

LUTEAL INSUFFICIENCY AND PELVIC ADHESIONS

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Abstract. A young woman with a history of a septic abortion and left oophorectomy for a dermoid cyst was investigated before and after laparotomy with regard to the function of the corpus luteum. At laparotomy the remaining right ovary was surrounded and fixed by thick adhesions around the ovary. The adhesions were removed. During two regular menstrual cycles before operation, low plasma levels of progesterone were found during the luteal phase. After the removal of the adhesions normal plasma levels of progesterone were found. The urinary excretion of oestrogens also improved. Severe pelvic adhesions might be one cause of insufficient luteal function.

for sterility, pelvic adhesions and enlargement of the remaining right ovary. At operation extensive pelvic adhesions were found, involving both the tubes and the right ovary. The tubes and the ovary were freed from the adhesions and a wedge resection was performed on the ovary. One year later the adhesions had reappeared and hormonal estimations showed signs of luteal insufficiency. Therefore, a new abdominal operation was done. This time the pelvic adhesions were even more extensive than at the previous laparotomy. The right ovary was surrounded and fixed by thick adhesions almost forming a capsule around it. The ovary was freed from the adhesions and fixed a few cm higher up in the pelvis.

The clinical term luteal insufficiency probably includes several endocrine abnormalities yet to be described. The availability of rapid assay methods for the main ovarian hormones (Brown et al., 1968; Johansson, 1969) facilitates the search for abnormal cycles. However, up to date most of the work on insufficient corpora lutea has been done on women taking contraceptive agents (Erb & Ludwig, 1965; Ludwig & Horowitz, 1969; Larsson-Cohn et al., 1970).

We wish to report a case of severe pelvic adhesions associated with poor function of the corpus luteum as judged by the urinary excretion of oestrogens and the plasma levels of progesterone.

CASE HISTORY

The patient was a married woman, aged 30 years, with menarche at the age of 14 and regular menstrual periods thereafter. A therapeutic abortion (5 months gestation) was performed without complications at the age of 19. Four years later she was admitted to the hospital with a septic abortion at 4 months. Later the same year a dermoid cyst of the left ovary was removed and a wedge resection was performed on the right ovary due to enlargement. At the age of 27 the woman was readmitted

HORMONAL FINDINGS

Four menstrual cycles were investigated, two before and two after the last laparotomy, by the excretion of total oestrogens measured by the method of Brown et al. (1968) and by the plasma levels of progesterone measured by the method of Johansson (1969).

In the cycle collected 3 months before surgery (Fig. 1) a normal mid-cycle peak of total urinary oestrogens was found but no distinct luteal rise could be observed. The mid-cycle peak of luteinizing hormone, as measured by Wide (Wide & Porath, 1966), was found to be normal. The levels of plasma progesterone rose very slowly after the mid-cycle peak of total oestrogens and did not reach the high levels found in normal cycles (Johansson, 1969). The length of the luteal phase was normal. This observation was confirmed in the next preoperative cycle.

Four months after the laparotomy another cycle was investigated (Fig. 1). The urinary excretion of total oestrogens was found to be within the normal limits determined in this laboratory. The levels of plasma progesterone rose steadily after

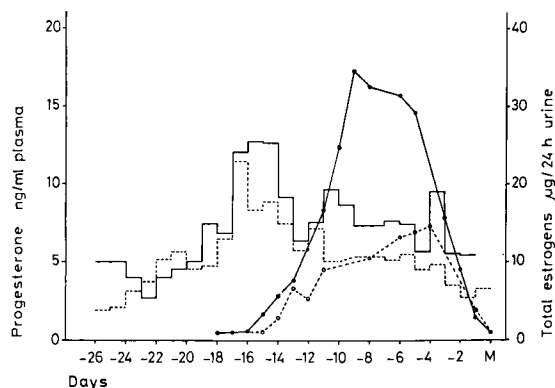


Fig. 1. Total urinary oestrogens and plasma progesterone during a menstrual cycle before and after operation for severe pelvic adhesions. ---, before operation; —, after operation.

the mid-cycle peak of total oestrogens to reach a plateau around 15 ng/ml plasma for 5 days as in normal cycles (Johansson, 1969). This finding was confirmed in the following cycle. The length of the menstrual cycles was not affected by the surgery.

The increased plasma progesterone levels after surgery is even more apparant when the values are summarized day by day. Before surgery 65.4 and 58.7 ng was found as compared to 140.0 and 159.1 ng in the two cycles after surgery. The sum reached before surgery is below the lowest value of 30 normal individual cycles investigated in this laboratory.

It is possible that adhesions round the ovary cause the egg to remain in the follicle in spite of rupture and luteinization. Trapping of the egg has been proposed as one reason for impaired luteal function (Ludwig & Horowitz, 1969).

The case reported here suggests that local factors such as adhesions around the ovary can be responsible for insufficient function.

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