

## Clinical Features of Chronic Nasal Polyposis and Assessment of Conservative Treatment Effectiveness

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**Abstract.** *This article examines the morphological characteristics of angiogenesis in nasal polyps and their correlation with pathological changes. The study aimed to evaluate the extent of new blood vessel formation in polyp tissues, their structural and functional state, as well as to determine the proliferative activity of endothelial cells. Microscopic, histological, and histochemical analyses revealed that the activation of angiogenesis is intricately linked to inflammatory, regenerative, and fibroplastic reactions observed in the tissues.*

**Key words:** *nasal polyps, angiogenesis, morphological changes, capillary network, endothelial cells, proliferation, regeneration, inflammation, fibroblastic activity, pathogenesis.*

Nasal polyps are one of the most common chronic diseases of the upper respiratory tract, which are mainly formed as a result of the proliferation of the mucous membrane of the nasal cavity and paranasal sinuses. This pathology is associated with prolonged inflammation, allergic processes, infectious effects, and immunological imbalance, manifesting in patients with nasal congestion, decreased sense of smell, and difficulty breathing. The results of modern morphological and pathophysiological studies show that angiogenesis, that is, the process of formation of new blood vessels, plays an important role in the development of nasal polyps. Angiogenesis, as a physiological process, ensures the growth, regeneration, and renewal of body tissues. At the same time, it is activated in pathological conditions, in particular, in inflammatory and tumor processes. The intensification of angiogenesis in nasal polyps is explained by the satisfaction of the metabolic needs of tissues, the transport of inflammatory mediators, and the stimulation of structural changes in the mucous membrane. Proliferation of endothelial cells, dilation of the capillary network, and microcirculatory changes are considered as the central mechanism of polyp tissue growth. Despite the fact that the available literature provides a number of information on the etiopathogenesis, immunological mechanisms, and components of inflammation of nasal polyps, the morphological features of the angiogenesis process have not yet been sufficiently studied. In particular, data on the proliferative activity of endothelial cells, the stages of differential formation of new capillaries, and their relationship with tissue structure are limited.

The results of the study of the morphological structure of nasal polyps show that these pathological tumor formations are closely related to chronic inflammation, hypoxic conditions, and regenerative changes occurring mainly in the stromal component of the mucous membrane. According to clinical observations, the frequency of nasal polyposis is 10-15% of all rhinological pathologies, of which 65-70% are observed in patients over 30 years of age. The disease is slightly more common in men. In the histostucture of the polyp tissues, hyperplastic cylindrical epithelium, inflammatory infiltrate saturated with lymphocytes, plasma cells, and eosinophils, swollen stroma, and dilated microvascular network are revealed. It is these microcirculatory changes that indicate the activation of the angiogenesis process.

Our studies have shown that the use of leukotriene receptor blockers in the treatment of nasal obstruction in patients with polypoid rhinosinusitis made it possible to restore adequate nasal breathing without surgical intervention in 45 out of 61 (73.8%) patients with stage III-IV nasal polyposis. A decrease in the volume of polyp tissues in the nasal cavity had a significant effect on the state of nasal breathing, which is reflected in the indicators of rhinomanometry, acid-base balance, and the concentration of leukotriene C4 in the blood.

Chronic nasal polyposis (CHP) is a protracted inflammatory process characterized by polyp-like tumor-like changes in the mucous membrane of the nasal cavity and paranasal sinuses. This disease is one of the most common types of chronic rhinosinusitis in otorhinolaryngological practice. According to various statistical data, SBP occurs in 1-4% of the general population, but in the population prone to allergic diseases, this figure reaches up to 10%.

Nasal polyps often develop from the ethmoid (mesh) cavity and gradually obstruct the nasal passages, making breathing difficult. The disease is caused by chronic inflammation, allergic reactions, and infectious factors.

The relevance of this topic lies in the fact that nasal polyposis sharply reduces the patient's quality of life: it is accompanied by difficulty breathing through the nose, loss of smell, headache, and fatigue. Therefore, early detection of the disease, treatment by conservative methods, and prevention of recurrence are of great medical importance. The purpose of the article is to study the clinical signs, pathogenesis, and assessment of the effectiveness of conservative treatment methods for chronic nasal polyposis.

In medical literature, SBP is interpreted differently. According to research by Uzbek and foreign scientists, polypoid rhinosinusitis is often associated with allergic rhinitis, bronchial asthma, or aspirin sensitivity.

According to domestic scientists M. T. Tursunov (2020), the main mediators of inflammation in polypoid rhinosinusitis are eosinophils and cytokines (IL-4, IL-5). These mediators maintain a constant state of inflammation in the mucous membrane. According to foreign sources (Fokkens et al., 2020, EPOS Guidelines), SBP is a multifactorial disease that occurs as a result of a complex combination of immune system imbalance, microbiota changes, and environmental influences.

There is also a high risk of polyposis recurrence: even after surgical removal, repeated polyps appear in 40-60% of patients within 5 years. Therefore, in modern approaches, special attention is paid to conservative (non-surgical) treatment.

### **Clinical manifestations of SBP can be divided into the following groups:**

#### **1. Main symptoms:**

- Nasal congestion (bilateral);
- Difficulty breathing through the nose;
- loss of smell (anosmia);
- Discharge of mucus from the nose;
- Headache and pressure sensation in the facial area.

#### **2. Additional designations:**

- General weakness without fever;
- Don't snore at night;
- The habit of breathing through the mouth.

### **Diagnostics includes the following steps:**

Clinical examination: patient complaints, nasal breathing rate.

Anterior rhinoscopy and endoscopy: smooth, gray, mobile polyps are visible in the nasal cavity.

Computed tomography (CT): important for determining the location and size of polyps.

Laboratory tests: blood test for allergic background (eosinophilia, IgE level).

The goal of conservative treatment in SBP is to stop the growth of polyps, reduce inflammation, and restore nasal patency. Hormonal therapy (corticosteroids): local forms (Mometazone, Fluticasone, Budesonide) and systemic forms (Short course of Prednisolone). Antiallergic agents: Loratadine, Cetirizine, Desloratadine. Nasal cleaning and physiotherapy: sea salt solutions, UHF, laser treatments. Biological therapy: Dupilumab (not yet widely used).

**The effectiveness of conservative therapy is assessed based on the following criteria:**

- Improved nasal breathing;
- Restoration of the sense of smell;
- Reduction or disappearance of polyps during endoscopy;
- Subjective assessment of the patient (SNOT-22 questionnaire).

Observations conducted in local clinics showed that after 8 weeks of mometazone therapy, polyps significantly decreased in 70% of patients. The analysis shows that a conservative approach in SBP - especially in mild and moderate cases - gives a positive result without surgical intervention. However, in severe cases, when polyps are large or the nasal passage is completely blocked, endoscopic surgery is necessary. However, continued use of corticosteroid sprays and nasal hygiene even after surgery prevents recurrence of the disease.

### **Summary:**

Chronic nasal polyposis is a chronic inflammatory disease of the nasal cavity, which sharply reduces the quality of life. The main clinical signs of the disease are nasal congestion, loss of smell, and rhinorrhea. Conservative treatment, in particular, corticosteroid sprays, is the most effective and safe method. Even after surgery, regular prevention and hormonal therapy prevent recurrence. Early detection of SBP and a systematic approach improve the quality of the patient's social life.

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