Investigation of eutopic endometrium in women with endometriosis as potentially valuable tool for preclinical diagnosis

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Introduction

Endometriosis is one of the most enigmatic problems of modern gynecology. It?s characterized by the presence of functional endometrial tissue outside the uterus. Most of studies available suggest that women with endometriosis have a lower fecundity than women without endometriosis. Moderate and severe stages of endometriosis may lead to anatomic distortion and interfere with fecundity. In contrast, milder forms of endometriosis also significantly impair fecundity but much less clinically evident. It?s well known that removal of endometriosis lesions during surgical procedures greatly increases the probability of spontaneous pregnancy. However, pre-clinical diagnosis of endometriosis in the early stages is difficult and in most cases require laparoscopic intervention. Recent studies have shown that eutopic endometrium in patients with endometriosis is different from that in healthy women in its immunohistochemical structure

Objective: To investigate immunohistochemical features of eutopic endometrium in women with genital endometriosis and find possible early markers of the disease.

Patients and methods

Samples of eutopic and heterotopic endometrium in 15 reproductive age women with infertility and laparoscopically confirmed endometriosis and endometrium in 15 reproductive age women with infertility and laparoscopically excluded endometriosis were taken in the proliferative phase of menstrual cycle. For immunohistochemical study we used 4 primary monoclonal antibodies (Termo Scientific, USA): estrogen (ER) and progesterone receptors (PR), apoptosis inhibitor (bcl-2), and matrix metalloproteinase (MMP-9).

Results

Eutopic endometrium in women with endometriosis had higher expression of ER and PR than heterotopic one. Expression of Bcl-2 and MMP-9 in endometriosis was not significantly different from the eutopic endometrium. Interestingly, in women with endometriosis the expression of ER, Bcl-2 and MMP-9 in eutopic endometrium was significantly higher and PR lower than the expression of corresponding markers in eutopic endometrium of healthy subjects.

Conclusion

Eutopic endometrium of women with endometriosis has features that are comparable to those of ectopic one. Specific features of eutopic endometrium in women with endometriosis could be important tool for preclinical diagnosis in infertile patients what could allow to perform timely laparoscopy with better results of surgery in correction of subfertility.

Mots clefs: endometriosis, infertility, immunohistochemistry, early diagnosis

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