theories regarding the mechanism of fertilisation in the ovary are reviewed.

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