COMPREHENSIVE STUDY OF THE ENDOMETRIUM OF WOMEN WITH REPRODUCTIVE DISORDERS AND CHRONIC ENDOMETRITIS

Our comprehensive study of the endometrium (hysteroscopic, morphological, and immunological research of genital infections) of patients with reproductive disorders has revealed a high frequency (73.8%) of hyperplastic processes of endometrium (endometrial hyperplasia, polyps), also in the most cases (73.8%) - infection of the endometrium with a predominance of microbial associations (78.6%) and mycoplasma infections (33.2%).

Keywords: Hysteroscopy, endometrial, mycoplasma infection

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The study of the endometrium and the development of new methods of rehabilitation therapy for women with reproductive disorders is important issue in modern obstetrics. Violations of the proliferative activity of the endometrium, the presence of persistent infection and changes in local immunity are the main causes of obstetric and perinatal complications (Adamian and Kulakov, 1997; Donders, Van Bulek, Caudron et al., 2000; Vikhlyaeva, 2002).

The aim of this work was studying the hysteroscopic endometrium and its integrated study (immunological, histological, bacteriological and PCR) of 84 patients with a violation of the reproductive function to determine the role of persistent mycoplasma infection. Endoscopic exploration of the uterine cavity was carried out using the “KARL STORZ” (Germany). We used saline solution as the liquid medium. After removing the polyps, polypoid formations and doing endometrial sampling for the immunological, histological, bacteriological and PCR study, we carried out a hysteroscopic control research, which made it possible to evaluate the effectiveness of the operation.

A visual study of the uterus showed that the endometrium had no pathology and corresponded to the phase of the menstrual cycle in 26.2% of cases and other 73.8% revealed various pathologies of the endometrium. Herewith, the most common pathology of endometrium were various hyperplastic processes (in 70.9% of cases - glandular and glandular-fibrous hyperplasia, various types of polyps).

We noticed the endoscopic differences between the fibrous and glandular polyps, which were appearing in different sizes and shapes of polyps localization. With hysteroscopy, fibrous polyps were often determined as a single pale formation of round or oval shape, with a small size (0.5 cm). Most polyps were located in the bottom of the uterus, near the ostium of the uterine tubes. Glandular polyps, in contrast to fibrous were larger in size (0.5 to 5-6 cm) and in most cases were multiple. The colors of the polyps were pale-pink and gray-pink; the tip of the polyp - a dark purple or blue-purple color. We spotted vessels in the shape of capillary net on the surface of the polyp. The symptoms of chronic endometritis were characterized by increased vascular pattern, edema and focal hyperemia of the endometrium, which were noted in 19.04% of cases.

In about the same percentage of cases we revealed endometriosis of the uterus - 2.4% and intrauterine adhesions - 2.4%. With adenomyosis, the endoscopy took form of the “eyes” of dark-purple color on the background of relief of the uterine walls. Upon detection of intrauterine synechia: the uterus is divided by vertical spikes of whitish color, the volume of the cavity is reduced.

Thus, according to the hysteroscopic pictures, 73.8% of patients with reproductive disorders had hyperplasia of the endometrium (endometrial hyperplasia, polyps), whereas,
According to the literature of gynecological patients, the endometrial hyperplasia was found in 28% of cases.

The results of histological examination of endometrial scrapings of the study group are presented in Table 1.

**Table 1. Morphological Characteristics of Endometrial Scraping in the Investigated Group**

<table>
<thead>
<tr>
<th>Histological conclusion</th>
<th>Absolute number</th>
<th>M±m%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperplasia of endometrium:</td>
<td>62</td>
<td>73.8±4.8</td>
</tr>
<tr>
<td>Glandular-fibrous</td>
<td>16</td>
<td>19.0±4.2</td>
</tr>
<tr>
<td>Glandular</td>
<td>26</td>
<td>30.9±5.0</td>
</tr>
<tr>
<td>Focal (Polyps)</td>
<td>22</td>
<td>26.1±4.7</td>
</tr>
<tr>
<td>Endometritis</td>
<td>18</td>
<td>21.4±4.4</td>
</tr>
<tr>
<td>Endometriosis</td>
<td>2</td>
<td>2.4±1.6</td>
</tr>
<tr>
<td>Synechia</td>
<td>2</td>
<td>2.4±1.6</td>
</tr>
</tbody>
</table>

Results of morphological examination of the endometrium (Table 1) shows that patients from the study group often had hyperplasia of endometrium. The glandular endometrial hyperplasia was frequently encountered (30.9% of cases), endometrial polyps were also noted with a high frequency - 26.1% of cases (focal hyperplasia), and fibrous glandular hyperplasia was diagnosed in 19.04% of cases. This may be due to local effects of damaging factors: pathological changes in the neuroreceptorial apparatus the endometrium, due to the frequent scraping of the uterine cavity, violations of protective barriers of genitals and integrity of epithelial coverings as a result of chronic inflammatory diseases of the uterus and its appendages.

The results of examination of patients with reproductive disorders on the genital infections, revealed by the PCR analysis, showed, that the co-infection of the endometrium was the most frequently observed (78.6% of cases), and only 21.4% of cases observed mono infection. Herewith, 7.1% of the cases were with combination of Mycoplasma and Trichomonas infections, 9.5% of cases showed microbial associations of chlamydia and gardnerella. The most common infection of the endometrium in the study group was mycoplasma infection (33.2%) and chlamydia infection (28.6%). Bacterial vaginosis occurred in 22.6% of observations, and viral infection occurred in 30.9% of cases.

It is important to note that the frequency of revealing infections from the cervix and uterus are not the same. Thus, bacteriological examination of patients’ cervical canal revealed only 10.7% of certain types of infectious agents or their combination. Bacteriological examination of endometrial scrapings showed that 57.1% of patients had semination with various opportunistic pathogens. The high frequency (72.6%) of revealing various pathogenic and opportunistic-pathogenic microorganisms with hyperplastic processes of endometrium also draws the attention.

Thereby, these studies once again confirm the high rate (73.8%) of infection of women with reproductive disorders (infertility, miscarriages) in anamnesis. Among the variety of microbial agents persisting in the endometrium of women of the study group, dominant role belongs to the mycoplasma infection (33.2%) and microbial associations (78.6%). When comparing the data of bacteriological and morphological studies of the endometrium, it is note the presence of hyperplastic processes of endometrium of women with known pathogenic and/or opportunistic-pathogenic microflora.

To determine the immunological parameters of the endometrium of women’s study group, we investigated the endometrial scraping in the phase of secretion. Parameters of immunological status are shown in Table 2.
The data presented shows that at the local level, women with obstetric and gynecological anamnesis, had a significant increase in the total content of B-lymphocytes (17.8±5.7%), compared with endometrium from healthy fertile women (4.0±0.7%). At the same time, there was a reduction of mature T-lymphocytes (18.8±6.45% in the control - 40.0±3.4%) and subpopulations of cells with cytotoxic activity (12.3±5.1% in the control group - 21.2±2.4%).

Thus, patients with obstetric and gynecological anamnesis had an increment of B-lymphocytes, which is normal for the infectious process. Spontaneous abortions are associated with deficiency of local suppressive activity, as reflected in the reduction of almost 2 times in the level of T-suppressors. The decrease of T-cells may be associated with a change in the profile of cytokine expression and therefore with the impossibility of adequate production of growth factors of the fetus.

Hereby, we conducted a comprehensive study of the endometrium (hysteroscopic, morphological, and immunological research on genital infection) of patients with reproductive disorders and revealed a high frequency (73.8%) of hyperplastic processes of endometrium (endometrial hyperplasia, polyps), and in the most cases (73.8%), infection of the endometrium with a predominance of microbial associations (78.6%) and mycoplasma infections (33.2%). We also revealed the changes, characteristic for infectious processes of immunological parameters of the endometrium.

**References**

Adamyan, L., Kulakov, V., 1997, Hysteroscopy in the diagnosis and treatment of diseases of the uterus [Giteroscopiya v diagnosah i lechenii matochnyh zabolvanii], in Russian, Moscow: Medicine
