The Influence of Endometriosis on Early Embryonic Development. A Study in the Rabbit

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Endometriosis has an adverse effect on fertility. In severe endometriosis adhesions interfere with ovulation and tubal function. The mechanism by which mild endometriosis causes infertility remains unclear. We studied the effects of endometrial implants on early embryonic development in the rabbit. In 50 virgin Dutch belted rabbits 1 cm of the right uterine horn was resected and divided in four equal parts. Adipose tissue was resected from the juxtauterine fat. In 25 rabbits (group I) the endometrial tissue was sutured onto the peritoneum at the right lateral abdominal wall using 6.0 prolene, the fat was discarded. In 25 rabbits (group II) the fat was sutured onto the peritoneum in the same way, the endometrial tissue was discarded. After a recovery period of 12 weeks the does were mated and sacrificed 24 h after mating. The abdominal cavity was carefully inspected for adhesions. The oviducts were flushed after excision and checked for the presence of embryos. Parameters of embryonic development were studied. In group I the implantations led to cysts filled with yellow or brown fluid. Histological examination revealed endometrial glands and stroma in all specimens. Adhesions were absent in 4, mild in 8 and moderate in 13 rabbits. The ovaries and oviducts were completely free of adhesions in all rabbits. In group II the fat tissue had not changed. Adhesions were absent in 17, mild in 6 and moderate in 2 rabbits. The number of corpora lutea, the fertilization rate and tubal transport did not differ significantly in the groups investigated. Embryonic cleavage stage was not different in either group 24 h after mating. From these data we conclude that endometrial implants onto the peritoneum in rabbits do not influence the ovulatory mechanism, the fertilization of the ova, the embryonic cleavage and the tubal transport of the fertilized ova in the first 24 h after mating. From in vitro fertilization studies it is known that in patients with mild endometriosis there is a normal capacity of the ovaries to be fertilized and to cleave. Our data obtained in an experimental model seem to support these findings and suggest a post-fertilization problem responsible for the reduced fertility in mild endometriosis.

Chemiluminescence of Peritoneal Macrophages in Endometriosis

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In recent years much attention has been paid to the possible role of peritoneal fluid constituents in the etiology of subfertility in endometriosis. We studied the functional activity of macrophages in the peritoneal fluid. Peritoneal fluid was collected in the periovulatory phase of the cycle in 29 women undergoing laparoscopy. At laparoscopy