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Research Article

NUANCES OF COLPOCYTOGRAMS WHEN USING SILVER-CONTAINING INTRAUTERINE DEVICES.

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Abstract.

Aim. The purpose of this study was to research the peculiarities of women colpocytograms with prolonged silver-containing intrauterine contraception and after it.

Materials and methods. Smear scrapings from the ectocervix and from the lower endocervix were studied in 425 women aged 20-51 years who used silver-containing IUDs for 3 months to 7 years. The control group consisted of 400 women aged 19–48 years who did not use contraception (material for the study was obtained during gynecological examinations).

Results. During the study it was found out that with silver-containing intrauterine contraception in some women, colpocytograms show the increase in the number of leukocytes, lymphocytes and histiocytes, which in most cases should be considered as the reaction of the body to the foreign body, and not as the inflammatory process. The detected proliferative changes in the epithelium of ectocervix and endocervix indicate the need for continuous colpositological examination of women during and after intrauterine contraception

Keywords: silver-containing intrauterine contraception, colpocytograms, inflammation, proliferative changes.

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INTRODUCTION:

Today, the effectiveness of intrauterine contraception (IUD) is not in doubt [1,2]. About 150 million women worldwide use IUDs. Intrauterine devices (IUDs) are widely used around the world [3,4,5]. Most often, women who need contraception for a long period of time resort to the use of an IUD [6,7,8]. In this regard, questions concerning the study of cytomorphological changes in the uterine mucosa when using this method of pregnancy prevention are of great importance [9,10].

Intrauterine contraceptives are the most popular because they are economically accessible, highly effective, do not have a systemic effect on the body, and do not require constant self-monitoring [11,12,13]. Fertility is restored within 1-2 months after their removal [14,15]. Currently, intrauterine devices with various additives such as copper, silver or hormonal drugs are most widely used, which significantly increases their contraceptive capabilities and reduces the number of negative manifestations [16,17]. The Pearl index when using modern intrauterine devices is 0.7-2.2 [18].

When evaluating clinical efficacy, not only the frequency of pregnancy is considered, but also the frequency of termination of the use of IUDs due to spontaneous expulsion or removal for medical reasons. The expulsion index (per 100 women / years) is 3.3–9.4, the contraceptive removal index is 4.2–7.2. Acceptability (frequency of continued application of the method) ranges from 80.9 to 87.6% [19,20,21]

In the data available in the literature, the period of use of the silver-containing IUD in most cases is limited to 1–5 years [2, 12].

The purpose of this study was to research the peculiarities of women colpocytograms with prolonged silver-containing intrauterine contraception and after it.

MATERIALS AND METHODS:

Smear scrapings from the ectocervix and from the lower endocervix were studied in 425 women aged 20-51 years who used silver-containing IUDs for 3 months to 7 years. The control group consisted of 400 women aged 19–48 years who did not use contraception (material for the study was obtained during gynecological examinations). Smears were fixed and stained with azure-eosin. If necessary, a histological examination of scrapings of the cervical canal or biopsy specimens from the cervix was performed. The data obtained were processed statistically using the Fisher LSD.

RESULTS AND DISCUSSION:

As the result of the study, it was found that in most cases ($95,2 \pm 3,8\%$) the normal cytological picture was found in smears from the cervix. With various durations of using silver-containing IUDs, the presence of Doderlein bacillus was noted in colpocytograms, which indicated the preservation of normal vaginal microflora. It should be noted that with the use of silver-containing IUDs, the III degree of vaginal purity ($10,1 \pm 3,3\%$) was more often observed compared with the initial state ($3,9 \pm 0,5\%$; $p < 0,05$). However, the absence of changes in the structure of cells and pathogenic flora, clinical manifestations of the inflammatory process allowed us to consider these changes as the local reaction to the foreign body, and not as inflammation.

Only $3,0 + 0,45\%$ of women (in the control group $3,5 \pm 0,4\%$; $p > 0,05$) were found to have abundant cell detritus, a large number of leukocytes and mucus, pathogenic flora (cocci, mushrooms, etc.) The cells of the squamous epithelium changed by inflammation were located in smears in groups, often their edges came into contact with segmented leukocytes. The cell boundaries were fuzzy, their shape was almost unchanged. The cells were slightly enlarged, their cytoplasm was eosinophilic or basophilic, and enlightenment zones were often found around the nuclei. In the nuclei, coarsening of chromatin lumps, the formation of small achromatin zones were noted. A similar cytological picture was evaluated by us as the inflammatory type of smear.

In $2,1 \pm 0,3\%$ of patients (in the control group $1,7 + 0,3\%$; $p > 0,05$) in the cytograms, the squamous cells' nuclei were enlarged, hyperchromically stained, acquired an irregular shape, the chromatin structure became coarse-grained. The shape of the cells changed insignificantly; vacuolization was noted in their cytoplasm. These cytological pictures are regarded by us as dysplasia of squamous epithelium. In 9 cases, the described changes covered mainly basal and parabasal cells and were assigned to mild dysplasia. In 3 observations, the cells of the intermediate layer (occasionally superficial) underwent changes, which allowed us to consider them as moderately expressed epithelial dysplasia. The cytological diagnosis is confirmed by histological examination. Re-examination of these patients was carried out every 3 months. Progression of the process was not detected in any case. In 9 women, silver-containing IUDs were removed, with subsequent cytological control within 1 year after recovery. In 3 cases, dysplasia was regressed, in 3 remained stable. These data indicate that cervical dysplasia with the use of silver-containing IUDs is unstable. The frequency of pathological changes in the cervical epithelium according to the results of colpocytological

examination did not depend on the duration of the use of silver-containing IUDs.

Analysis of smears from the lower third of the cervical canal showed that in $95,2 \pm 1,5\%$ of women who used silver-containing IUDs, cytograms were without pathological changes. In $5,8 \pm 0,5\%$ of cases (in the control group $2,25 \pm 0,15\%$; $p < 0,05$), there was the increased number of leukocytes, lymphocytes, and histiocytes without specific flora and cell morphology disorders. Similar cytograms were considered as reactions of an organism to a foreign body.

In $2,5 + 0,2\%$ of women (in the control group $3,2 \pm 0,5\%$; $p > 0,05$), in the presence of the large number of leukocytes and lymphocytes in the preparations, abundance of mucus and pathogenic coccal flora, cytograms were classified as inflammatory type.

In $2,3 + 0,4\%$ of cases (in the control group $0,5 + 0,1\%$; $p < 0,05$), hyperplastic changes in the endocervical epithelium were revealed. However, proliferation was not pronounced and in no case were signs of atypia determined, which was further confirmed by histological examination of scrapings of the cervical canal. In 1 of these women, the morphological study of scrapings of the endocervical mucosa was diagnosed with glandular fibrous polyps.

The frequency of hyperplastic changes in the epithelium of the cervical canal increased significantly with prolonged (6-7 years) use of silver-containing IUDs, which may indicate their reactive nature. During a dynamic cytological examination of such women after removing of silver-containing IUDs, hyperplastic changes in the cervical epithelium were not detected in most cases.

In 1 woman, 34 years old, 6 years after the insertion of the silver-containing IUD, the cytological examination revealed the picture characteristic of squamous cervical cancer [2, 4]. In previous analyzes of vaginal smears and smears from the external pharynx of the cervical canal, atypism of cells was not found. After removal of the IUD, the patient underwent surgical treatment. In the morphological study of the surgical material, intraepithelial cervical cancer was diagnosed. No pathology was found in endometrial scraping.

CONCLUSION:

Thus, the data obtained indicate that with silver-containing intrauterine contraception in some women, colpocytograms show the increase in the number of leukocytes, lymphocytes and histiocytes, which in most cases should be considered as the reaction of the body to a foreign body, and not as

the inflammatory process. The detected proliferative changes in the epithelium of ectocervix and endocervix indicate the need for continuous colpositological examination of women during and after intrauterine contraception.

List of symbols and Abbreviations:

IUDs - intrauterine devices.

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