

## 7. EMPTY NOSE SYNDROME



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**Introduction.** Empty nose syndrome (ENS) is considered primarily an iatrogenic pathology, secondary to surgical treatment on the middle and lower nasal cornet. The frequency of ENS is not known exactly, several studies have reported an occurrence rate of 8%-22% in patients who have undergone turbinate reduction.

**Aim of study.** To review current knowledge of pathophysiological mechanisms and clinical manifestations in relation to empty nose syndrome (ENT).

**Methods and materials.** A literature review of articles published on PubMed, Elsevier, Medline. To identify the relevant articles, the following keywords were used: "empty nose syndrome", "nasal obstruction", "turbinate reduction".

**Results.** Empty nose syndrome (ENS) remains a controversial topic in contemporary rhinology, despite an initial description almost 30 years ago. Although total turbine excision is the most common cause of ENS, smaller procedures (e.g., submucosal cauterization, submucosal resection, and, laser therapy and cryosurgery) for reducing turbinates can also cause problems if performed in an excessively aggressive manner. With a reduced surface area of the mucosa and no turbulent physiological airflow in patients with empty nose syndrome, the nasal mucosa cannot perform its main functions of air conditioning and cleansing generating a string of symptoms (paradoxical perception of nasal obstruction, despite normal nasal permeability, nasal crusting, dryness, nasal discharge, facial pain, sleep disorders, mental concentration disorders and suffocation). Standardized questionnaires SNOT-25 and ENS6Q are useful in diagnosing and evaluating subsequent treatment. A score of 11 out of 30 or greater on the ENS6Q has a specificity of more than 95% and a sensitivity or more than 85% for ENS. Pathology management includes mucosal humidification, irrigation and emollients. Surgical therapy should be reserved for refractory cases and may involve reconstruction of the cornetae, most commonly using implantable biomaterials.

**Conclusion.** Empty nose syndrome is a complex pathology. Recognition of empty nose syndrome is necessary in order to reduce the risk of ENS by aggressive turbinate surgery (total turbinate resection) which can lead to the development of the mentioned syndrome, except cases of tumor excision.