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Strategy of Care Delivery in Patients with Nasal Valve Dysfunction

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Abstract

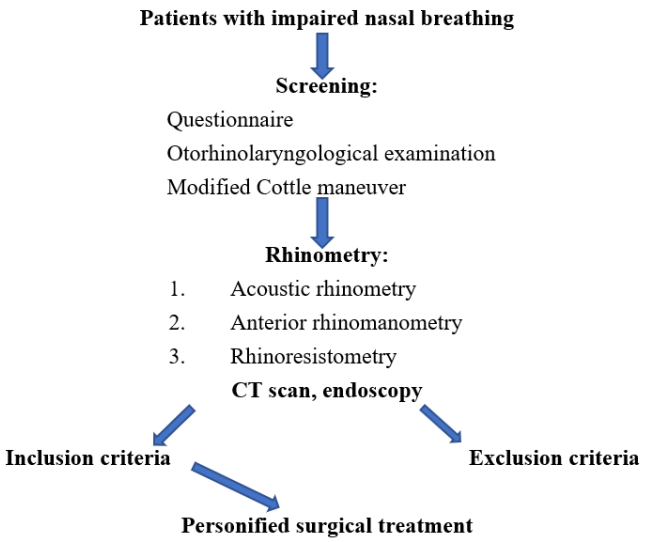
The nasal valve is a complex three-dimensional structure consisting of several morphological structures. From the physiological point of view, this is the place of greatest resistance to the flow of air passing through the cavity. Thus, in accordance with Poiseuille's law, even minor narrowing of this area leads to a clinically significant disturbance of the patient's nasal breathing. The etiology of the nasal valve dysfunction is versatile, making it necessary to develop an individual treatment algorithm for patients with impaired nasal breathing.

The conducted research allowed us to formulate an algorithm for helping patients with nasal valve dysfunction, which is based on data on the effectiveness of various treatment methods in the main types of pathology, as well as consideration of additional factors, such as operations and the shape of the external nose.

To determine the risk factors of the nasal valve dysfunction, we examined and questioned 482 patients with complaints of obstructed nasal breathing. All the patients underwent computed tomography, endoscopy of the nasal cavity, as well as a set of rhinometry studies (acoustic rhinometry, anterior active rhinomanometry, rhinoresistometry) in accordance with the recommendations of the international consensus. In 86 patients nasal valve dysfunction was detected (17.8%). By means of statistical data processing, factors that are predictors of nasal valve dysfunction were identified, which allows screening patients without the need for extensive implementation of costly procedures (CT, acoustic rhinometry). Based on the data obtained, a mathematical prediction program and a complex diagnostic algorithm were developed.

Considering the data of mathematical prediction, a complex personified approach of nasal valve dysfunction treatment was developed taking into account the level (levels) of narrowing. This allowed to justify the choice of treatment tactics, minimize the unjustified choice of the surgical treatment method.

Image



Pic. 1. Strategy of Care Delivery in Patients with Nasal Valve Dysfunction

Recent Publications (minimum 5)

1. Bloching MB. Disorders of the nasal valve area. GMS Curr Top Otorhinolaryngol Head Neck Surg. 2007; 6: Doc07.
2. Goudakos J, Fishman J, Patel K. A systematic review of the surgical techniques for the treatment of internal nasal valve collapse: where do we stand? Clin Otolaryngol. 2017;42:60–70.
3. Mlynski G. Wiederherstellende Verfahren bei gestörter Funktion der oberen Atemwege. Nasale Atmung. Laryngo-Rhino-Otol2005; 84:101-117.
4. Rizvi S, Gauthier M. Lateralizing the collapsed nasal valves simplified: 10-Year Survey of a Simple Concealed Suture Technique. Laryngoscope. 2011;121:558–61.
5. Hamilton GS II. The external nasal valve. Facial Plast Surg Clin North Am 2017;25: 179–94.
6. Rhee JS, Weaver EM, Park SS, Baker SR, Hilger PA, Kriet JD, Murakami C, Senior BA, Rosenfeld RM, DiVittorio D. Clinical consensus statement: diagnosis and management of nasal valve compromise. Otolaryngol Head Neck Surg. 2010; 143: 48–59.

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Biography

Andrei Makaryn-Kibak works as an ENT surgeon in the Department for Adults in the Scientific and Practical Center of Otolaryngology of the republic of Belarus for 6 years. In 2012 graduated from the Belarusian State Medical University. Passed advanced training in FESS and middle ear surgery in Jacksonville, USA, Innsbruck, Austria, Dresden, Germany, Tubingen, Germany. Interests: nasal breathing difficulties, nasal valve, nasal cycle, FESS, hearing improvement and reconstruction surgery for the middle and inner ear, balloon dilation of the Eustachian tube.

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Biography

Zhanna Kaliadzich is in charge of the Head and Neck Oncology Division with neurosurgical group of the State Institution «N.N. Alexandrov Scientific and Practical Center of Oncology and Medical Radiology» of the Republic of Belarus. Our focus areas are:

- surgical and combined treatment of patients with tumors of the larynx, oropharyngeal region, nasal cavity and paranasal sinuses;
- endoscopic, minimally invasive surgical techniques to preserve the patients' quality of life;
- chemotherapeutic treatment with target drugs;
- study of the influence of smoking and etc., environment on the occurrence of tumors of the oral cavity, nose, and larynx;
- genome research, predisposition to tumor diseases;
- role of HPV in the development of head and neck tumors;
- screening and prevention of head and neck tumors,
- patients with OSA,
- rhinoplasty.

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Notes/Comments: