Cytological Study of Vaginal Smears of Women of Fertility Age in the Screening Population

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Abstract

The aim of this study was to assess the significance and information content of the cytological study of vaginal smears in the study of the reproductive sphere of women of fertility age by screening the population. For discharges from the upper vagina, injected mirror and forceps jaws take the discharge. If you want to take a spin-off from the cervical canal, the vaginal part of the uterus exposed mirrors, the outer mouth is rubbed with a sterile cotton ball, and Volkmann spoon or forceps jaws are taken from the cervical canal discharge. After preparing smears carried out by Romanovsky–Gimza staining of micropreparations, they are examined under a microscope for abnormal cells. This study discusses the importance of and the need for cytology of vaginal smears for early detection of changes in the structure of the epithelial cells of the mucous membrane of the vagina and cervix in women of fertility age living in ecologically troubled areas. This poor health of women is reflected in the health of their children; in the Aral Sea area, the rate is 35.7 and 29.7 per 1,000 live births, and in the Aral and Kazaly areas the rates are 28.7 and 24.3 per 1,000 live births, and in the Shalkar district of Aktobe region, the rate is 28.7 per 1,000 live births. The results of the study showed adverse effects of environmental factors on health, particularly on the reproductive sphere of women of fertility age by screening the population.

Materials and Methods

During the screening of public health in these regions in 2014 and 2015, 2,170 women of reproductive age were examined. The women surveyed were divided into three groups according to age: 18-29, 30-39, and 40-49. These gynecological smear were processed using conventional histological techniques and subjected to microscopic examination.

For discharges from upper vagina injected mirror and forceps jaws are taking discharge. If you want to take a spin-off from the cervical canal, the vaginal part of the uterus exposed mirrors, outer mouth is rubbed with sterile cotton ball, and Volkmann spoon or forceps jaws are taken from the cervical canal discharge. After preparing smears carried out by the method of staining micro preparations Romanovskii—Gimza and examined under a microscope abnormal cells.

The microscopic of vaginal smears identified cellular elements of inflammation, sometimes by a change to the background micro flora. The cellular elements of inflammation are often detected in women of middle- and older-age groups and in the Kazaly and Aral areas. The background of inflammation was determined by changes in the epithelial cells lining the vagina. In some cases, these changes were minor in nature that can be regarded as a manifestation of reactive changes in the health of the local people. One of those places in our country is the Aral Sea area. Among the negative environmental consequences of the Aral crisis should be included the annual reduction in sea level of about 80-100 cm, a decrease of two-thirds, and an increase in the salt content of the water by 2.5 times. It is extremely dangerous and a consequence is the huge amount of sand and salt at the exposed bottom of the former sea. More than 70% of adults and 80% of children suffer from one or more diseases. Up to 90% of pregnant women are sick with anemia. All this leads to a permanent reduction in life expectancy in the region.

In the Aral Sea region, more than half of the pregnant women suffer from extra-genital diseases; there are a large number of abortions. Results of the study showed adverse effects of environmental factors of the Aral Sea region on somatic indicators, gynecological diseases, etiology, and structure not carrying a pregnancy. This poor health of women is reflected in the health of their children; in the Aral Sea area, infant mortality is 2.5 times higher than the average national figures, in the Shalkar district of Aktobe region, the rate is 28.7 per 1,000 live births, and in the Aral and Kazaly areas the rates are 35.7 and 29.7 per 1,000 live births [4,5].

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Results and Discussion

When smear microscopy identified changes in the cells it was difficult to differentiate between reactive changes and epithelial dysplasia (ASC-US); these changes were more often in the background of the inflammatory process (Figure 1). In these cases, the cells had a slight change in the ratio of the nucleus and cytoplasm, nuclear shape, and chromatin changes in distribution therein.

Also smears showed the dyskaryosis phenomenon. As the severity of the changes in different cell layers have been identified the epithelial lining cells of the degree of dysplasia. For example, in mild dysplasia, where the nuclear-cytoplasmic ratio was shifted more in favor of the nucleus, the contours of the nuclei were irregular chromatine, was moderately hyperchromatic, and had a grainy appearance.

Moderate dysplasia of the epithelial cells was characterized by more pronounced changes in cell nuclei. The changes have been vulnerable to the cell surface and the intermediate and parabasal layers. Marked variability forms cells (Figure 2).

With increasing signs of dysplasia, the dyskaryosis increased. For small changes in the size of the nuclei, the nuclear-cytoplasmic ratio shifted more toward the nucleus, defined areas of clutter chromatine. The contours of the cells themselves are uneven and sometimes blurred (Figure 3).

Thus, without a doubt, the environment in which man lives has an influence on his health, including reproductive. The changes begin in the cell body, which first appear in the individual cells, and only then generalizing, disrupting the function of cells, tissues, organs, and finally the body.

Conclusion

Figures 1-3 show smears with the dyskaryosis phenomenon. As the severity of the changes in different cell layers have been identified the epithelial lining cells of the degree of dysplasia.

In our opinion, the presence of inflammatory processes, as well as dysplastic changes defined in the genital cells of women of fertility age in ecologically troubled areas have a direct connection with the peculiarities of the areas of residence. Vaginal cytology smears and cervical smear in the screening of population in the Aral Sea region determined a group of women who require more rigorous research methods and additional health and follow-up treatment.

References
