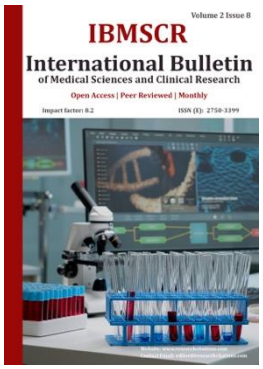

MODERN METHODS OF TREATMENT OF NASAL OBSTRUCTION

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Abstract: Nasal breathing is an active physiological process that has a comprehensive effect on the functional state of the body. The purpose of the review is to study various methods of treating nasal obstruction. The materials of the review are publications over the past 10 years devoted to various methods of treating nasal obstruction. The review showed that in case of nasal obstruction it is necessary to clarify the etiology, conduct a comprehensive study, including functional methods of examining the nose to choose tactics and evaluate the effectiveness of treatment.

Keywords: nasal obstruction, etiology, diagnostics, functional studies of the nose.

In recent years, the number of patients with chronic nasal obstruction has been growing, despite significant advances in the diagnosis and treatment of this pathology. This is due to the deterioration of the environmental situation, smoking, the increasing role of allergies, the unjustified use of various medications, as well as the patient's reluctance to admit the need for surgical treatment [2,5,8,11,12]. In 80-87% of cases, deformation of the nasal septum is one of the most common causes leading to disruption of the air flow through the nasal cavity, and, consequently, difficulty in nasal breathing and the development of rhinitis. Thus, vasomotor rhinitis accounts for 21% of chronic rhinitis, and hypertrophic rhinitis in the structure of ENT diseases - from 6 to 16%. The proportion of such diseases is from 23 to 31% among the causes of all operations performed in an ENT hospital according to planned indications. Vasomotor and hypertrophic rhinitis not only significantly worsen the quality of life of patients, but also contribute to the development of pathological conditions of other parts of the respiratory system [1,6,7,9,13].

The changes in pulmonary ventilation that arise against this background underlie the imbalance, accumulation of underoxidized metabolic products in the blood and the development of acidosis, destabilization of cell membranes, and the formation of disorders at the organ level. The effect of the hypoxia factor in chronic obstruction of nasal breathing on cerebral hemodynamics, erythrocyte indices, and subjective sensations of the patient has not been sufficiently studied and covered in the literature [3,4,8,10,14].

Often, outpatient doctors are only engaged in conservative treatment of chronic rhinitis and do not provide the patient with complete information about the need for corrective surgery on the nasal septum, as the most important stage in eliminating the cause of nasal obstruction [5,9].

The purpose of the review is to study various methods of treating nasal obstruction. The review materials are publications for the last 10 years devoted to various methods of treating nasal obstruction.

Review results and their discussion. Reliable functioning of ENT organs ensures both an active lifestyle and is an indispensable condition for professional suitability - the ability to

perform a number of tasks related to the operation of many technical means. The most common reason for contacting ENT specialists is impaired nasal breathing, which contributes to the development of many pathological changes in the upper respiratory tract (vasomotor rhinitis, sinusitis, dysfunction of the auditory tube, etc.) and has a negative effect on the human body as a whole [9].

The nervous, cardiovascular and hematopoietic systems react most strongly to oxygen starvation. People with pathologies of the above systems or those who are under significant physical exertion, constant stress, intense activity, such as athletes and military personnel, are most sensitive to oxygen starvation.

Many anatomical and functional changes can lead to nasal breathing disorders, but the most common cause is a deviated nasal septum and insufficiency of the nasal valves [12].

A well-known method of surgical treatment of a deviated nasal septum is septoplasty. Classical submucous resection of the nasal septum, having a number of disadvantages, has recently undergone a number of changes. Thanks to the improvement of diagnostic methods, domestic and foreign researchers are actively studying the effect of the state of the nasal mucosa in various areas on nasal breathing and improving surgical reduction methods [8].

Treatment of patients with diseases of the middle ear, pharynx (adenoiditis, tonsillitis, tonsillitis), upper respiratory tract, in the presence of deformation or defect of the nasal septum, disrupting the main functions of the nose, corrective surgery on the nasal septum is necessary [12].

Treatment of curvature of the nasal septum is surgical. The purpose of the operation is to restore aerodynamics in the nasal cavity by eliminating obstacles to the normal passage of air flow. There are many methods and techniques for these interventions, but the search for new ones and improvement of old ones continues [13].

The proposed methods can be divided into two groups:

1) methods based on resection of the nasal septum according to Killian with its subsequent modifications.

2) methods based on plastic surgery of the nasal septum according to V.I. Voyachek and Cottle.

The Killian method consists of resection of the curvature of the nasal septum after separation of the mucous membrane on both sides with subsequent fixation of the mucous membrane in the middle position with tampons. However, despite the restoration of nasal breathing, there are a number of significant disadvantages, such as "floatation" of the nasal septum in the postoperative period due to the absence of a hard skeleton, a high probability of perforation both during the operation and in the postoperative period, dry nose, crust formation, drooping of the tip of the nose, and columella retraction. According to various authors, the percentage of postoperative complications ranges from 10 to 27% [14]. Existing modifications, developed, in particular, by domestic scientists, made the submucosal resection technique more gentle, allowed to restore the integrity of the nasal septum skeleton due to reimplantation of cartilage and bone fragments. The operation proposed by Cottle in 1960 is fundamentally different from the Killian method. It consists of eliminating the curvature of the nasal septum and at the same time allows to preserve the hard skeleton of the nasal septum as much as possible.

The most effective is the classic version of the method: through an incision along the caudal edge of the quadrangular cartilage, the mucous membrane is separated on both sides,

then a strip of cartilage is excised in the dorsal section along its entire length and an incision is made in the cartilage in the cranial section, retreating 3-4 mm from the caudal edge of the perpendicular plate, and the last incision is completed at a distance of 5-6 mm from the ventral edge of the quadrangular cartilage, partially mobilizing it according to the "Swinging door" type and, moving it aside with a Killian mirror, access is gained to the posterior sections of the nasal septum. With this technique of surgery, it is possible to preserve most of the quadrangular cartilage, as well as the unexcised bone section of the nasal septum. Separation according to Cottle allows one to avoid many negative aspects inherent in the Killian operation [12]. In 1966, proposed an etiopathogenetic classification of BP, identifying two of its forms: allergic (in which attacks occur as a result of exposure to allergens on the human body), neurovegetative (based on functional and organic changes in the autonomic nervous system) [2]. Our study included patients with the neurovegetative form of vasomotor rhinitis. VR can be treated with conservative and surgical methods. Conservative treatment includes a whole range of different effects. Currently, decongestants, local and systemic corticosteroids, antihistamines are widely used. Physiotherapy (phonophoresis of heparin, zinc salts, vibration massage), ultrasound therapy, acupuncture, herbal medicine, aromatherapy, hirudotherapy, therapeutic fasting are used [7]. Therapeutic methods of treatment have a positive, but often short-term effect. According to a number of authors, many methods of exposure in the nasal cavity result in irreversible damage to the mucous membrane of the nasal turbinates, which ultimately leads to metaplasia, scarring, atrophic processes and functional disorders [10]. The goal of surgical treatment should be “elimination of complaints while maintaining function” and ‘optimal volume of reduction while maintaining function’. Galvanocautery, ultrasonic disintegration, cryodestruction, laser vaporization, vasotomy, and lateroconchopexy are used in surgical treatment of VR. [11] Currently, not all existing methods meet the above criteria, and some operations are of historical interest only. Since the last quarter of the 19th century, more than 13 different technologies have been introduced for treatment. Some methods have been rejected, while others are still used or have been reintroduced and modified. Disagreements about the effectiveness of various methods exist to this day [13].

All surgical intervention methods must meet two main criteria:

1. effectiveness of the technology for restoring respiratory function;
2. minimization of side effects in the postoperative period.

Summarizing all of the above, it can be noted that the information presented in the literature concerns mainly the anatomical features of the nasal septum, problems of surgical treatment of chronic rhinitis.

Thus, it follows that when choosing a treatment strategy for nasal obstruction, it is necessary to carefully study the results of a comprehensive study, as well as adhere to more functional methods of surgical intervention.

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