

## **Application of High-Tech Methods in Surgical Treatment of Patients with Chronic Rhinitis**

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**Abstract:** Chronic nasal congestion caused by swelling of the inferior turbinate, which significantly affects the quality of life, affects 20% of the population. Drug treatment of chronic rhinitis is considered the starting therapy, but if conservative treatment methods are ineffective and complaints of difficulty in nasal breathing persist as the predominant symptom, the question arises of choosing the optimal type of surgical intervention on the inferior turbinates.

**Keywords:** chronic rhinitis, inferior turbinates, laser surgery, radio wave surgery.

Currently, there are a large number of methods for influencing the mucous membrane of the inferior turbinates. Given the high prevalence, surgical treatment of patients with this pathology is a pressing issue in modern otolaryngology. Surgical treatment of patients with chronic rhinitis is a pressing issue in modern otolaryngology due to the prevalence of this pathology. Clinical manifestations of rhinitis significantly worsen the quality of life of patients, contribute to the development of pathology of the lower respiratory tract and other body systems. This article provides an overview of high-energy surgical methods for the treatment of patients with chronic rhinitis, the advantages and disadvantages of each. Chronic rhinitis is a common disease worldwide, significantly affecting the quality of life of patients. Determination of the mechanisms of development of various forms of chronic rhinitis is the basis for the selection of criteria for determining the rhinitis phenotype [8]. The term "rhinitis" is applicable to a number of diseases with various pathophysiological mechanisms of development and etiology, but common clinical manifestations, the most common of which are nasal congestion, discharge from it of various nature, itching in the nose and sneezing. The main symptoms can be combined with other complaints, for example, with olfactory impairment or crusting in the nose. Chronic rhinitis is a chronic inflammatory process in the mucous membrane, rarely, but also in the bony walls of the nasal cavity. Chronic rhinitis ranks 6th among the most common chronic diseases. Prevalence of chronic rhinitis

10-20% of the population suffers from chronic forms of rhinitis, and its symptoms are noted in 40% of respondents in epidemiological studies. Over the past 30 years, the prevalence of this condition in industrialized countries has increased sharply. The proportion of patients hospitalized for diseases of the nasal mucosa increases annually by 1.5-2%.

The prevalence of allergic rhinitis in different countries of the world is 4-32%. The prevalence of a confirmed diagnosis of allergic rhinitis among the adult population of Europe varies from 17 to 28.5%, in Russia - 10-24%. Within the framework of the international ISAAC (International Study of Asthma and Allergy in Childhood) program, studies on the epidemiology of allergic

rhinitis symptoms were conducted in the Russian Federation, according to which 9.8-10.4% of respondents in Zelenograd and Moscow noted the presence of allergic rhinitis symptoms, in Novosibirsk the prevalence among the subjects was up to 29.6%, in Kirov - 28%, in Izhevsk - 23%, in the Irkutsk region 14.8-28.6%. It is worth noting that the level of appeal at the early stage of allergic rhinitis is very low, which leads to late diagnosis of the disease. According to numerous studies, it is known that the onset of the disease most often occurs in the first half of life, and that allergic rhinitis is often associated with bronchial asthma. Bronchial asthma is determined in 15-38% of patients diagnosed with allergic rhinitis. Symptoms of allergic rhinitis are reported by 55-85% of patients diagnosed with bronchial asthma.

Characteristics and clinical features.

### **Impaired vascular tone:**

The nasal mucosa becomes overly reactive, the vessels dilate, and their regulation is disrupted.

### **Symptoms:**

Nasal congestion, copious clear discharge, sneezing attacks.

### **Triggers:**

Sudden temperature changes, cold air, dust, smoke, as well as psychoemotional factors and food irritants.

### **Relationship with arterial hypertension:**

Impaired systemic blood flow can aggravate rhinitis symptoms, making the nasal mucosa more reactive.

### **Effective treatment methods:**

Treatment should be comprehensive, taking into account the possible connection with arterial hypertension.

#### **1. Elimination and correction of causal factors:**

Elimination of contact with allergens.

Following a diet, eliminating food triggers.

Normalization of blood pressure and general systemic blood flow. Creation of a comfortable indoor microclimate (humidifiers, dehumidifiers).

#### **2. Drug therapy:**

Intranasal glucocorticosteroids: To reduce inflammation and swelling of the mucosa.

Antihistamines: Control allergic reactions if they are the cause.

Vasoconstrictor drops/sprays: Used short-term to relieve congestion.

Mast cell stabilizers: Prevent the release of inflammatory mediators.

#### **3. Physiotherapy:**

Nasal lavage with saline solutions: Improves the condition of the mucosa and promotes the removal of mucus.

Laser therapy: Can be used to reduce inflammation and swelling.

#### **4. Surgical treatment:**

Prescribed when conservative therapy is ineffective.

Includes vasotomy (cutting or coagulating blood vessels), correction of the nasal septum and mucous membrane of the turbinates.

Rhinitis medicamentosa is the most common subtype of nonallergic rhinitis and accounts for at least two thirds of all patients with nonallergic rhinitis [11]. Patients with allergic and nonallergic rhinitis are equally likely (63.4 and 66.9%) to develop mucosal hyperreactivity, which is an increased sensitivity of the nasal mucosa to various nonspecific irritants that do not cause symptoms in healthy people. Triggers include tobacco smoke, perfumes, strong odors, changes in temperature or humidity. However, symptoms of HR can also occur without exposure to triggers. Clinical manifestations may vary, but the predominant symptoms are difficulty breathing through the nose and mucous discharge from the nose, which reduce the quality of life of patients, worsen their psychoemotional state, limit social activity, forcing the patient to seek medical help. Over time, CR contributes to the development of inflammatory diseases of the paranasal sinuses and middle ear. Drug treatment of chronic rhinitis is considered the starting therapy: irrigation therapy, topical corticosteroids, but if conservative treatment methods are ineffective and complaints of difficulty in nasal breathing persist as the predominant symptom, the question arises of choosing the optimal type of surgical intervention on the inferior turbinates. Currently, surgical treatment is widely used in the treatment of patients with chronic rhinitis. The most common surgical intervention for chronic rhinitis is submucous vasotomy of the inferior turbinates. It is performed mechanically (with a scalpel and raspator), with a laser beam, and ultrasound. According to the literature, the use of ultrasound, cryodestruction, galvanocautery, argon-plasma and mechanical technologies in the surgical treatment of patients with chronic rhinitis is not effective enough: complications and relapses of the disease requiring repeated surgical intervention have been noted. Therefore, studies to improve the effectiveness of surgical treatment of patients with chronic rhinitis are relevant in otolaryngology.

Thus, according to the literature, there are many options for surgical treatment of patients with CR. Based on this, it can be concluded that optimal methods of surgical treatment of patients with CR have not been developed, which would maximally preserve the functions of the mucous membrane of the nasal cavity, which affects faster recovery and fewer intra- and postoperative complications in the form of bleeding, formation of adhesions.

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