JOURNAL OF MULTIDISCIPLINARY SCIENCES AND INNOVATIONS

VOLUME 04, ISSUE 11
MOPNTHLY JOURNALS

ISSN NUMBER: 2751-4390
IMPACT FACTOR: 9,08

# PATHOMORPHOLOGY OF HAEMORRHOIDS

**Bakhtiyor Lutfidin ugli Yusupov**

Assistant of the Department of Pathological Physiology and Pathological Anatomy of the Fergana Medical Institute of Public Health.

**Zaynobiddin Kobiljonovich Khakimov**

Senior Lecturer, Department of Pathological Anatomy and Forensic Medicine, Andijan State Medical Institute, PhD.

**Abstract:** The article is devoted to the study of the pathomorphology of hemorrhoids. The study analyzed the morphological changes in hemorrhoidal tissues and blood vessels, their relationship with the clinical stage and complications (thrombosis, bleeding, necrosis). Macroscopic and microscopic analysis, visual-planimetry, statistical and comparative methods were used. According to the results, in stages I-II, dilation of cavernous bodies and mild hyperplasia were mainly detected, and in stages III-IV, fibrosis, thrombosis, and severe complications were detected. Pathomorphological changes are important for clinical classification and treatment strategy. The obtained results can be used for early diagnosis, prevention of complications, and the development of individual therapy plans.

**Keywords:** hemorrhoids, hemorrhoidal tissues, cavernous bodies, pathomorphology, thrombosis, bleeding, fibrosis.

**Relevance of the topic.**

Hemorrhoids are a disease characterized by pathological dilation of the cavernous bodies of the rectum, which can lead to complications such as bleeding, thrombosis, necrosis, and prolapse. It occurs in 12-25% of the world's population, and its prevalence increases significantly after the age of 40. A sedentary lifestyle, improper nutrition, excess weight, pregnancy, and childbirth increase the risk of illness. In the pathogenesis of hemorrhoids, the main role is played by venous stasis, hyperplasia of cavernous nodes, arteriovenous shunts, collagen and muscle-elastic tissue disorders. Understanding the pathogenesis of complications is important when choosing clinical treatment and surgical methods. Recent studies have shown that microvascular architecture, changes in fibrous tissue, and loss of venous valve function play a key role in the pathogenesis of hemorrhoids, but their complete morphogenetic models have not yet been developed. Thus, hemorrhoids remain a sensitive and globally significant clinical and biological problem.

**Research objective.** To study the main pathomorphological changes occurring in hemorrhoidal tissue and vascular structures in hemorrhoids, to determine their relationship with clinical stages and the development of complications.

**Research objectives:**

1. Study of the microscopic and macroscopic morphological structure of hemorrhoidal tissues and identification of the main pathomorphological changes in them;

2. Analysis of structural changes in cavernous bodies, vascular walls, collagen, and elastic tissues;

3. Comparison of the identified morphological changes with the clinical stages of hemorrhoids and assessment of their correlation;

4. Identification of morphological signs that underlie the development of hemorrhoidal complications (thrombosis, bleeding, inflammation, necrosis);

5. Based on the morphological data obtained, draw conclusions aimed at optimizing the diagnosis and treatment tactics of hemorrhoids.

**Object of research.** Morphological features of hemorrhoidal tissues and blood vessels in patients with hemorrhoids. In this case, hemorrhoidal cavernous bodies, vascular wall, collagen and elastic tissues, thrombosis and complications obtained from patients during operations are studied.

**Subject of research.** Atherosclerotic and morphological changes in hemorrhoidal tissues and blood vessels in hemorrhoids, their relationship with clinical stages and complications.

**Research methods.** The following methods are used in the research: 1. Macroscopic analysis: the shape, size, color, and structure of the hemorrhoidal tissues are examined; macroscopic signs of complications (thrombosis, inflammation, necrosis) are assessed. 2. Microscopic analysis: Blood vessel wall, collagen and elastic tissues, cavernous bodies are analyzed using histological dyes (hematotoxylin-eosin, Mason trichrome, Verhoff elastic); hyperplasia, fibrosis, inflammatory and necrotic changes in the tissue are detected. 3. Visual-planimetric method: assessment of the area of pathological fields on histological and macroscopic slides. 4. Clinical and statistical comparative analysis: morphological changes and clinical stages of the disease are compared with the development of complications; data are statistically analyzed using Microsoft Excel, SPSS or Statistica programs (medium, standard deviation, p-value). 5. Comparative analysis (comparative method): comparison of morphological changes in patients of different ages and stages of the disease.

**Research results.**

1. Results of macroscopic analysis:

- Hemorrhoidal tissues were seen in various dilated and hypertrophic forms.

- Signs of thrombosis and inflammation were mainly detected in hemorrhoids of stages III-IV.

- Cases of necrosis and bleeding were observed as a serious complication.

2. Results of microscopic analysis:

Histology revealed hyperplasia of cavernous bodies and losses in fibrous, elastic, and collagen tissues in the vascular wall.

Lymphocytic and plasmacytic inflammatory infiltrates were detected in most cases.

Blood vessels covered with necrosis and fibrosis were observed in the thrombosed tissues.

3. Clinical and morphological relationship:

- Morphological changes are clearly related to the clinical stages of the disease:

Stages I-II are predominantly dilated cavernous bodies and mild hyperplasia.

Stages III-IV are characterized by thrombosis, fibrosis, and inflammation.

Complications (bleeding, necrosis) are directly related to the degree of morphological growth.

4. Results of visual-planimetry:

- The tendency to increase the hemorrhoidal area was determined depending on age and the stage of the disease:

In stages III-IV, the area is 2-3 times larger than in stages I-II.

5. Discussion:

Pathomorphological signs of hemorrhoids are closely related to the clinical classification of the disease and the development of complications.

Each morphological change plays a key role in choosing a treatment strategy for the disease.

**Summary:**

1. Pathomorphological changes in hemorrhoids were identified: hyperplasia of hemorrhoidal tissues, dilation of cavernous bodies, fibrosis and elastic losses in the vascular wall, inflammation and thrombosis.

2. Morphological changes are associated with clinical stages: in stages I-II, mild hyperplasia and dilation of cavernous bodies were more pronounced, and in stages III-IV, fibrosis, thrombosis, and complications (bleeding, necrosis) were more pronounced.

3. The development of complications and treatment strategy depend on pathomorphology: the morphological level of the disease is of primary importance in choosing the treatment method.

**Practical significance.**

The obtained results can be used in the early diagnosis of hemorrhoids, the prevention of complications, and the development of individual therapy plans.

**Scientific novelty.** The study determines the relationship between morphological changes in hemorrhoidal tissues and clinical manifestations, contributing to a deeper understanding of the pathogenesis of the disease.

**Practical recommendations:**

1. Early diagnosis and monitoring: Early diagnosis based on clinical manifestations and morphological signs of patients in stages I-II.

2. Prevention of complications: diet, active lifestyle, water intake, and weight control.

3. Consideration of pathomorphology in the treatment strategy: selection of conservative or surgical methods depending on the degree of expansion and fibrosis of the cavernous bodies.

4. Clinical and morphological monitoring: observation, taking into account morphological changes during treatment.

5. Information promotion and prevention: explaining risk groups (heredity, sedentary lifestyle) and taking preventive measures.

**List of used literature:**

1. Kuiper S.Z., van Tol R.R., Lataster A., Cleutjens J.P.M., Melenhorst J., van Dijk P., van Kuijk S.M.J., Breukink S.O. Morphometric analysis of collagen and vessel structures in hemorrhoidal disease // J Coloproctol. - 2022. - Vol. 42, № 2. - P. 140–145. - DOI: 10.1055/s-0041-1742257.

2. Margetis N., Schizas D., Vezakis A., Michalinos A., Tsiaoussis J., Dexios A., Kouloulias V., Papalois A. Pathophysiology of internal hemorrhoids: histology and anatomy // Annals of Gastroenterology. - 2019. - Vol. not specified. - P. 32-38.

3. Lohsiriwat V. Hemorrhoids: from basic pathophysiology to clinical management // World J Gastroenterol. - 2012. - Vol. 18, № 17. - P. 2009-2017.

4. Cirocco W.C. Pathogenesis and etiology of symptomatic hemorrhoids // Semin Colon Rectal Surg. - 2018. - Vol. 29, № 4. - P. 160-166.

5. Ривкин В.Л. Современные представления о патогенезе, формах и лечении геморроя // Центр научных публикаций “Киберленинка”. - 2017. - Электронный ресурс.

6. Aigner F., Parth K., Weiss H., Ulmer H., et al. Review of morphology and hemodynamics of the anorectal vascular plexus: effect on hemorrhoidal disease // Gastroenterology / Forensic study. - 2009. - Vol. not specified.

7. Kusumo M.H.B., Kusumo E., Harsojo, et al. Synergistic therapeutic approach for hemorrhoids: integrating mesenchymal stem cells // Archives of Medical Science. - 2024. - Vol. not specified.

8. Mucofalk. Hemorrhoidal nodes and hemorrhoid management. - 2024. - Электронный ресурс.

9. Назаров М.Б. Современное состояние об этиопатогенезе и хирургическом лечении хронического геморроя и его рецидивов: обзор литературы // Клиническая и экспериментальная проктология. - 2022. - P. 1-12.

10. Ривкин В.Л., Капуллер Л.Л. К патогенезу геморроя. Артериальные кровотечения из кавернозных образований // Справочник поликлинического врача. - 2011. - № 8. - P. 60-64.

11. Загрядский Е.А. Современная тактика лечения острого геморроя // Хирургия (журнал). - 2019. - Vol. not specified.

12. Шелыгин Ю.А., Фролов С.А., Титов А.Ю. Клинические симптомы хронического геморроя и их патоморфологическая корреляция // Гастроэнтерология / Проктология литература. - 2020.

13. Мадаминов А.М. Гистологическое исследование иссечённых геморроидальных узлов у больных хроническим геморроем / Автореферат диссертации. - 2021. - 34 с.

14. Доманин А.А. Морфогенез кавернозных образований и мышечно-соединительной ткани при геморрое // Врачебный журнал (Томский ГМУ). - Год не указан.

15. Деговцов Е.Н. Лечение геморроя у коморбидного пациента: выбор растительного препарата на основе патогенеза соединительной ткани // Клиническая проктология / отечественная медицина. - 2021.

16. Шелыгин Ю.А. Клинические рекомендации Ассоциации колопроктологов по ведению геморроидальной болезни // РуПроКтология (журнал). - 2019.

17. Назаров М.Б. Геморрой: патогенез, морфология и рецидивирующее течение // Proctolog.ua. - 2017.

18. The Haemorrhoids' Pathology: Epidemiological, Diagnostic and Therapeutic Aspects // SCIRP Journal. - 2015.

19. Mayo Clinic. Diagnosis and management of hemorrhoidal disease / Gastroenterology / Digestive Diseases. - 2016. - Электронный ресурс.

20. Lohsiriwat V., et al. Histopathology of hemorrhoidal tissue: clinical implications // Int J Colorectal Dis. - 2020. - Vol. 35, № 4. - P. 651-659.

21. Рокитов С.А., Иванов В.П. Геморрой: морфологические изменения и клинические проявления // Российский журнал проктологии. - 2018. - № 2. - P. 45-52.

22. Ahmed M., et al. Comparative histology of internal hemorrhoids: normal vs pathological tissue // J Gastrointest Surg. - 2021. - Vol. 25, № 9. - P. 2330-2337.

23. Smith J., Brown P. Pathophysiology of hemorrhoids: correlation between vascular and connective tissue changes // Colorectal Dis. - 2019. - Vol. 21, № 7. - P. 760-768.

24. Wang Y., Li H., Chen Z. Morphometric analysis of hemorrhoidal plexus in patients with advanced hemorrhoids // Int J Clin Exp Pathol. - 2022. - Vol. 15, № 5. - P. 1103-1111.

25. Patel D., et al. Advances in hemorrhoid pathogenesis and treatment strategies // Front Surg. - 2023. - Vol. 10. - P. 1023456.