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PATHOMORPHOLOGY OF NON-SPECIFIC ULCERATIVE COLITIS. REVIEW OF MODERN LITERATURE.

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Abstract: Non-specific ulcerative colitis (NUC) is a chronic, autoimmune inflammatory disease of the large intestine, the pathomorphology of which is important in the diagnosis, differential diagnosis, and determination of treatment strategies. Modern research emphasizes the role of disorders of the epithelial barrier, changes in microflora, lymphoplasmacytic infiltration, disruption of cryptal structures, and immune mediators. This review analyzes macroscopic and microscopic changes, as well as immunohistochemical markers and morphological interpretations based on new pathogenesis.

Introduction

Various forms of nonspecific ulcerative colitis have been identified in 7.5 million people worldwide. It has been established that this disease is observed mainly among various ethnic groups, with red-skinned people in America and Mexico, and mainly Jews in Europe. This disease is registered in about 0.1% of the world's population and occurs in 35 to 100 cases per 100,000 population [O.R.Alekseeva et al. 2008]. Non-specific ulcerative colitis is most often observed in individuals aged 20-40.

Results

Analysis of the literature showed that the main pathomorphological features of NUC include:Upon examination of the large intestine: the mucous membrane of the cecum, ascending, transverse colon, descending, sigmoid, and rectum is edematous, hyperemic, and contact bleeding is observed. Microabscesses, superficial erosions, and ulcers up to 1.0 cm in size were detected, the bottom of which was covered with fibrin; Inflammatory polyps from 0.4 to 1.1 cm were detected, elastic strength, bright pink color; vascular shape was lost. (Fig. 1). As a result of uneven restoration of the mucous membrane, the mucous membrane is fragmented, glands are reduced, atrophied, goblet cells and sucking cells are sharply reduced, hemorrhage by diapedesis, diffuse lymphoid infiltration, hyperemia, sclerotic changes in the submucous membrane, sclerosis of the vessel wall, focal lymphoid infiltration (Fig. 2).

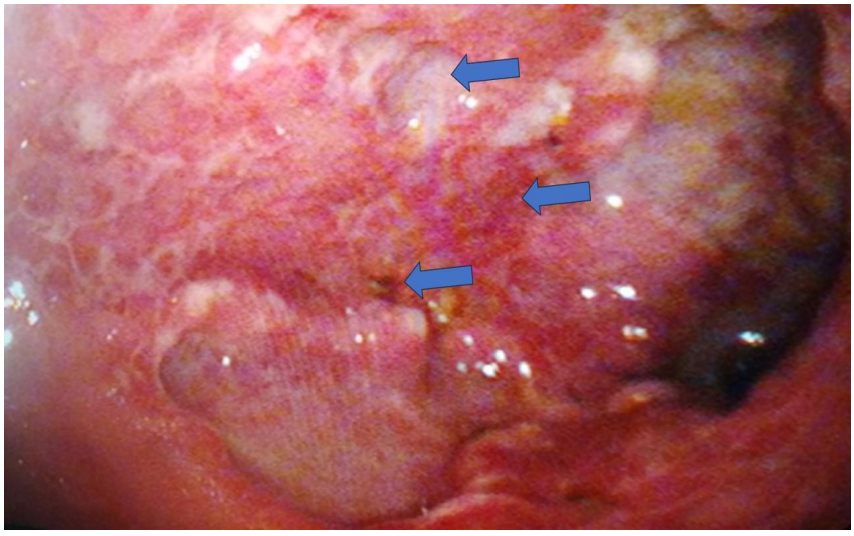

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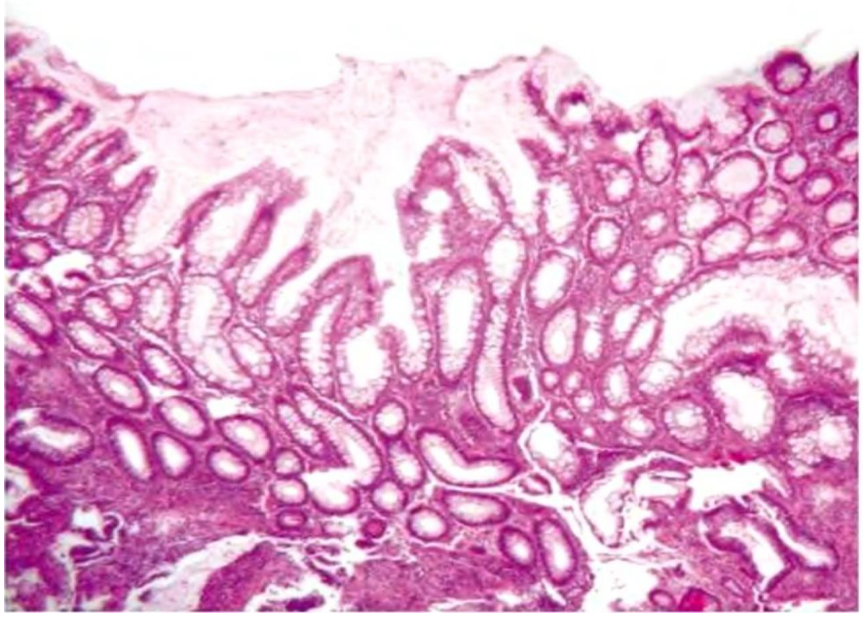
Figure 1 *On a colonoscopic examination, the macroscopic mucous membrane of the large intestine is hyperemic, light reddish in color, covered with foci of purulent exudate and hemorrhages, the mucous and submucosal layers grow together, forming protrusions - pseudopolypes (pseudopolypes), erosions and*
ulcers are observed.



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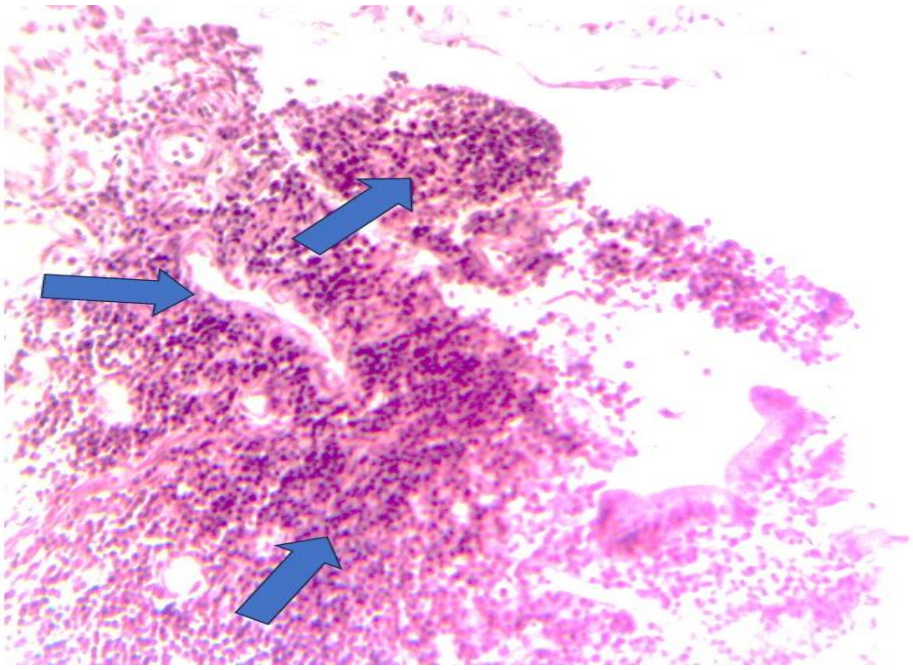

Figure 3. *As a result of uneven restoration of the mucous membrane, the mucous membrane is fragmented, glands are reduced, atrophied, goblet cells and sucking cells are sharply reduced, hemorrhage by diapedesis, diffuse lymphoid infiltration, hyperemia, sclerotic changes in the submucous membrane, sclerosis of the vessel wall, focal lymphoid infiltration. Hematoxylin-eosin staining. Magnification OK 4x10 vol.*

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Marker Ki 67 is a marker that determines cell proliferation and is expressed at different levels (light, medium, and strong liver color) at all stages of cell activity. From the initial phase of cell activation G1 to the M phase, this marker is highly expressed and is clearly visible in the metaphase of mitosis. In the initial phase of G1, the Ki-67 marker is located in the centromere of the satellite DNA and in the telomere of the chromosome. In the middle phases of cell activation, the Ki-67 marker is detected intranuclearly in the nucleolus, and by the G2 phase, it is expressed in the nucleolus and karyoplasm. When the cell transitions to postmitotic G0, Ki-67 is degraded by marker proteosomes, undergoes complete catabolism, and is not expressed in interphase cells. We remind you that, taking into account the normal positive expression of the Ki67 marker in the mucous membrane of the large intestine on average, up to 10-20%, in the area of 400x, comparison with the tumor process and the tumor are excluded. This was determined to be expressed positively in the cell nucleus, and the positive expression of all cells was calculated as a percentage.

1) 10% - low,
2) 10-20% - moderate,
3) 20% more is considered a high degree of expression.

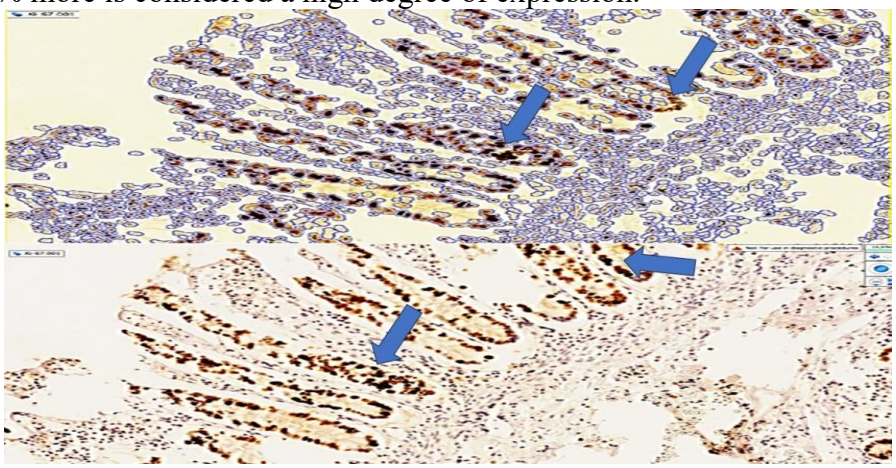

Figure 4. *Moderate positive expression of Ki-67 arkerin in the mucous and submucosal structures in the acute phase of chronic nonspecific ulcerative colitis. It was scanned in the QuPath-0.4.0.ink program and the degree of expression was determined. Kat. ok 10x10. vol.*

Conclusion

Pathomorphological manifestations of nonspecific ulcerative colitis are the main criteria for diagnosing the disease, assessing its activity, and choosing treatment tactics. Modern literature interprets NAAs not only as an inflammatory process, but also as a complex morphological syndrome associated with disruption of the epithelial barrier, imbalance of immune mediators, and changes in the flora of microorganisms. The widespread use of immunohistochemistry and molecular markers makes it possible to further clarify the diagnosis of NAD, facilitate differential diagnosis, and develop new therapeutic measures.

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