

## Primary Ovarian Pregnancy

BY

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The first authentic case of primary ovarian pregnancy was published in 1899 by Van Tussenbroeck (MacLeod and Read, 1955). Ovarian pregnancy is rare and is estimated to occur once in 25,000 gestations (Baden and Heins, 1952). It is a well-defined pathological condition, the accepted criteria of diagnosis formulated by Speigelberg (1958—quoted by Peel) being as follows:

- (1) The tube on the affected side must be intact and separate from the ovary.
- (2) The gestation sac must occupy the position of the normal ovary.
- (3) The sac must be connected to the uterus by the ovarian ligament.
- (4) Ovarian tissue must be demonstrable in the wall of the sac.

As pointed out by Jeffcoate (1957) many apparent cases may be explained by an extruded tubal pregnancy becoming adherent to the surface of the ovary. In most authentic cases the preg-

nancy terminates in very early rupture with intra-abdominal haemorrhage, owing to the absence of any limiting musculature in the ovary. The following case is presented because of the rarity of this condition, its relatively advanced stage of gestation and the absence of rupture or intra-abdominal haemorrhage.

### CASE HISTORY

B.B., a 37-year-old secundipara was admitted to the gynaecological ward on 23rd February, 1967, with a history of having had her last menstrual period on 15th September, 1966, 23 weeks earlier. She had been well until mid-November when intermittent vaginal bleeding commenced amounting to half to two ounces almost daily. After two weeks, lower abdominal pain preceded the bleeding on some occasions when clots of blood were expelled per vaginam. She was admitted to hospital at this time and given a blood transfusion. After discharge from hospital, where a tentative diagnosis of threatened abortion had been made, a thick brown vaginal discharge persisted, but there was no further frank bleeding until a month later; she had no recurrence of pain. When the bleeding recurred she was again confined to bed. Sedation and Primolut (Scher-ing) injections were prescribed, but with little effect. Foetal movement had not been felt. The pregnancy test was positive.

Her previous history was not contributory; her only two previous pregnancies, labours and puerperia had been uncomplicated.

General examination showed no abnormality. Her temperature was 99°F., her pulse 82 per minute and her blood pressure 125/85 mm. Hg. Abdominal examination revealed a mass arising out of the pelvis and corresponding to an 18 weeks' gestation. The greater part of the mass was on the left side. It was smooth, not tender, doughy in consistency and limited in mobility. Speculum examination showed a blue cervix and altered blood issuing from the cervical canal. On bimanual examination the cervix was tender on movement and the abdominal mass was considered to be a pregnant uterus. There was slight tenderness but no adnexal mass was felt.

The haemoglobin was 76%, and there was a normochromic normocytic anaemia. The Kahn test and urinalysis were negative. The Gravindex (Ortho) pregnancy test was negative.

In view of the continued vaginal bleeding and negative pregnancy test, examination under anaesthesia was carried out on 28th February.

The uterus was found to be enlarged to the size of an 8 weeks' gestation and was separate from the abdominal mass and deviated to the right. The abdominal mass appeared to arise from the left adnexal region. The diagnosis was thought to be ectopic pregnancy, ovarian cyst associated with abortion or heterotopic pregnancy (Hassim, 1966) and laparotomy was carried out forthwith.

The abdomen was opened through a median subumbilical incision. No free blood was present in the peritoneal cavity. The uterus was enlarged and soft. The right Fallopian tube and ovary were normal. The left tube, including its fimbriated extremity and the mesosalpinx, were normal but stretched over and separate from an ovarian mass. After filmy adhesions to the omentum were divided the mass revealed itself as chocolate coloured, encapsulated by ovarian tissue and attached to the uterus by the ovarian ligament. Left salpingo-oophorectomy was performed. Peritoneal toilet was carried out and the abdomen closed. Two pints of blood were transfused before, during and after the operation. Recovery was uneventful except for anaemia of 68% for which iron was prescribed. Vaginal bleeding ceased on the fifth post-operative day. Prior to discharge on the 12th day, bimanual examination confirmed a normal parous uterus.

The histopathological report was: "Specimen showing (1) normal Fallopian tube and mesosalpinx, and (2) ovoid ovarian mass measuring 13

cm. x 11 cm. x 8 cm. Cross section of the mass shows a placenta and gestation sac containing a 9.5 cm. (crown-heel) foetus. (Fig. 1.) The pregnancy is surrounded by haemorrhage which in turn appears to be encapsulated by ovarian tissue. The mass is not in communication with the tube. Biopsies taken from several areas of the capsule around the pregnancy show the presence of ovarian tissue in every section. The Fallopian tube shows no abnormality. These features are consistent with the diagnosis of ovarian pregnancy."

#### DISCUSSION

It is generally believed that the second polar body is normally shed in the outer portion of the tube, and only then is the ovum mature and capable of fertilisation. To produce an ovarian pregnancy maturation of the ovum must, however, be completed soon after its extrusion from the Graafian follicle and before it enters the tube. It is probably because of this that ovarian pregnancies are so rare. The discharged ovum is fertilised and implantation may then occur intrafollicularly in the corpus luteum or juxtafollicularly. According to Novak and Woodruff (1963) the commonest mechanism is implantation on the cortex of the ovary; this is favoured by surface endometriosis. Although ovarian pregnancies usually terminate in early rupture, lithopaedion formation may occasionally occur and isolated cases resulting in the delivery of a live infant have been recorded. The source of external bleeding in ectopic pregnancy is the irregular shedding of the uterine decidua or endometrium whenever an area of placental separation occurs. With death of the foetus, the decidua is completely shed and vaginal bleeding therefore ceases.

The signs and symptoms of ovarian pregnancy may be indistinguishable from those of ectopic pregnancy at other sites such as the tube and the principles of treatment are the same. Salpingo-oophorectomy is usually necessary but it may sometimes be possible to conserve part of the affected ovary.

Hysterography has been advocated as an aid in the diagnosis of unruptured ovarian pregnancy. Hoberman (1965) reported a case with a history of amenorrhoea followed by irregular vaginal bleeding who presented with an adnexal mass and a negative pregnancy test. A hystrogram showed patent Fallopian tubes and lateral deviation of the uterus away from the mass. Unruptured ovarian pregnancy was diagnosed and this was confirmed at laparotomy. In the author's case,

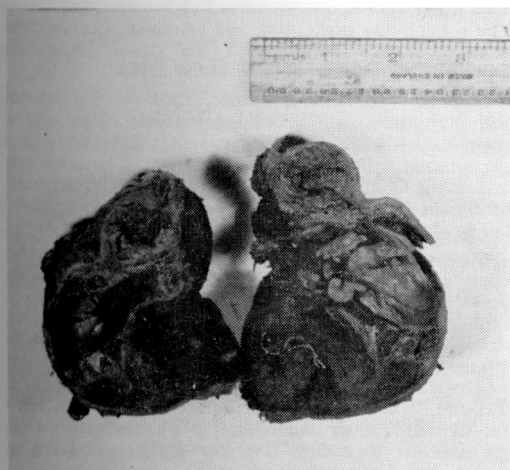


Fig. 1—Primary ovarian pregnancy bisected to show foetus in its gestation sac within the ovary. Arrow on right indicates isthmal end of Fallopian tube.

the correct diagnosis was made at laparotomy which was indicated on clinical grounds. It is likely that the diagnosis would have been made pre-operatively with the aid of hystero-graphy. The management, however, would have been the same.

#### SUMMARY

A case of unruptured ovarian pregnancy which fulfilled the criteria laid down by Spiegelberg, is described. The pathogenesis and clinical features are discussed.

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