

Comparative Study of Nasal Symptoms Following Septoplasty with Inferior Turbinectomy vs Septoplasty

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Abstract: **Background:** Deviated nasal septum results in nasal obstruction. Many surgical procedures are available in correcting the disorder. It is a well-known fact that such problems are treated using septoplasty. Along with these conditions, the patients also experience turbinate hypertrophy, treated by septoplasty plus turbinectomy. Both treatment procedures are advocated in patients depending on the medical history of patients and physicians' clinical judgments. Therefore, this paper compares the outcomes of the patients undergoing these two treatment procedures. The paper aims to judge which method is more useful in the context of health outcomes. **Method:** Thirty patients were divided into two groups. Group A was the one that underwent septoplasty only based on the inclusion and exclusion criteria. Group B included 15 people who underwent septoplasty along with turbinectomy. All medical precautions were taken during surgery. The preoperative and post-operative NOSE scores were compared along with the calculation of their P-value. **Result:** P-value seems to be less than 0.05 in all the cases. Along with this, the post-operative examination reveals that there was no patient with both side blockages after turbinectomy was performed along with septoplasty. Septoplasty alone led to 3 cases of one-side blockage and five patients with two-side blockage. Compared to these findings, the group B patients were only 2 in number who reported one side blockage only. **Conclusion:** It is concluded in the paper that septoplasty with turbinectomy is a better treatment option than septoplasty alone in patients having nasal problems.

Keywords: septoplasty, septoplasty with turbinectomy, patients, study

1. Introduction

Nasal blockage or obstruction is one of the common manifestations in otorhinolaryngo logical clinics, which may be due to a wide array of reasons. Septoplasty is one of the most common treatment plans for such patients. Septoplasty with turbinectomy is claimed to be the better treatment for patients suffering from turbinate hypertrophy (Koval et al., 2020; Philip et al., 2017). Keeping this in mind, this study compares pre-operative and post-operative symptoms in patients who underwent only septoplasty or went through turbinectomy as well. The severity of the symptoms may range from simple deviation of the nasal septum to difficulty in breathing.

2. Method

The total number of patients who participated in the study was 30. The patients reported to the ENT department of the hospital with one or more symptoms associated with NOSE (Nasal Obstruction System Evaluation Score). They were apprised of the relevant details of the study. The informed consent was taken from patients, followed by a calculation of the NOSE score. It led to the assessment of the patient's symptoms based on five categories- nasal blockage or

obstruction, nasal congestion or stuffiness, sleep difficulty, unable to breathe due to no passage of

air during exercise and other strenuous activities, and trouble breathing during everyday situations (Karatzanis et al., 2009; Tian et al., 2021). The inclusion criteria for the study were - deviated nasal septum or turbinate hypertrophy who underwent 2 months of medical therapy, with no history of previous nasal surgeries, patients between the age of 18-65 years, and no respiratory tract infection. The study's exclusion criteria were - age less than 18 years, previous septal surgery, DNS with allergic rhinitis, pregnant women, sinonasal polyposis, sinonasal tumors, and those medically unfit for surgeries.

The patients were divided into two categories (each category having 15 patients)- the one who needed to go through turbinectomy and septoplasty and another who went through septoplasty alone. Written and Informed consent was taken by the patients for the study. A detailed clinical examination and diagnostic nasal endoscopy were done. X-ray of paranasal sinuses was performed for every patient and routine blood and urine investigations were done for anesthetic fitness. The NOSE score calculated before surgical interventions are as follows:

Table 1: Preoperative NOSE Score comparison between group A and B patients

NOSE Conditions	Number of patients	NOSE Score for group A undergoing septoplasty alone	NOSE Score for group undergoing septoplasty and turbinectomy
Nasal Blockage or Obstruction	16	4.13	3.13
Nasal Congestion or stuffiness	3	4.32	3.12
Trouble Sleeping	4	3.37	3.21
Unable to get air through the nose during exercise or exertion	22	3.89	2.97
Trouble breathing through the nose	26	4.12	2.97

The nasal surgeries were performed on patients of both groups. The procedure of the surgery included meticulous planning and details. The procedural steps are as follows:

- Administering local or general anesthesia based on the patient’s medical condition.
- Infiltration of the septum with 2% Lignocaine with adrenaline, 1: 100,000
- Making incisions and elevating flaps
- Removing bony septum or any other cause of the symptom

The procedure for both groups was the same until this step, after which the patients undergoing turbinectomy along with septoplasty underwent resection of turbinate mucosa and bone (Bischoff et al., 2020; Tian et al., 2021). Nasal packing was done for 48 hours along with antibiotics, antihistaminics and analgesics. The patients were later discharged. They were asked to report the findings after one week followed by intervals of one month, three months, and six months. The post-operative symptoms were examined and compared in both groups, which are summarized in the tables below:

Table 2: Preoperative and Postoperative NOSE score comparison in group A undergoing septoplasty alone

NOSE symptoms	Pre-operative	Post-operative	P-value	Significance
Nasal Blockage or Obstruction	5.17	2.43	<0.05	Significant
Nasal Congestion or stuffiness	4.68	3.15	<0.05	Significant
Trouble Sleeping	4.98	3.15	<0.05	Significant
Unable to get air through the nose during exercise or exertion	5.16	2.12	<0.05	Significant
Trouble breathing through the nose	4.32	2.18	<0.05	Significant

Table 3: Preoperative and Postoperative NOSE score comparison in group B

NOSE symptoms	Pre-operative	Post-operative	P-value	Significance
Nasal Blockage or Obstruction	4.16	1.8	<0.05	Significant
Nasal Congestion or stuffiness	4.32	1.9	<0.05	Significant
Trouble Sleeping	4.18	1.31	<0.05	Significant
Unable to get air through the nose during exercise or exertion	4.34	2.0	<0.05	Significant
Trouble breathing through the nose	4.32	1.91	<0.05	Significant

The NOSE score was again calculated and then compared with pre-operative findings. The data analysis included the calculation of the p-value for both groups A and B for all the five NOSE score conditions. The results of the research have been presented in a subsequent section. The method is justified on the pretext of medical research undertaken in controlled settings and surgical procedures performed for the patient for health benefits.

3. Results

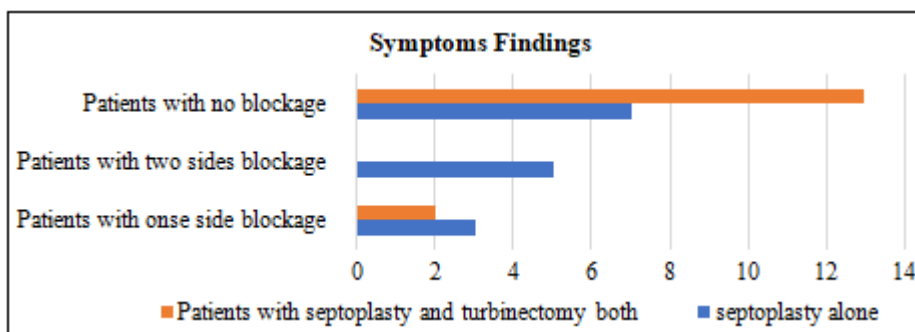


Figure 1: graphical representation of the number of patients having symptoms after treatment in groups A and B

After cumulative result calculation of postoperative symptoms, the septoplasty alone had more patients with nasal symptoms compared to the section on which turbinectomy was also performed along with septoplasty

Post-operative symptoms	Patients with one-side blockage	Patients with two sides blockage	Patients with no blockage
Septoplasty alone	3	5	7
Patients with septoplasty and turbinectomy both	2	0	13

4. Discussion

Septoplasty performed on patients belonging to both groups yielded different results and findings. The post-operative report found that only two patients complained of nasal blockage and other symptoms after septoplasty was performed along with turbinectomy. Compared to eight patients in group A who reported blockage and other symptoms even after the surgical procedure. The cumulative findings include follow-up in the study after one month, three months, and six months. Thus, the findings are similar to the ones reported by other studies. Most research papers conclude that septoplasty with turbinectomy is a better treatment option than septoplasty alone.

Previous authors researched the same topic and found that septoplasty with turbinectomy cures more symptoms than septoplasty alone. They divided the participants into two groups and performed surgical procedures on both (Tavakoli&Klar, 2020). They reported similar findings as this one. Another research was conducted by Karodpati et al. (2019), who reported similar results for a population larger than this study. Another study was by bishop et al. (2021), who reported clinical symptoms after septoplasty and found common ground with the author of this research. Thus, the study is on the same page as the previous findings in the same field.

5. Limitations

The major limitation of the study is that it has a small sample size. The limitation was overcome by carefully vetting patients based on inclusion and exclusion criteria. A diversified range of patients belonging to a different gender, race, color, and economic background was studied. The small size was accepted as a limitation because of the research procedure's ease. Moreover, readers with no arithmetical backgrounds might have found it challenging to understand the study of a large sample. Thus, the study is reliable and valid though the sample is small. It is claimed that no person, animal, or living thing has been harmed in the research. Thus, the benefits of the research outweigh its limitations.

6. Conclusion

The above findings show that septoplasty is a better treatment alternative with turbinectomy instead of Septoplasty alone.

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Conflict of Interest

None

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