

Evaluation of the Reasons for Dissatisfaction of the Patients and Indications for a Revision Surgery after Septoplasty and Inferior Turbinate Surgery

Muhammet Recai Mazlumoglu¹ , Buket Özel Bingöl² 

¹Clinic of Otorhinolaryngology, Hınıs Şehit Yavuz Yürekseven State Hospital, Erzurum, Turkey

²Clinic of Otorhinolaryngology, Region Training and Research Hospital, Erzurum, Turkey

Abstract

Objective: The rates of patient dissatisfaction in terms of persistent nasal obstruction after septoplasty and inferior turbinate surgery are high. Although this is common in otorhinolaryngology practice, scarce data is available. In this study, we evaluated the causes of persistent nasal obstruction in patients after septoplasty and inferior turbinate surgery to identify the reasons for patient dissatisfaction and the etiologies that should be considered during surgical planning.

Material and Methods: The study population comprised 47 patients (26 females and 21 males) with chronic nasal obstruction who had previously undergone inferior turbinate surgery and septoplasty. We evaluated the patients history, detailed examination and endoscopy, imaging, and the Nasal Obstruction Symptoms Evaluation (NOSE) scale. Based on the study findings, we identified the etiologies that lead to the requirement of a revision surgery.

Results: The study included 26 female and 21 male patients. The mean obstruction level of the patients based on NOSE scale was 2.2 ± 0.4 . The most common etiologies identified in this study were nasal valve stenosis in 19 patients (40%), inferior turbinate hypertrophy in 12 (26%), and caudal septal deviation in 9 (19%).

Conclusion: We recommend careful evaluation of the nasal valve area in patients scheduled for septoplasty and inferior turbinate surgery due to nasal obstruction. Insufficient surgery is the main reason for revision surgery and dissatisfaction of the patient.

Keywords: Septoplasty, inferior turbinate, revision surgery, nasal valve, patient dissatisfaction

INTRODUCTION

The most important and main nasal functions are providing upper airway flow, regulating air temperature and humidity, and preventing passage of harmful particles into the lower respiratory tract. The septum and the inferior conchas are vital organs in this regard (1, 2).

The anatomic disorders in the nasal septum and the inferior conchas are the cause of impaired nasal airflow, leading to nasal obstruction. Failure to breathe well disrupts the quality of life and refer patients to otorhinolaryngologists. Therefore, septoplasty and concha surgery are commonly performed by otolaryngologists (1, 3). However, long-term patient dissatisfaction is, up to 51% percent has been reported after these surgeries (4), that is leading to revision surgeries.

In this study, we investigated the long-term patient dissatisfaction after septum and concha surgeries, which is commonly performed by otorhinolaryngologists, and the reasons for revision surgeries. Thus, we aimed to contribute to the literature that has few studies related to this subject.

MATERIAL AND METHODS

We evaluated 47 patients who had symptomatic nasal obstruction and in whom primary septum and inferior concha surgeries were simultaneously performed. The study was conducted between September 2014 and May 2016. An ethical committee approval was not obtained in the study because no additional intervention was conducted,

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Address for Correspondence:

Muhammet Recai Mazlumoglu

E-mail:

dr.mazlumoglu@gmail.com

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except for the routine procedures performed in patients, and no medical treatment was applied. However, informed consent was obtained from the patients. The patients had undergone the attentive surgical procedure at least 3 months ago. Patients who underwent the surgery particularly in different centers were also included in the study. Patients diagnosed with allergic rhinitis, nasal polyposis, chronic sinusitis, and adenoid vegetation were excluded from the study. In addition, those who underwent various procedures, including endoscopic sinus surgery and rhinoplasty, and those who had postoperative nasal trauma were also excluded.

Once the history of the patients were obtained, we detected the pathology of the patients through examination with nasal speculum, endoscopic examination, and computerized tomography (if necessary). The surgical technique applied to the patients was verified by reviewing the operation notes. The experience of the surgeon and the preoperative shape and severity of the deformities were noted by investigating patient records. We also graded the complaints of patients using the Nasal Obstruction Symptoms Evaluation (NOSE) scale (Table 1).

We determined three criteria for the application of revision surgery: dissatisfaction in breathing, a score of NOSE ≥ 2 , and the detection of deformity/deformities. We recorded the deformities in the patients who possessed all these evaluation criteria and the surgical interventions that we recommended.

Statistical Analysis

The data were analyzed using SPSS (SPSS Inc.; Chicago, IL, USA). Data are presented as numbers, percentages and mean \pm standard deviation (95% confidence intervals).

RESULTS

The study included 26 female and 21 male patients with an average age of 36.3 years. The average time elapse since the patients' previous surgery was 2.7 years. In addition, 6 patients had undergone ≥ 2 surgeries.

Table 1. Nasal obstruction symptoms evaluation scale³

0: No complaints
1 Mild: No discomfort, 1-4 nose blows/day in daily life, and no use of analgesic for headache
2 Medium: Discomfort that urges the patient to breathe through the mouth, 5-10 nose blows/day, and there is a need for non-narcotic analgesic for headache
3 Severe: Discomfort during sleep, constant nasal discharge, low voice quality, and there is a need for narcotic analgesic for headache

Table 2. Nasal pathologies requiring revision surgery

Nasal cavity pathology	Number (n)	Frequency (%)
Nasal valve stenosis	19	40
Lower concha hypertrophy	12	26
Caudal septal deviation	9	19
Septal shift	8	17
Nasal cavity stenosis	4	9
Septal perforation	3	6
Multiple pathologies	8	17
Nasal valve stenosis was the most common cause of revision surgery		

All 3 criteria (dissatisfaction, NOSE score ≥ 2 , an identified deformity) were observed in the etiologies requiring a revision surgery. The most common deformities we identified were 19 (40%) nasal valve stenosis, 12 (26%) inferior concha hypertrophy, 9 (19%) caudal septal deviation, 8 (17%) septal shift, 4 (9%) nasal cavity stenosis, and 3 (6%) septal perforation cases (Table 2). The average score in NOSE was 2.2.

DISCUSSION

Nasal septum and concha surgeries are frequently performed procedures by otolaryngologists. Several different technique have been used for decades. However, a standard method is unavailable because no single technique shows all the indications for surgery. The experience and preferences of the surgeon have to be considered (1).

The nasal septum, inferior concha, lower-upper lateral cartilages, and nasal base are the most important structures in nasal physiology (3). Anatomical or functional disorders in these structures are the first pathologies to be considered in the deterioration of nasal airflow. Additionally, chronic rhinitis, including allergic and vasomotor rhinitis, chronic sinusitis, nasal polyposis, nasopharyngeal pathologies, and intranasal masses, can lead to nasal obstruction (1, 4, 5). We excluded the patients from the study group, who had these additional pathologies.

Septal deviation is considered as the most common cause of nasal obstruction and the main anatomical variation of the nose. Moreover, there are studies reporting that approximately 90% of the population has septal deviation. Most of them are accepted to be physiological. Those which subjectively or objectively restrict the nasal airflow are accepted to be pathological (6, 7). In the study by, Kuduban et al. (3) found that the most common cause of patient dissatisfaction was persistent obstructive septal deviation followed by inferior concha hypertrophy. Although, the most common cause is different from that of our study, inferior concha hypertrophy is compatible with that of our study. We hypothesize that insufficient intervention causes the inferior concha regrowth.

The nasal valve is formed by the septum, caudal end of upper lateral cartilages, anterior part of the lower concha, and nasal base. It is one of the most important anatomical regions of the nose because it is the narrowest region of the nose and shows the greatest resistance to airflow. The angle between the septum and upper alar cartilage is normally 10°–15° (7, 8). The examination of this region and the determination of nasal valve inadequacy are important. This region can be evaluated using the Cottle maneuver and endoscopic examination (8, 9). In our study, we found that the nasal valve insufficiency is to be the most common cause of a revision surgery. We believe that this is because sufficient consideration is not given to this region while focusing on the septum and inferior conchas.

It was also remarkable that caudal septal deviation was the third most common cause in our study. We think, the reason for this is the anterior deviation may require particularly open septoplasty, and more complex surgeries should be abstained by the surgeon.

As mentioned earlier, there are no common criteria accepted by all surgeons when making an indication for septoplasty and concha surgery. Therefore, we have set certain criteria to increase the objectivity in the patients included in the study. We consider the lack of objective criteria for patient selection and the small number of patients as the limitations of our study. Further, studies including more patients and whose preoperative and postoperative results are compared through objective tests such as rhinomanometry and acoustic rhinometry would contribute to this issue.

CONCLUSION

The interventions related to the nasal valve region are important for reducing the risk of a revision surgery. We also recommend a more comprehensive approach to the inferior concha and caudal septal deviations.

Ethics Committee Approval: Authors declared that the research was conducted according to the principles of the World Medical Association Declaration of Helsinki "Ethical Principles for Medical Research Involving Human Subjects", (amended in October 2013).

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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