CASE REPORT

OVARIAN PREGNANCY: A Morphologic Description


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This case report presents a 'true' ovarian pregnancy in a woman using a Dalkon shield. The gestational sac was implanted in the ovary close to the corpus luteum and contained a normally developed embryo of Carnegie Stage 11. A morphologic description of the embryo is given. The importance of a morphologic description of the conceptus in cases of ovarian pregnancy is discussed.

ovarian pregnancy; IUCD; embryo

Ovarian pregnancy is a rare entity with a frequency of one in 40,000 deliveries. In the general population ovarian pregnancy is seen in 200 ectopic pregnancies (Lehfeldt et al., 1970). Ovarian dysfunction as well as tubal dysfunction have been discussed as etiologic factors (Boronow et al., 1965). The rise in incidence of ovarian pregnancy in IUCD users (1 ovarian pregnancy in 9 ectopic pregnancies) does not seem to be caused by the IUCD itself. Lehfeldt et al. (1970) calculated that tubal pregnancies are less effectively prevented by IUCDs, while ovarian pregnancies are not prevented at all. The base of this theory (a high conception rate in IUCD users) seems to be confirmed in studies with the radioreceptor assay of hCG in the second half of the menstrual cycle (Landesman et al., 1976). Since 1966 reports of 33 cases of ovarian pregnancy associated with IUCD use have been published (Berger and Blechner, 1978).

The aim of this case report is to give a detailed morphologic description of such an ovarian pregnancy with special attention to the embryonic development.

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Figs. 1 and 2. Macroscopic pictures (A) with (B) explanatory diagrams of the resected
area of the ovary and the embryo.
Figs. 3 and 4. Light microscopic pictures (A) (H–E stain) and (B) explanatory diagrams of the ovary, corpus luteum and the embryo.
Figs. 5 and 6. Light microscopic pictures (A) (H–E stain) and (B) explanatory diagrams of the ovary, corpus luteum and the embryo.
Case report

A 30-yr-old patient with regular menstrual cycles was admitted 21 days after the onset of a period of vaginal bleeding. A Dalkon shield had been inserted after the latter of 2 uncomplicated pregnancies. Because of acute severe abdominal pain and a positive urinary pregnancy test, a laparotomy was done on the clinical diagnosis of an ectopic pregnancy. In the left ovary a moderately bleeding area was resected. The uterine tube was intact and apparently normal, including the fimbriated end. The postoperative course was uncomplicated.

Morphologic examination

A gestational sac measuring 5 mm in diameter was seen in the center of the resected ovarian tissue. The sac was opened and appeared to contain clear fluid and a 14-somite, 3-mm, Carnegie Stage 11 embryo (Fig. 1) with an estimated gestational age of 24–25 days (O’Rahilly, 1979). The intact amnion, the yolk-sac, the somites, the primitive gut and the heart cavities were clearly visible (Fig. 2). After embedding the whole specimen in paraffin, serial sections of 5 μm were made in a sagittal plane. Light microscopy showed the embryo and chorionic villi, surrounded by ovarian tissue, with decidual changes in close approximation to a recent corpus luteum (Figs. 3 and 4). At higher magnification many details of the normally developed embryo could be studied (Figs. 5 and 6).

Discussion

This ectopic pregnancy is a ‘true case’ of ovarian pregnancy according to the widely accepted criteria described by Spiegelberg (1878): (1) the uterine tube must be intact and clearly separated from the ovary; (2) the gestational sac must occupy the normal position of the ovary; (3) the gestational sac must be connected with the uterus by the ovarian ligament; (4) unquestionably ovarian tissue must be present in the wall of the sac. Especially the embryonic development is of interest when anomalies in maturation of the follicle or the ovulation process are discussed as a possible cause of the ovarian implantation. In tubal pregnancies pathologic ova (empty sac or lethal growth disorganization of the embryo) seem to be more frequent than in spontaneous abortion, with a slight preference for normal embryos in patients with pelvic infection (Poland et al., 1976). No information is available on the incidence of pathologic ova in ovarian pregnancy. Only in a few case reports is the existence of an embryo mentioned (Campbell et al., 1973). In their 13-yr survey of the English literature dealing with about 65 cases of ovarian pregnancy, Boronow et al. (1965) mentioned an identified embryo or fetus in 41%. However, this interesting fact does not give exact information about the incidence of pathologic ova.

These findings should encourage morphologic descriptions of the concep-
tus in case of an ovarian pregnancy. This case report demonstrates that such a description can be made even in a small bleeding area of the ovary.

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REFERENCES