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MORPHOLOGICAL AND HISTOLOGICAL FEATURES OF THE INTESTINAL MUCOSA IN INFLAMMATORY BOWEL DISEASES

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Introduction

Inflammatory bowel diseases are chronic immune-mediated disorders of the gastrointestinal tract that are mainly represented by ulcerative colitis and Crohn's disease. These conditions are characterized by recurrent inflammation and structural damage of the intestinal wall. Histological examination of the intestinal mucosa is one of the most important diagnostic methods because it allows evaluation of inflammatory activity, chronic structural changes, and possible dysplastic transformation. Morphological assessment also helps differentiate between ulcerative colitis and Crohn's disease and provides valuable information about disease progression.

Relevance of the Problem

The incidence and prevalence of inflammatory bowel diseases are increasing in many regions of the world, making these conditions an important medical and social problem. Chronic intestinal inflammation can significantly reduce patients' quality of life and may lead to complications such as strictures, fistulas, bleeding, malabsorption, and colorectal cancer. The similarity of clinical symptoms in different intestinal diseases may complicate diagnosis. Therefore, detailed histological examination of the intestinal mucosa is essential for establishing an accurate diagnosis and determining the severity of inflammatory changes. Studying the morphological characteristics of the mucosa is especially important for improving differential diagnosis and selecting appropriate treatment strategies.

Methods

This thesis was prepared on the basis of a narrative review of scientific literature devoted to the histological and morphological characteristics of inflammatory bowel diseases. Published studies concerning ulcerative colitis, Crohn's disease, intestinal mucosal inflammation, crypt architecture, goblet cell changes, inflammatory cell infiltration, granuloma formation, and epithelial remodeling were analyzed. Particular attention was paid to histopathological features that are commonly used in clinical diagnosis and assessment of disease activity.

Results

The analysis showed that ulcerative colitis is mainly characterized by continuous mucosal inflammation beginning in the rectum and extending proximally. The most common histological findings include crypt distortion, crypt branching, shortening and irregular arrangement of crypts, goblet cell depletion, neutrophilic infiltration, cryptitis, and crypt abscess formation. In chronic cases, basal plasmacytosis and persistent architectural abnormalities may be present.

Crohn's disease demonstrates a more heterogeneous histological pattern. Inflammation is typically patchy and may involve all layers of the intestinal wall. Histological findings may include focal chronic inflammatory infiltration, mucosal ulceration, lymphoid aggregates, fibrosis, and non-caseating granulomas. Granulomas are not detected in every patient but are considered an important diagnostic feature when present.

Both ulcerative colitis and Crohn's disease are associated with disruption of the intestinal epithelial barrier. Damage to epithelial cells and alterations in tight junctions may increase intestinal permeability. Goblet cell depletion and changes in mucus production further weaken the protective function of the mucosa.

Long-standing inflammation may also lead to epithelial regeneration, dysplasia, and structural remodeling. In patients with chronic extensive colitis, these changes may increase the risk of colorectal neoplasia. Therefore, histological monitoring remains important not only for diagnosis but also for long-term surveillance.

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Conclusion

Inflammatory bowel diseases are characterized by significant morphological and histological changes in the intestinal mucosa. Crypt architectural distortion, inflammatory infiltration, goblet cell depletion, crypt abscesses, ulceration, granuloma formation, and epithelial remodeling are among the most important findings. Histological evaluation remains an essential method for diagnosis, differential diagnosis, assessment of disease activity, and detection of long-term complications. Detailed morphological analysis of the intestinal mucosa can contribute to more accurate clinical decision-making and improved management of patients with inflammatory bowel diseases.

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