

# The Reason of Dissatisfaction of Patient after Septoplasty

## Septoplasti Sonrası Hastada Memnuniyetsizlik Nedeni

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### Abstract

**Objective:** The objective of this study was to evaluate the causes of persistent nasal obstruction of patients after septoplasty.

**Materials and Methods:** After exclusion of allergic rhinitis, non-allergic rhinitis and nasal polyposis, this study included 90 patients with nasal breathing problem who underwent septoplasty at least 4 months ago. After taking full history and completing otorhinological and endoscopic examination, all patients graded their extent of obstruction using the Nasal Obstruction Symptoms Evaluation scale.

**Results:** Our results showed only 45% of patients' persist septal deviation; besides other obstructive pathologies, 55% were detected after detailed otolaryngologic evaluation.

**Conclusion:** Therefore, septal surgeons need to observe all obstructive causes of the nose carefully before planning the procedure.

**Keywords:** Nasal obstruction, septoplasty, endoscopic, rhinitis

### Özet

**Amaç:** Bu çalışmanın amacı septum cerrahisi geçirmiş olmasına rağmen burun tıkanıklığı şikayeti devam eden hastalarda buna neden olan durumun veya durumların değerlendirilmesidir.

**Gereç ve Yöntem:** Alerjik rinit, non-alerjik rinit ve nazal polipozis hastalığı olmayan ve septum cerrahisi geçirme hikayesine sahip 90 hasta çalışmaya dahil edildi. Hastalar anamnezleri alınıp otolaringolojik muayeneleri yapıldıktan sonra "Nasal Obstruction Evaluation" skalası ile değerlendirildiler.

**Bulgular:** Hastaların %45'inde persiste eden nazal septum deviasyonu saptandı. Diğer %55'inde de obstrüksiyona yapan diğer nedenler gözlemlendi.

**Sonuç:** Sonuç olarak septum cerrahisi ile uğraşan cerrahların ameliyat öncesi obstrüksiyona neden olabilecek tüm nedenleri saptaması ve cerrahi planlamanın buna göre yapılması hastayı ikinci bir nazal cerrahiden koruyacaktır.

**Anahtar Kelimeler:** Nazal obstrüksiyon, septoplasti, endoskopik, rinit

### Introduction

Nasal breathing well is a condition directly related to quality of life. Chronic nasal airway obstruction is one of the most frequent complaints visited to otolaryngologists by the patients [1]. There are several studies and clinical observations stating that septal deviation is the most important cause of nasal obstruction. Therefore, septoplasty is one of the common surgical procedures performed by otolaryngologists. Sometimes nasal obstruction can persist after septoplasty. To avoid patient dissatisfaction after septoplasty, surgeons have developed a variety of techniques. Appropriate surgical procedure will improve the patient's quality of life [2].

Patient history, physical examination with anterior rhinoscopy, endoscopic examination and palpation of nasal dorsum

are necessary to evaluate the reasons of nasal obstruction. Moreover, using computerized tomography scanning will be helpful to determine the causes of nasal obstruction [3]. Thus, septal deviation, which is the most frequent cause of nasal obstruction, and the other causes of nasal obstruction will be established and treated. Inadequate surgical procedure leads patient to reconsult to an otolaryngologist because of unimproved nasal airway obstruction. With persistent septal deviation, septal perforation, untreated nasal valve insufficiency, inferior turbinate hypertrophy or nasopharyngeal pathologies are the main reasons of persistent nasal obstruction after septoplasty [2].

The purpose of this study was first, to assess the reasons for patient dissatisfaction after septoplasty, and, second, to point the other likely obstructive pathologies of the nose. At the same time, this research may lead septoplasty surgeons to avoid cursory otolaryngologic examination.

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## Materials and Methods

Totally 90 patients were included in this retrospective follow-up study. All included patients referred to our Otolaryngology Department of the Erzurum Bölge Training and Research Hospital between July 1, 2013 and January 15, 2014. The patients' ages ranged from 18 to 50 years.

We included the patients who had a complaint of nasal airway obstruction and also who underwent septoplasty surgery at least 4 months ago. After taking full history, we confirmed the presence of the nasal pathology initially detected by nasal speculum, nasal endoscopy and using computed tomography scanning of the sinuses for some patients. We graded the extent of obstruction in all patients by using the Nasal Obstruction Symptoms Evaluation scale [4]. This scale determines the obstruction, nasal discharge and headache; each symptom was evaluated using a 4-point grading scale (Table 1). We excluded the patients with allergic rhinitis, non-allergic rhinitis with eosinophilia, acute and chronic sinusitis, nasal polyposis, antrochoanal polyps, and who had recently used topical or systemic decongestants or nasal steroids. We also excluded any patient with a history of nasal trauma suffered after septoplasty.

## Results

All referred patients had nasal airway obstruction and their complaint was also persisting after septoplasty surgery.

The rhinologic and radiologic studies showed that 27 patients (30%) had persistent obstructive septal deviation; 7 (8%) had persistent obstructive septal deviation with nasal valve insufficiency; 12 (14%) had nasal valve insufficiency; 23 (25%) had inferior turbinate hypertrophy, 6 (9%) had persistent obstructive septal deviation with inferior turbinate hypertrophy, 8 (9%) had isolate nasal tip ptosis; 5 (6%) had septal perforation and 2 (5%) had nasopharyngeal lymphoid hyperplasia (Table 2). We detected synechiae approximately in 2 mm diameters between septal mucosa and inferior turbinate in 4 patients. However, this pathology did not cause any nasal obstruction because of its thinness. On four-point box scale, the average of nasal obstruction symptom scale was 2.3.

## Discussion

This study focused on examining the role of each structural elements of the nose to nasal breathing and evaluating the causes of the persistent nasal obstruction of patients who had undergone septoplasty in the past. Nasal septum, inferior turbinates, upper and lower lateral cartilages and floor of the nose have great value for nasal physiology [5]. Moreover, nasopharyngeal passage is another important factor for nasal breathing. If there is a pathology in any of these structures, nasal breathing will be impaired. Furthermore, if a detailed preoperative rhinological evaluation is not done, no matter how successful your surgical technique applied; the patient may not have normal nasal breathing due to the inadequate process. Therefore, all obstructive nasal pathologies must

**Table 1. Nasal Obstruction Symptoms Evaluation scale [4]**

0	No	No
1	Mild (causing no disturbance mild (1-4 nose blowing/day) inpatient's daily life)	Mild (not requiring analgesia for headache relief)
2	Moderate (forcing the patient to Moderate (5-10 noseblowing/day) Breathe through the mouth) analgesics for headache relief)	Modarete (requiring nonnarcotic)
3	Severe (causing sleep disturbances Severe (continuous nasal discharge) and decrease in voice quality) for headache relief)	Severe (requiring narcotic analgesis)

**Table 2. Post-septoplastypersistant nasal airway obstruction causes**

Obstructive Pathology	No.	%
Persistant obstructive septal deviation	27	(30)
Persistant obstructive septal deviation with inferior turbinate hypertrophy	6	(7)
Persistant obstructive septal deviation with nasal valve insufficiency	7	(8)
Inferior turbinate hypertrophy	23	(25)
Nasal valve insufficiency	12	(14)
Nasal tip ptosis	8	(9)
Septal perforation	5	(6)

be observed preoperatively and treated entirely in the same session.

Deviation of nasal septum is a common anatomic variation and the most frequently causes of nasal obstruction [6]. Septal deviation demonstrates a diverse spectrum from mild deviation to severe and difficult to treat deformity. Therefore, septoplasty is needed to relieve the uncomfortable symptom of nasal obstruction. Various methods have been employed to treat the nasal septal deviation with the goal of constructing a straight and stable septum, thus decreased complications and increased life quality will be provided. To get the desired results, the most appropriate septoplasty technique must be applied. However, septoplasty is hard to be trained, and some surgeons have a fear of side effects and unsatisfactory results. To avoid complications, the surgeon must be focused to the nasal anatomy and the surgical technique [7]. While classic techniques are often successfully employed to address mild to moderate deviations of nasal septum, severely deviated nasal septum represents a unique challenge for the surgeon. For the severely distorted septum, extracorporeal septoplasty is often needed. Extracorporeal septoplasty offers the surgeon the opportunity to correct the septum under direct visualization [8]. Thereby, septorhinoplasty may be needed to straighten the deviated septum for dorsal nasal septal deformities [9].

Nasal tip has a great value for nasal framework. Intimate knowledge of major and minor tip support mechanisms is necessary for intimate long-term outcomes. The septum and major alar cartilages were identified as the most important contributors to structural support of nasal tip. Other major supports of the nasal tip are upper lateral attachment to the cephalic margin of the alar cartilages and wrap-around attachment of the medial crural footplates to the caudal septum. Anterior septal angle, nasal spine and ligamentous sling spanning the paired domes of the alar cartilages are the minor supports of the nasal tip [10]. Degradation in any of these supports may cause nasal obstruction. For instance, over-resection of caudal septum leads to a dramatic reduction in tip support as well as the creation of unattractive tip deformities. This reduction causes the ptosis of the nasal tip and thus obstructs the nasal breathing.

As early as 1882, Zuckerkandl described the nasal valve as follows: "The fold of the upper lateral cartilage and the wall of the nasal septum form a space leading into the nasal cavity that is much narrower than the external naris." Mink called this area the nasal valve because of its dynamic function in regulating the cross-sectional area of the nasal airway. A positive Cottle manoeuvre shows a problem with the nasal valve: When the ala is pulled laterally upward, the nasal valve opens and breathing improves. Therefore, the Cottle test should be performed in each patient who has complaint of nasal

breathing problem [11]. One of the procedures for nasal valve surgery must be performed if there is a pathology.

Inferior turbinate hypertrophy can be established by anterior rhinoscopic or endoscopic examination. This situation can be compensatory to the septal deviation or caused by allergic or vasomotor rhinitis or idiopathic. Medical treatment is preferred in allergic or vasomotor rhinitis. Since septal deviation accompanies hypertrophy of inferior turbinate mostly, septoplasty can be performed with any reducing procedure of inferior turbinate in the same session [12]. Lots of surgery procedures have found to treat the inferior turbinate hypertrophy such as lateral out-fracture, sub-mucosa resection, turbinoplasty, radiofrequency assisted turbinate reduction etc. [13, 14].

Septal perforation is a complication that cause "empty nose". This undesired statement means the insensitivity of inspirating from the nose. The patient with septal perforation referred to us with complaints of nasal bleeding, nasal dryness, incrustation and also nasal obstruction. This is a hard repairable problem for otolaryngologists [15].

Although nasopharyngeal lymphoid hyperplasia may be detected commonly under the age of 18, it should be noted that this obstructive cause can rarely occur in adults [16]. Therefore, endoscopic examination has also a great value to evaluate the nasopharynx before planning the surgical procedure. After pathologic examination, this obstructive cause must also be treated.

In conclusion, nasal septum deviation is the most common cause of nasal obstruction. However, other causes including nasal valve insufficiency, inferior turbinate hypertrophy, and nasopharyngeal pathologies should be kept in mind. After a detailed pre-operative examination, all causes of nasal obstruction must be treated in the same session. Increasing the knowledge and experience in septoplasty and treating all obstructive pathologies of nasal structures together may avoid the patient from revision surgery. The surgeons' primary goal must be to provide acceptable nasal airway to the patients.

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## References

1. HaroonY, Saleh HA, Abou-Issa AH. Nasal soft tissue obstruction improvement after septoplasty without turbinectomy. *Eur Arch Otorhinolaryngol* 2013; 270: 2649-55.
2. Bezerra TFP, Steward MG, Fornazierei MA, et al. Quality of life assessment septoplasty in patient with nasal obstruction. *Braz J Otorhinolaryngol* 2012; 78: 57-62.
3. Duarte AF, Solerde C, Zavarezzi F. Nasal endoscopy associated with paranasal sinus computerized tomography scan in the diagnosis of chronic nasal obstruction. *Braz J Otorhinolaryngol* 2005; 71: 361-3.
4. Steward MG, Witsell DL, Smith TL, Weaver EM, Yueh B, Hannley MT. Development and validation of the Nasal Obstruction Symptom Evaluation (NOSE) scale. *Otolaryngol Head Neck Surg* 2004; 130: 157-63.
5. Zhu JH, Lim KM, Thong KT, Wang DY, Lee HP. Assessment of airflow in human nasal cavity and maxillary sinus before and after targeted sinonasal surgery: A numerical case study. *Respir Physiol Neurobiol* 2014; 194: 29-36.
6. Reitzen SD, Chung W, Shah AR. Nasal septum deviation in the pediatric and adult populations. *Ear Nose Throat J* 2011; 90: 112-5.
7. Sillers MJ, Cox AJ 3rd, Kulbersh B. Revision septoplasty. *Otolaryngol Clin North Am* 2009; 42: 261-78.
8. Steele T, Funamura JL, Marcus BC, Tollefson TT. Correction of severely deviated septum: extracorporeal septoplasty. *Ear Nose Throat J* 2013; 92: 421-4.
9. Zoumalan RA, Carron MA, Tajudeen BA, Miller PJ. Treatment of dorsal deviation. *Otolaryngol Clin North Am* 2009; 42: 579-86.
10. Behrbohm H, TardyJr ME. Essentials of septorhinoplasty In: TardyJr ME (ed) *Contemporary rhinoplasty: Principles and philosophy*, first edition. Thieme: New York. pp. 37-63.
11. Behrbohm H, TardyJr ME. Essentials of septorhinoplasty In: Behrbohm H (ed) *The dual character of nasal surgery*, first edition. Thieme: New York 2004. pp. 1-33.
12. Korkut AY, Islim F, Gulseven Ciftci S, et al. Evaluation of inferior turbinate hypertrophy in patients with congenital and traumatic nasal septum deviation. *J Laryngol Otol* 2013; 126: 784-8.
13. Brunworth J, Holmes J, Sindwani R. Inferior turbinate hypertrophy: review and graduated approach to surgical treatment. *Am J Rhinol Allergy* 2013; 27: 411-5.
14. Safiruddin F, Vroegop AV, Ravesloot MJ, de Vries N. Long-term self-reported treatment effects and experience of radiofrequency-induced thermotherapy of the inferior turbinates performed under local anesthesia: a retrospective analysis. *Eur Arch Otorhinolaryngol* 2013; 270: 1849-53.
15. Moon IJ, Kim SW, Han DH, Kim ST, Min YG, Lee CH, Rhee CS. Predictive factors for the outcome of nasal septal perforation repair. *Auris Nasus Larynx* 2011; 38: 52-7.
16. Rout MR, Mohanty D, Vijaylaxmi Y, Bobba K, Metta C. Adenoid hypertrophy in adults: A case series. *Indian J Otolaryngol Head Neck Surg* 2013; 65: 269-74.