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Clinical And Morphological Features Of Precancerous Processes Of The Cervix In The Premenopausal Period

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Abstract: Cervical pathology remains one of the urgent problems of modern gynecology, especially in the context of precancerous conditions and early diagnosis of cervical cancer. Cervical erosions and background processes, which include precancerous lesions are often asymptomatic, which increases the risk of progression to invasive carcinoma The study of the clinical and morphological features of these conditions allows for timely diagnosis, prevention and treatment.

Keywords: Cervix, precancerous processes, dysplasia, cervical intraepithelial neoplasia (CIN), premenopause, histology, Immunohistochemistry.

Introduction: Premenopause is the stage of a woman's life preceding menopause, characterized by changes in hormonal levels and reproductive function. During this period, background changes in the cervix may develop, and the risk of transformation of precancerous processes into malignant pathology increases. Premenopause is characterized by hormonal fluctuations: decreased estrogen levels, irregular menstrual cycles, and possible relative hypoestrogenism, which can affect epithelial regeneration and its resistance to external agents, including HPV. The study of histological changes during this period is important because diagnostic and treatment methods may differ, and the risk of progression may be higher with unfavorable combinations of factors [2,5,12].

The cervix consists of two anatomically and histologically distinct sections: the ectocervix (covered by stratified squamous epithelium) and the endocervix (covered by columnar epithelium). The transformation zone, the area of transition from one epithelium to another, is the most vulnerable to the effects of carcinogenic factors and the main localization of precancerous changes. Squamous intraepithelial lesions of varying severity precede the development of invasive cervical cancer and therefore require special attention from the professional community of obstetricians and gynecologists [3,6, 10]. A number of studies conducted by Western groups have shown that CIN grades I–II are most often detected in women aged 24–27 years, while CIN III is diagnosed in women aged 35–42 years [1,6,7,11]. At the same time, regardless of the severity of CIN and the presence of HPV infection, there is a high probability of disease regression. In the structure of malignant neoplasms (MN) in women in Uzbekistan, cervical cancer ranks second after breast cancer (BC), accounting for 12.4%. The standardized incidence rate of cervical cancer in the republic is 5.5 per 100,000 population [3, 9, 10], which primarily raises one of the global problems - solving the issue of early detection of underlying and precancerous diseases, as well as early stages of the disease.

Cervical erosion: definition and classification

The term "cervical erosion" is used to describe several pathological conditions: True erosion is a defect of the stratified squamous epithelium, rare, usually acute, of inflammatory origin. Pseudoerosion (ectopia) is the displacement of the columnar epithelium beyond the external os to the vaginal part of the cervix.

Erosive processes include dysplastic changes, leukoplakia, cervical intraepithelial neoplasia (CIN), which are precancerous conditions.

Precancerous changes include: Cervical intraepithelial neoplasia (CIN): CIN I (mild dysplasia): lesion of the lower third of the epithelium. CIN II (moderate dysplasia): lesion of up to 2/3 of the epithelial thickness. CIN III (severe dysplasia, carcinoma) in situ): lesions of the entire thickness of the epithelium without invasion of the basement membrane. Leukoplakia (keratinized epithelium) is often associated with dysplasia and can be a marker of a neoplastic process. Human papillomavirus lesions are associated with highly oncogenic HPV strains (16, 18, etc.) and are often accompanied by koilocytosis and parakeratosis.

Morphologically, precancerous lesions are characterized by impaired epithelial cell differentiation. Nuclear atypia: enlarged nuclei, hyperchromasia, mitotic activity. Epithelial thickening with impaired maturation. Possible inflammation and vascularization in the stroma. Cytological examination (Papanicolaou) and histology of biopsy specimens are the gold standard for confirming the degree of dysplasia. Clinical manifestations.

In the early stages of the disease, they are usually asymptomatic. Possible contact bloody discharge, increased mucopurulent discharge, dyspareunia. Often detected during routine examinations.

Objective of the study: to conduct a comprehensive clinical and morphological study of cases of benign and precancerous diseases of the cervix in premenopausal women to determine the true incidence and severity of CIN.

METHODS

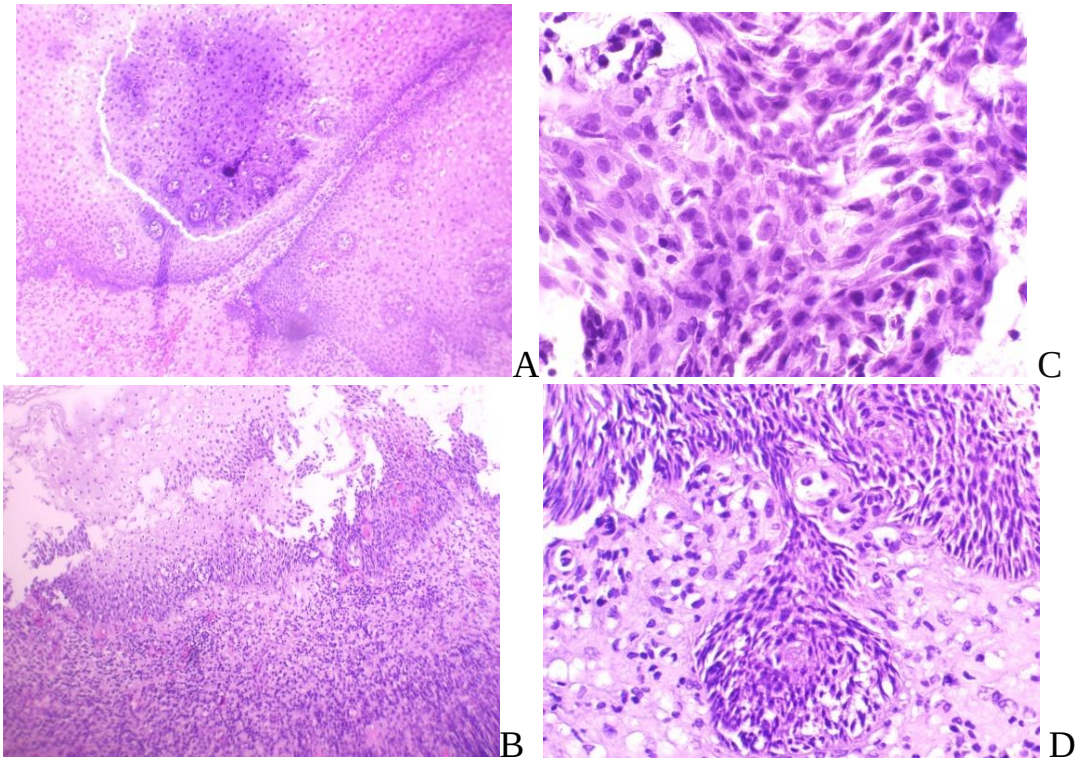
The material for the study was collected from the gynecology department of the 3rd multidisciplinary clinic of the Tashkent Medical Academy (TMA) and the National Medical Center in the period 2022-2024. The material for histological analysis was collected from 73 women of different age groups: Group 1 (n = 23) - women aged 35-45 years; Group 2 (n = 32) - women aged 46-55 years, Group 3 (n = 18) - women aged 56-65 years. All women underwent a preliminary cytological examination of vaginal smears stained according to Papanicolaou, extended colposcopy to identify iodine-negative zones, as well as conization of the cervix with subsequent histological diagnosis. The finished preparations were examined and described using a Euromex binocular electron microscope. Bio Blue with a camera and monitor.

RESULTS AND DISCUSSION

According to the results of histological examination, erosive lesions of the cervical mucosa, some cases combined with an inflammatory process, dysplasia of varying severity, as well as intraepithelial damage were noted in different age groups. Thus, in the studied groups, CIN I was detected in 19 women, which amounted to 26.1% of the total number of cases; CIN II in 12 women - 16.4%; erosive changes, including endocervicosis, were detected in 35 patients - 47.9% of the total number of patients examined, and glandular polyps of the cervix were also found in 7 cases (9.5%). According to literary sources, moderate dysplasia is often found among women aged 39-55 years, in our observations, a high prevalence of the above condition occurred at a younger age of 30-40 years. Erosive changes in the cervix also contribute to the development of intraepithelial carcinoma, neoplasia, and adenocarcinoma, along with glandular polyps.

Morphological changes in mild dysplasia were characterized by marked hyperplasia of the stratified squamous epithelium, proliferation of basal cell layers, areas of destruction of the stratified squamous epithelium, and inflammatory infiltration. Cases of leukoplakia were also identified alongside erosive changes (Figure A). Due to inflammatory infiltration, effacement of the basement membrane boundaries, proliferation of basal cells, and hyperchromia of their nuclei were noted (Figure B). Moderate dysplasia was detected in women aged 34-45 years and was characterized by thickening of the stratified squamous epithelium, basal cell proliferation, chaotic arrangement of oval and elongated cells, nuclear hyperchromia, and epithelial cell invasion into the underlying stroma with destruction of the epithelial border (Fig. C, D).

Erosive changes and stationary endocervicosis were characterized by areas of squamous epithelium replacement with columnar epithelium, the presence of numerous glandular cells in the cellular-fibrous stroma, glandular deformation, the presence of cystic cavities, and an abundance of congested vessels.



Rice. Severe hyperplasia of stratified squamous epithelium, proliferation of basal layer cells – A; areas of destruction of stratified squamous epithelium with inflammatory infiltration - CIN - I + cervicitis - B (B -aya I, 31 years old); Squamous epithelial cells are oval and elongated, with hyperchromia of the nuclei , chaotically arranged - CIN - II . C (B- aya S, 38 years old) ; Hyperplasia of stratified squamous epithelium, reserve cell activation and proliferation of basal layer cells, hyperchromia of their nuclei, drop-shaped creep of basal layer cells into the underlying stroma - CIN - II . - D (B -aya K, 48 years old).

CONCLUSIONS

The study results indicate that background changes such as chronic cervicitis, leukoplakia, ectopic columnar epithelium, and metaplasia may mask or accompany dysplasia. Meanwhile, relative periods of hyperestrogenism (if there are cycle irregularities) may stimulate proliferation.

In the premenopausal period, precancerous processes manifest themselves as more pronounced proliferation, disruption of the epithelial maturation cycle, increased mitotic activity, pronounced nuclear atypia and increased mitotic activity depending on the degree of CIN.

Early detection and careful morphological examination of biopsies in premenopausal women allow for timely treatment and prevention of progression to invasive cancer.

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