IMPACT OF ADENOMYOSIS ON ESTRUS CYCLE AND OVARIAN FUNCTION IN MICE.

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Abstract Body

Adenomyosis is a benign uterine disorder characterized by the presence of heterotopic endometrial glands and stroma in the myometrium. Adenomyosis is completely asymptomatic in approximatively one third of cases. The most symptoms in the remaining two thirds are menorrhagia, dysmenorrhea, metrorrhagia and infertility. Since adenomyosis was first thought to affect older women and diagnosed during histological examination of the uterus after hysterectomy, the association with infertility has not been studied in women of reproductive age. However, several recent studies demonstrated that the presence of adenomyosis in young women may impair the fertility by altering endometrial function. Adenomyosis also seems to have a detrimental impact on the results of in vitro fertilization although a confounding effect of associated endometriosis cannot be excluded. So far, fertility in women with adenomyosis without endometriosis has not been assessed. To achieve fertility outcome analysis, we used a murine model of adenomyosis that consists of dosing CD1 mice from their first day of life for 4 consecutive days with tamoxifen. Two months later, vaginal smears of all mice were performed during 14 days to analyze the estrus cycle. Mice suffering from adenomyosis displayed clear disturbance of their estrus cycle. Tamoxifen-treated mice had a longer estrus and a shorter diestrus as compared to control mice. At 3 months old, all mice were sacrificed. The diagnosis of adenomyosis in tamoxifen-treated mice was confirmed by histological analysis. Since disturbances of estrus cyclicity could be related to ovarian dysfunction, we further performed analysis of all recovered ovaries. The percentage of some types of follicles per ovary was significatively different between adenomyosis-induced mice and control mice. In conclusion, perceived cycle disturbances in adenomyosis-induced mice are related to ovarian abnormalities but also probably to hypothalamic-pituitary dysfunction.