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Research Article

**CYTOMORPHOLOGICAL STUDY OF ENDO- AND
ECTOCERVIX IN PATIENTS WITH SILVER-CONTAINING
INTRAUTERINE DEVICES**¹Petrov Yu.A., ²Kupina A.D.

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¹ Doctor of Medicine, Professor, Department of Obstetrics and Gynecology № 2, Federal State Budgetary Educational Institution of Higher Education «Rostov State Medical University» of the Ministry of Healthcare of the Russian Federation, Rostov-on-Don, Russian Federation -mr.doktorpetrov@mail.ru²Clinical Resident of the Department of Obstetrics and Gynecology №2 Federal State Budgetary Educational Institution of Higher Education «Rostov State Medical University» of the Ministry of Healthcare of the Russian Federation, 344022, Rostov-on-Don, Russian Federation – anastasya1997@bk.ru**Article Received:** January 2020**Accepted:** February 2020**Published:** March 2020**Abstract:**

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

Materials and methods. Smear scrapings from the ectocervix and the lower endocervix were studied in 380 women aged 20-45 years who used silver-containing intrauterine contraceptive devices for 3 months-7 years. The control group consisted of 396 women aged 20-45 years who did not use contraception (the material was obtained during gynecological preventive examinations).

Results. During the study it was revealed that with intrauterine contraception in some women, the increase in the number of leukocytes, lymphocytes and histiocytes was noted in colpocytograms, which in most cases should be considered as the reaction of the organism to the foreign body (silver-containing intrauterine contraceptive devices), and not as an inflammatory process. However, these changes were less common with silver-containing contraceptives and were less pronounced compared with women using indifferent IUDs.

Keywords: silver-containing intrauterine contraceptive devices, hyperplasia, cervical dysplasia, colpocytogram.

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INTRODUCTION:

Health issues for women and future generations are put forward as health priorities [1]. Given the adverse effect of artificial termination of pregnancy on the woman's body, which is often the cause of inflammatory diseases of the reproductive system (primarily chronic endometritis [2,3,4], which in turn leads to infertility, self-abortion and undeveloped pregnancy, and other complications of pregnancy and childbirth [5,6,7]), abortion cannot be considered as a rational method of birth control.

In recent decades, various types of intrauterine contraceptives (IUDs) are widely used around the world [8,9]. In this regard, questions concerning the study of cytomorphological changes in the mucous membrane of the uterine body and cervix when using this method of pregnancy prevention [10,11,12] are of great importance.

The frequency of precancerous and cancerous diseases of the cervix in connection with the use of intrauterine contraceptives should be clarified not only because some types of IUDs have processes or threads hanging in the cervical canal and vagina, but also because the presence of IUDs in some cases enhances secretion from the cavity the uterus, which can damage the cervical mucosa [13]. Dysregenerative processes in the transition zone can, in turn, be prerequisites for the development of dysplasia, and later cervical cancer. Therefore, the study of the cytology of smears from the cervix and endocervix is absolutely necessary to detect possible precancerous changes and cancer associated with the use of IUDs [11,14]. In the sources available in the literature, the period of use of IUDs in most cases is limited to 12-18 months [15,16,17]. There are very few studies on the use of silver-containing intrauterine contraceptives.

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

MATERIALS AND METHODS:

Smear scrapings from the ectocervix and the lower endocervix were studied in 380 women aged 20-45 years who used silver-containing IUDs for 3 months-7 years. The control group consisted of 396 women aged 20-45 years who did not use contraception (the material was obtained during gynecological preventive examinations).

The smears were fixed and stained with azure-eosin. The histological examination of scrapings of the cervical canal or biopsy specimens from the cervix were performed, when (if) necessary. 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 ($95 \pm 4.4\%$) the normal cytological picture was found in smears from the cervix. At various durations of using silver-containing IUDs in colpocytograms, the presence of Doderlein bacillus were noted, which indicated the preservation of the normal vaginal flora. It should be noted that when silver-containing IUDs were used, the III vaginal cleanliness ($8.9 \pm 2.5\%$) was more often observed compared with the initial state ($4.1 \pm 0.3\%$; $p < 0.05$). 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 a foreign body, and not as inflammation [18].

Only in $3.0 \pm 0.4\%$ of women (in control $3.4 \pm 0.6\%$; $p > 0.05$), abundant cellular detritus, a large number of leukocytes and mucus, pathogenic flora served as the background of smear-scrapings (cocci, fungi, etc.). The cells of the squamous epithelium changed by inflammation were located in smears in groups, often their membranes came into contact with segmented leukocytes. The cell borders were fuzzy, their shape was almost unchanged. The cells were slightly enlarged in size; their cytoplasm was eosinophilic or basophilic, around the nucleus often found areas of enlightenment. Enlargement of chromatin masses, the formation of small achromatin zones were noted in the nuclei. The similar cytological picture was evaluated by us as the inflammatory type of smear.

In $1.9 \pm 0.15\%$ of patients (in the control, $1.71 \pm 0.15\%$; $p > 0.05$) in the cytograms of the nucleus of squamous cells were enlarged, hyperchromic, acquired an irregular shape chromatin masses were large. The shape of the cells changed insignificantly; vacuolization was noted in their cytoplasm. These cytological patterns were regarded by us as dysplasia of squamous epithelium [19, 20].

In 10 cases, the described changes covered mainly basal and parabasal cells and were assigned to mild dysplasia.

In 2 observations, cells of the intermediate layer (occasionally superficial) underwent changes, which made it possible to consider them as moderately expressed epithelial dysplasia. The cytological diagnosis was confirmed by histological examination.

Re-examination of these patients was carried out every 3 months. The progression of the process was

not detected in any case. In 11 women, the silver-containing IUD was removed, with subsequent cytological control, within a year after extraction of the IUD, in 7 cases dysplasia regressed, in 4 remained stable. These data indicate that cervical epithelial dysplasia with the use of silver-containing IUDs is not constant. The frequency of pathological changes in the cervical epithelium according to the results of colpositological examination did not depend on the duration of the use of silver-containing IUD.

Analysis of the smears from the lower third of the cervical canal showed that $95.7 \pm 1.9\%$ of women who used silver-containing IUDs had cytograms without pathological changes. In $6.6 \pm 0.75\%$ of cases (in the control $2.2 \pm 0.3\%$; $p < 0.05$), the smears showed 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 the foreign body. Other authors adhere to the similar opinion [14].

In $2.7 \pm 0.25\%$ of women (in the control $3.2 \pm 0.65\%$; $p > 0.05$) with the large number of leukocytes and lymphocytes, abundance of mucus and pathogenic coccal flora, cytograms were assigned to the inflammatory type.

In $2.3 \pm 0.15\%$ of cases (in the control group $0.47 \pm 0.15\%$; $p < 0.05$), hyperplastic changes in endocervical epithelium were revealed. However, proliferation was not pronounced, in no case were signs of atypia determined, which was further confirmed by histological examination of scrapings of the cervical canal. In 2 of these women, the morphological study of scrapings of the endocervical mucosa revealed glandular fibrous polyps.

The frequency of hyperplastic changes in the epithelium of the cervical canal increased significantly with the prolonged (more than 5 years) use of silver-containing IUDs, which may indicate their reactive nature. During the dynamic cytological examination of such women after extraction of the silver-containing IUD, hyperplastic changes in the cervical epithelium were not detected in most cases.

CONCLUSION:

Thus, the data obtained indicate that with intrauterine contraception in some women, the increase in the number of leukocytes, lymphocytes and histiocytes was noted in colpocytograms, which in most cases should be considered as the reaction of the organism to a foreign body, and not as an inflammatory process. However, these changes were less common with silver-containing

contraceptives and were less pronounced compared with women using indifferent IUDs [20]. 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 [22,23].

List of symbols and Abbreviations

IUDs - intrauterine contraceptive devices

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