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Original Research Article

Evaluation of Factors Affecting the Clinical and Functional Outcomes of Patients Undergoing Endoscopic Septoplasty: A Prospective Observational Study

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Abstract

Background: Deviated nasal septum (DNS) is a common cause of persistent nasal obstruction and impaired nasal breathing. Endoscopic septoplasty provides direct visualization of septal deformities and may improve functional outcomes.

Aim: To evaluate the clinical and functional outcomes of endoscopic septoplasty and identify demographic and clinical factors associated with postoperative improvement.

Materials and Methods: This prospective observational study included 100 patients aged 18–50 years with symptomatic DNS who underwent endoscopic septoplasty at the Department of Otorhinolaryngology. Nasal obstruction was assessed using the Nasal Obstruction Symptom Evaluation (NOSE) scale before surgery and during postoperative follow-up. Data were analyzed using IBM SPSS Statistics version 27.0. Continuous variables were expressed as mean ± SD, categorical variables as frequencies and percentages, and paired comparisons were performed using the paired-samples *t*-test. Associations between clinical factors and postoperative outcome were assessed using the chi-square test or Fisher's exact test. A *p*-value <0.05 was considered statistically significant.

Results: Nasal obstruction was the most common presenting symptom (92.0%), followed by difficulty in breathing (76.0%) and recurrent nasal blockage (54.0%). Mean NOSE scores showed a progressive reduction following surgery, with statistically significant improvement at all postoperative assessments ($p<0.001$). Severe nasal obstruction decreased from 33.0% preoperatively to 2.0% at 6 months, while patients without obstruction increased from 0% to 39.0%. The mean reduction in NOSE score was 35.6 points at 1 month, 45.8 points at 3 months, and 48.6 points at 6 months ($p<0.001$ for all). Overall, 82.0% of patients achieved a successful postoperative outcome. Turbinate hypertrophy ($p=0.021$), allergic rhinitis ($p=0.031$), and other associated nasal conditions ($p=0.035$) were significantly associated with postoperative outcome, whereas age ($p=0.431$), sex ($p=0.934$), and severity of septal deviation ($p=0.073$) were not. Postoperative complications occurred in 27.0% of patients, with nasal crusting (12.0%) being the most common.

Conclusion: Endoscopic septoplasty provides significant improvement in patient-reported nasal obstruction and produces favorable functional outcomes. However, concomitant conditions such as turbinate hypertrophy and allergic rhinitis may adversely affect postoperative symptom improvement.

Keywords: Deviated nasal septum; Endoscopic septoplasty; Nasal obstruction; NOSE score; Turbinate hypertrophy; Allergic rhinitis.

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Introduction

Deviated nasal septum (DNS) is a frequent anatomical abnormality of the nasal cavity and is an important structural contributor to persistent nasal obstruction. While septal deviation may remain clinically silent in some individuals, significant deviations can compromise nasal airflow and result in nasal blockage, impaired nasal breathing, snoring, sleep-related problems,

headache or facial discomfort, epistaxis, and deterioration in health-related quality of life. Alghamdi et al. (2022) noted that the clinical impact of DNS is influenced by the anatomical site and extent of septal deviation as well as by coexisting sinonasal abnormalities [1].

For patients with symptomatic DNS who do not obtain sufficient benefit from conservative management, septoplasty is the established surgical treatment. The fundamental aim of the procedure is to improve nasal airflow through correction of the obstructing septal deformity while maintaining adequate structural integrity of the nasal framework. Evidence from recent randomized studies indicates that surgical correction produces greater patient-reported symptomatic and quality-of-life benefits than continued medical treatment in appropriately selected patients. In the multicentre NAIROS randomized controlled trial, Carrie et al. (2023) demonstrated significantly greater improvement in SNOT-22 scores at 6 months following septoplasty compared with medical management [2]. In a systematic review and meta-analysis of randomized controlled trials including 721 participants, Taha et al. (2025) likewise reported significant improvements in NOSE and SNOT-22 scores after septoplasty compared with non-surgical treatment, particularly at 6- and 12-month assessments [3]. More recently, Abd Elhadi et al. (2026) reported significantly greater improvement in NOSE scores at 3, 6, and 12 months among patients treated surgically, although they emphasized the relatively limited number of high-quality randomized trials currently available [4].

Assessment of septoplasty outcomes increasingly relies on standardized patient-reported measures in addition to clinical and anatomical evaluation. The Nasal Obstruction Symptom Evaluation (NOSE) scale, developed and validated by Stewart et al. (2004), is a brief, reliable, and responsive disease-specific instrument for quantifying the severity of nasal obstruction [5]. Its widespread adoption has enabled more consistent assessment of symptomatic outcomes following septal surgery. Despite the generally favorable results of septoplasty, the degree of postoperative improvement varies considerably between individuals. This variability may be related to demographic characteristics, baseline symptom severity, anatomical features, and concomitant nasal disorders. Data from the Swedish National Septoplasty Register involving 888 patients showed that the preoperative severity of nasal obstruction was an important prognostic factor, with patients experiencing more severe baseline obstruction demonstrating greater postoperative improvement. Pedersen et al. (2019) also identified age and preoperative activity limitation as factors associated with postoperative outcomes [6]. These observations highlight the potential value of identifying preoperative characteristics that can help predict the likely benefit of septal surgery.

Aim: To evaluate the clinical and functional outcome of endoscopic septoplasty and identify demographic and clinical factors associated with postoperative improvement in patients with symptomatic deviated nasal septum.

Objectives

- To assess the improvement in nasal obstruction following endoscopic septoplasty using the Nasal Obstruction Symptom Evaluation (NOSE) score.
- To compare preoperative and postoperative NOSE scores at 1, 3, and 6 months after surgery.
- To assess the change in severity of nasal obstruction following endoscopic septoplasty.
- To determine the association of age, sex, severity of septal deviation, turbinate hypertrophy, allergic rhinitis, and other associated nasal conditions with postoperative outcome.
- To assess the frequency and pattern of postoperative complications following endoscopic septoplasty.

Materials & Methods

Study Design: This prospective observational study was conducted to evaluate the outcomes of patients undergoing endoscopic septoplasty and to identify demographic and clinical factors associated with postoperative symptomatic improvement. A total of 100 consecutive eligible patients were included and followed for 6 weeks after surgery.

Study Population: The study included patients aged 18–50 years with clinically symptomatic deviated nasal septum (DNS) who presented to the Department of Otorhinolaryngology (ENT), and were planned for endoscopic septoplasty.

Study Place: The present study was conducted in the Department of Otorhinolaryngology, Nalanda Medical College & Hospital, Patna, Bihar, India.

Study Period: The study was carried out over a period of 12 months, from February 2025 to January 2026.

Ethical Considerations: The study protocol was approved by the Institutional Ethics Committee. Written informed consent was obtained from all participants before enrolment. Patient confidentiality was maintained throughout the study, and the study was conducted in accordance with the principles of the Declaration of Helsinki.

Inclusion Criteria: Patients fulfilling the following criteria were included:

- Age 18–50 years.
- Clinically diagnosed symptomatic deviated nasal septum.
- Patients planned for endoscopic septoplasty.
- Patients willing to participate and provide written informed consent.
- Patients willing and able to complete the scheduled postoperative follow-up.

Exclusion Criteria

Patients were excluded if they had:

- Pregnancy or lactation.
- Active pulmonary tuberculosis.
- Immunosuppression.
- Previous nasal or septal surgery.
- Medical contraindications or unfitness for surgery.
- Refusal to provide informed consent.
- Loss to follow-up.

Methodology: All eligible patients underwent a detailed clinical evaluation, including history, anterior rhinoscopy and nasal endoscopic examination. Radiological evaluation was performed when clinically indicated to confirm the diagnosis and assess the anatomical characteristics of DNS. Baseline demographic and clinical characteristics were recorded using a standardized case record form. Preoperative nasal obstruction was assessed using the Nasal Obstruction Symptom Evaluation (NOSE) scale. Following completion of the preoperative assessment, patients underwent endoscopic septoplasty according to the institutional surgical protocol.

Patients were followed weekly for the first 2 weeks and subsequently at 15-day intervals up to 6 weeks. Postoperative clinical assessment and documentation of complications were performed during follow-up. The NOSE score was reassessed at 6 weeks and compared with the preoperative score.

Surgical Procedure: Endoscopic septoplasty was performed under appropriate anaesthesia using a standard endoscopic technique. After adequate nasal preparation and visualization of the deviated septum, a hemitransfixion or Killian-type incision was made according to the site and extent of deviation. The mucoperichondrial and mucoperiosteal flaps were carefully elevated under endoscopic visualization.

Deviated portions of the septal cartilage and/or bone causing nasal obstruction were selectively removed or corrected while preserving an adequate dorsal and caudal septal support. The septum was repositioned appropriately, haemostasis was achieved, and the incision was closed according to the surgeon's standard protocol. Nasal packing or splinting was used when clinically indicated.

Investigations: Routine preoperative investigations were performed according to institutional surgical protocols and included complete blood count, blood glucose, renal and liver function tests, coagulation profile, viral screening, and other investigations as clinically indicated. Nasal endoscopy and radiological assessment were performed when required for evaluation of septal deviation and associated sinonasal pathology.

NOSE Score Assessment: Nasal obstruction was assessed using the validated NOSE scale, which consists of five items:

- Nasal congestion or stuffiness.
- Nasal blockage or obstruction.
- Difficulty breathing through the nose.
- Trouble sleeping.
- Difficulty getting sufficient air during exercise or exertion.

Each item was scored from 0 (not a problem) to 4 (severe problem). The five item scores were summed and multiplied by 5 to obtain a total score ranging from 0 to 100, with higher scores indicating greater severity of nasal obstruction.

The NOSE score was categorized as follows:

NOSE score	Severity
0	No symptoms
5–25	Mild
30–50	Moderate
55–75	Severe
80–100	Extreme

Outcome Measures

Primary Outcome: The primary outcome was the change in NOSE score from the preoperative assessment to 6 weeks after endoscopic septoplasty.

Secondary Outcomes: Secondary outcomes included:

- Change in severity of nasal obstruction after surgery.
- Proportion of patients achieving successful symptomatic improvement.

- Association of age, sex, severity of septal deviation, turbinate hypertrophy, allergic rhinitis, and other associated nasal conditions with postoperative outcome.
- Frequency and type of postoperative complications.

For outcome analysis, a ≥50% reduction in the NOSE score from baseline at 6 weeks was considered a successful symptomatic outcome, while a reduction of <50% was considered unsatisfactory.

Statistical Analysis: Data were collected using standardized case record forms, entered into Microsoft Excel for Microsoft 365, and subsequently analyzed using IBM SPSS Statistics version 27.0 (IBM Corp., Armonk, NY, USA**)**.

Continuous variables were expressed as mean ± standard deviation (SD), and categorical variables were summarized as frequencies and percentages. The normality of continuous variables was assessed before selecting parametric tests.

Preoperative and postoperative NOSE scores were compared using the paired-samples t-test. Associations between categorical variables, including demographic/clinical factors and postoperative outcome, were assessed using the chi-square test or Fisher's exact test, as appropriate. Where appropriate, comparison of NOSE scores across age groups was performed using one-way analysis of variance (ANOVA).

A two-tailed p-value <0.05 was considered statistically significant, and p<0.001 was considered highly statistically significant.

Results

Table 1: Distribution of Patients According to Presenting Symptoms (n = 100)

Presenting symptom	Frequency (n)	Percentage (%)
Nasal obstruction	92	92.0
Difficulty in breathing	76	76.0
Headache/facial pain	48	48.0
Nasal discharge	36	36.0
Postnasal drip	28	28.0
Sneezing	31	31.0
Reduced sense of smell	24	24.0
Snoring	38	38.0
Recurrent nasal blockage	54	54.0
Epistaxis	11	11.0

Table 1 show that nasal obstruction was the most common presenting symptom, reported by 92 (92.0%) patients, followed by difficulty in breathing in 76 (76.0%) and recurrent nasal blockage in 54 (54.0%) patients. Headache/facial pain was reported by 48 (48.0%), while nasal discharge and snoring were reported by 36 (36.0%) and 38 (38.0%**)**, respectively. Epistaxis was the least common symptom, observed in 11 (11.0%) patients.

Table 2: Comparison of Preoperative and Postoperative NOSE Scores According to Age Group (n = 100)

Age group (years)	n	Preoperative NOSE score, Mean ± SD	1-month postoperative NOSE score, Mean ± SD	3-month postoperative NOSE score, Mean ± SD	6-month postoperative NOSE score, Mean ± SD	p-value*
18–30	33	63.2 ± 12.8	27.1 ± 11.6	17.8 ± 9.6	15.2 ± 8.7	<0.001
31–40	37	65.7 ± 13.1	29.8 ± 12.3	19.4 ± 10.2	16.7 ± 9.4	<0.001
41–50	30	67.5 ± 13.8	32.7 ± 13.4	22.0 ± 11.8	19.0 ± 11.0	<0.001

Table 2 demonstrate that a progressive reduction in the mean NOSE score was observed after endoscopic septoplasty across all age groups. In patients aged 18–30 years, the mean score decreased from 63.2 ± 12.8 preoperatively to 15.2 ± 8.7 at 6 months. Similarly, scores decreased from 65.7 ± 13.1 to 16.7 ± 9.4 in the 31–40-year group and from 67.5 ± 13.8 to 19.0 ± 11.0 in the 41–50-year group. The reduction was statistically highly significant in all groups (p<0.001).

Table 3: Distribution of Patients According to Severity of Nasal Obstruction Before and After Endoscopic Septoplasty (n= 100)

Severity of nasal obstruction	Preoperative n (%)	1-month postoperative n (%)	3-month postoperative n (%)	6-month postoperative n (%)
None	0 (0.0)	18 (18.0)	31 (31.0)	39 (39.0)
Mild	18 (18.0)	43 (43.0)	45 (45.0)	42 (42.0)
Moderate	49 (49.0)	31 (31.0)	21 (21.0)	17 (17.0)
Severe	33 (33.0)	8 (8.0)	3 (3.0)	2 (2.0)
Total	100 (100.0)	100 (100.0)	100 (100.0)	100 (100.0)

Table 3 present there was a marked improvement in nasal obstruction following surgery. The proportion of patients with severe obstruction decreased from 33 (33.0%) preoperatively to 2 (2.0%) at 6 months, while those with no obstruction increased from 0 (0.0%) to 39 (39.0%). The proportion with moderate obstruction also decreased from 49.0% to 17.0%**,** indicating substantial postoperative symptomatic improvement.

Table 4: Paired Comparison of Preoperative and Postoperative NOSE Scores (n = 100)

Comparison	Mean difference	95% CI	t-value	p-value
Preoperative vs. 1-month postoperative	35.6	32.9–38.3	25.74	<0.001**
Preoperative vs. 3-month postoperative	45.8	42.9–48.7	31.52	<0.001**
Preoperative vs. 6-month postoperative	48.6	45.7–51.5	33.68	<0.001**

CI = confidence interval.; Paired-samples t-test.; ** Statistically highly significant at p<0.001

Table 4 present the mean NOSE score showed a significant reduction at each postoperative assessment. The mean reduction was 35.6 points at 1 month**,** 45.8 points at 3 months**,** and 48.6 points at 6 months compared with the preoperative score. All comparisons were statistically highly significant (p<0.001), demonstrating significant improvement in nasal obstruction following endoscopic septoplasty.

Table 5: Association of demographic and clinical factors with postoperative outcome at 6 months (n=100)

Factor	Category	Successful outcome n (%)	Unsatisfactory outcome n (%)	Total n	p-value
Age (years)	18–30	29 (87.9)	4 (12.1)	33	0.431
	31–40	31 (83.8)	6 (16.2)	37	
	41–50	22 (73.3)	8 (26.7)	30	
Sex	Male	51 (82.3)	11 (17.7)	62	0.934
	Female	31 (81.6)	7 (18.4)	38	
Severity of septal deviation	Mild	25 (92.6)	2 (7.4)	27	0.073
	Moderate	43 (84.3)	8 (15.7)	51	
	Severe	14 (63.6)	8 (36.4)	22	
Turbinate hypertrophy	Absent	52 (89.7)	6 (10.3)	58	0.021
	Present	30 (71.4)	12 (28.6)	42	
Allergic rhinitis	Absent	66 (86.8)	10 (13.2)	76	0.031
	Present	16 (66.7)	8 (33.3)	24	
Other associated nasal conditions	Absent	72 (85.7)	12 (14.3)	84	0.035
	Present	10 (62.5)	6 (37.5)	16	

Table 5 and figure 1, show that at 6 months postoperatively, age was not significantly associated with postoperative outcome (p = 0.431), although the success rate decreased from 87.9% in patients aged 18–30 years to 73.3% in those aged 41–50 years. Similarly, sex showed no significant association (p = 0.934), with comparable success rates among males (82.3%) and females (81.6%). Severity of septal deviation also showed a non-significant trend toward poorer outcomes with increasing severity (p = 0.073), with success rates of 92.6%, 84.3%, and 63.6% for mild, moderate, and severe deviation, respectively.

In contrast, turbinate hypertrophy was significantly associated with postoperative outcome (p = 0.021), with lower success among patients with hypertrophy than those without (71.4% vs. 89.7%). Allergic rhinitis was also significantly associated with outcome (p = 0.031), with success rates of 66.7% in affected patients compared with 86.8% in those without allergic rhinitis. Similarly, other associated nasal conditions were significantly related to poorer outcomes (p = 0.035), with successful outcomes in 62.5% of affected patients compared with 85.7% of those without such conditions

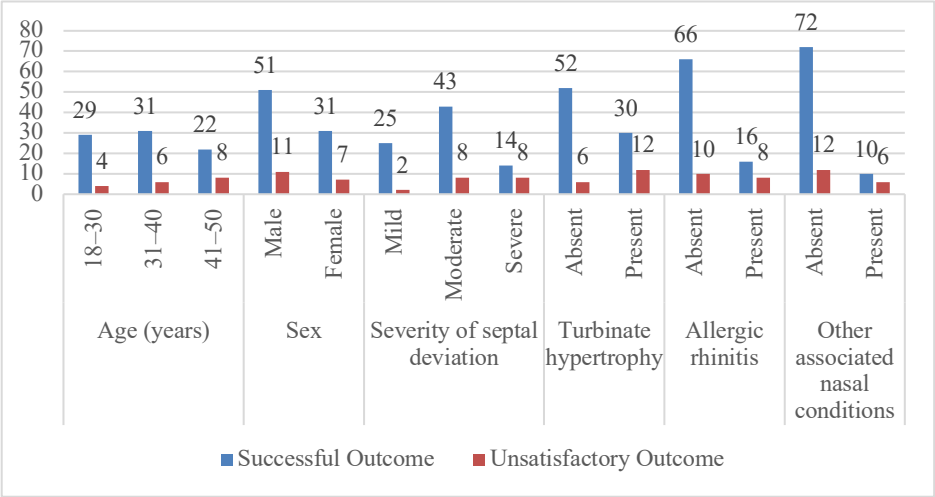

Figure 1: Association of Demographic and Clinical Factors with Postoperative Outcome at 6 Months (n = 100)

Table 6: Distribution of postoperative complications following endoscopic septoplasty (n=100)

Postoperative complication	Frequency (n)	Percentage (%)
Nasal crusting	12	12.0
Transient nasal bleeding	8	8.0
Nasal pain/discomfort	7	7.0
Synechiae	4	4.0
Septal hematoma	2	2.0
Persistent nasal obstruction	5	5.0
Septal perforation	1	1.0
Infection	2	2.0
Any complication	27	27.0
No complication	73	73.0

Table 6 demonstrate that postoperative complications were reported in 27 (27.0%) patients, whereas 73 (73.0%) had no complications. Nasal crusting was the most common complication, occurring in 12 (12.0%) patients, followed by transient nasal bleeding in 8 (8.0%) and nasal pain/discomfort in 7 (7.0%). Synechiae, septal hematoma, infection, persistent nasal obstruction, and septal perforation were less frequently observed. Septal perforation was the least common complication (1.0%).

Discussion

In the present study, nasal obstruction was the predominant presenting symptom (92.0%), followed by difficulty in breathing (76.0%) and recurrent nasal blockage (54.0%). Headache/facial pain, snoring, nasal discharge, sneezing, postnasal drip, reduced sense of smell, and epistaxis were reported less frequently. This pattern reflects the major functional consequence of deviated nasal septum, namely impaired nasal airflow. These findings are comparable with those of Ahmed et al. (2023), who identified nasal obstruction as the principal complaint among patients undergoing septoplasty, along with associated symptoms such as headache, snoring, nasal secretion, and olfactory disturbance. They also reported significant postoperative symptomatic improvement following endoscopic-assisted septoplasty [7]. Similarly, Alessandri-Bonetti et al. (2023) demonstrated a substantial preoperative nasal symptom burden among patients undergoing septoplasty [8]. These observations support nasal obstruction as the principal clinical indication for septal surgery.

A progressive reduction in NOSE scores was observed across all age groups following endoscopic septoplasty. The improvement was statistically highly significant in each group ($p<0.001$), indicating consistent symptomatic benefit irrespective of age within the studied population. The findings are consistent with Alessandri-Bonetti et al. (2023), who reported substantial improvement in NOSE scores following septoplasty [8]. More recently, Saxena et al. (2025) reported significant improvement in NOSE and SNOT-22 scores at successive postoperative assessments, with favorable outcomes following endoscopic septoplasty [9]. The present findings therefore support the effectiveness of endoscopic septoplasty across different adult age groups.

A clear postoperative shift toward lower grades of nasal obstruction was observed. The proportion of patients with severe obstruction decreased from 33.0% preoperatively to 2.0% at 6 months, while those without obstruction increased from 0% to 39.0%. Moderate obstruction also declined from 49.0% to 17.0%, whereas mild obstruction increased from 18.0% to 42.0%. This marked improvement is consistent with Alessandri-Bonetti et al. (2023), who reported substantial improvement in patient-reported nasal obstruction after septoplasty [8]. In a large registry-based study, Sunnergren et al. (2025) reported favorable postoperative outcomes in a substantial proportion of patients, although individual responses varied [10]. Persistent postoperative obstruction may be related to residual septal deformity, turbinate hypertrophy, allergic rhinitis, or other associated sinonasal conditions. The paired analysis demonstrated a highly significant reduction in NOSE scores at 1, 3, and 6 months ($p<0.001$ for all comparisons). The magnitude of improvement increased progressively during follow-up, indicating continued symptomatic recovery after the immediate postoperative period. These findings are comparable with Alessandri-Bonetti et al. (2023), who demonstrated substantial improvement in NOSE scores following septoplasty. García-Chabur et al. (2023) likewise reported significant postoperative improvement [11].

The severity of septal deviation also showed a numerical trend toward poorer outcomes with increasing severity; however, this association was not statistically significant ($p=0.073$). Complex or extensive septal deformities may nevertheless be more difficult to correct completely and could contribute to residual symptoms.

In contrast, turbinate hypertrophy was significantly associated with postoperative outcome ($p=0.021$). Patients with turbinate hypertrophy had less favorable symptomatic improvement, suggesting that nasal obstruction may have multiple anatomical components. García-Chabur et al. (2023) similarly demonstrated substantial improvement following combined septoplasty and turbinoplasty [11].

Allergic rhinitis was also significantly associated with outcome ($p=0.031$). The presence of persistent mucosal inflammation may contribute to residual nasal obstruction despite successful correction of septal deviation. Gillman et al. (2019) demonstrated that patients with allergic rhinitis can still obtain significant benefit from septoplasty with turbinate reduction, although management of the underlying inflammatory disease remains important [12].

Postoperative complications were reported in 27.0% of patients, while 73.0% had no documented complications. Nasal crusting was the most frequent complication (12.0%), followed by transient nasal bleeding (8.0%) and nasal pain or discomfort (7.0%). Synechiae occurred in 4.0%, persistent nasal obstruction in 5.0%, while septal hematoma and infection were each reported in 2.0%. Septal perforation was uncommon (1.0%). These findings are broadly consistent with Ahmed et al. (2023), who reported a favorable safety profile and fewer complications with endoscopic-assisted septoplasty [7]. Besharah et al. (2023) supports the use of endoscopic septoplasty as an effective surgical approach, with advantages in postoperative symptom relief and reduction of several perioperative complications compared with conventional septoplasty [13]. The low incidence of septal perforation in the present study is comparable with the findings of Shin and Jang (2023), in their analysis of 1,506 consecutive septoplasty cases, reported that postoperative complications were generally uncommon and were influenced by patient-related and surgical factors. Their findings highlighted the importance of meticulous surgical technique and careful perioperative management in minimizing complications following septoplasty. These observations support the present findings, in which endoscopic septoplasty demonstrated a favorable safety profile with relatively few serious postoperative complications [14].

Limitations of the Study

- The study included a relatively small sample size of 100 patients, which may limit the generalizability of the findings.
- The study was conducted over a limited follow-up period of 6 months; therefore, long-term symptomatic outcomes and late complications could not be assessed.
- The study did not include a comparison group undergoing conventional septoplasty or non-surgical management.
- Assessment of postoperative improvement was primarily based on the NOSE score, which is a patient-reported measure and may be influenced by subjective factors.
- Potential confounding factors, including the severity of allergic rhinitis, environmental exposures, and variations in postoperative care, may have influenced the observed outcomes.
- Multicentre validation with a larger sample and longer follow-up would be required to confirm the observed associations.

Conclusion

Authors found that endoscopic septoplasty resulted in significant and sustained improvement in nasal obstruction and patient-reported nasal symptoms. Postoperative outcomes were generally favorable, with improvement observed across all age groups.

Demographic factors showed no significant association with outcome, whereas associated nasal conditions, particularly turbinate hypertrophy and allergic rhinitis, were associated with less favorable postoperative results. The procedure was associated with a low frequency of serious complications, supporting endoscopic septoplasty as an effective and generally safe treatment for symptomatic nasal septal deviation.

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Author Contributions

AS: Conceptualization, study design, data collection, clinical evaluation, and manuscript preparation.

KRR: Data collection, patient follow-up, clinical assessment, and literature review.

SK: Study supervision, methodology, data analysis, interpretation of findings, and critical revision of the manuscript.

SS: Overall supervision, clinical guidance, methodological review, and critical revision of the manuscript.

Note: I have used the initials AS, KRR, SK, and SS corresponding to the four listed authors.

Conflict of Interest: The authors declare that there is no conflict of interest.

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