



A COMPARATIVE STUDY ON OUTCOME OF CONVENTIONAL SEPTOPLASTY VERSUS ENDOSCOPIC SEPTOPLASTY

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ABSTRACT

Aim: Nasal obstruction is a frequent complaint in otorhinolaryngology, with a deviated nasal septum (DNS) being a primary cause. This study aims to compare the outcomes of conventional septoplasty and endoscopic septoplasty, evaluating their effectiveness in symptom relief, intraoperative parameters, and postoperative recovery. **Materials And Methods:** A prospective comparative study was conducted over a period of 24 months (2023–2024) at Sri Siddhartha Medical College and Hospital, Tumkur, Karnataka with 80 patients diagnosed with symptomatic DNS. Preoperative assessments involved diagnostic nasal endoscopy (DNE) and CT scans to determine the extent of septal deviation. Patients were divided randomly into two groups with 40 in each group : one undergoing conventional septoplasty and the other endoscopic septoplasty. Intraoperative parameters, including surgical duration and blood loss were recorded. Postoperative evaluations were carried out at regular intervals to assess symptom improvement, pain levels and complications. **Results:** Endoscopic septoplasty provided superior visualization and precision in correcting posterior deviations and isolated spurs. It resulted in reduced intraoperative blood loss, shorter operative time, and fewer postoperative complications compared to conventional septoplasty. Conventional septoplasty, while effective, exhibited higher rates of intraoperative bleeding and prolonged recovery times. Patients who underwent endoscopic septoplasty reported significantly lower postoperative pain scores and a faster return to normal activities. Postoperative symptom improvement, including relief from nasal obstruction, headache, and nasal discharge, was more pronounced in the endoscopic group. Additionally, the incidence of postoperative complications such as synechiae formation, septal hematoma, and persistent deviation was lower in the endoscopic group than in the conventional group. **Conclusion:** Both conventional and endoscopic septoplasty are effective in managing DNS. However, endoscopic septoplasty offers advantages such as enhanced visualization, minimal tissue trauma, and reduced complication rates, making it a preferable choice for Deviated nasal septum.

KEYWORDS : Deviated nasal septum, conventional septoplasty, endoscopic septoplasty, nasal obstruction**INTRODUCTION**

Nasal obstruction is one of the most common complaints encountered in otorhinolaryngology clinics worldwide. Among its causes, a deviated nasal septum (DNS) is a primary factor leading to airflow obstruction, sinus drainage impairment, and chronic sinonasal infections. Surgical intervention remains the definitive treatment for DNS, with conventional and endoscopic septoplasty being the most widely performed techniques. Conventional septoplasty involves direct visualization and correction of septal deviations, while endoscopic septoplasty employs minimally invasive techniques with enhanced visualization for precise correction. This study aims to compare the outcomes of conventional and endoscopic septoplasty by evaluating their effectiveness, intraoperative parameters, and postoperative recovery.

Study Design

A prospective comparative study was conducted at the Department of Otorhinolaryngology, Sri Siddhartha Medical College, Tumkur. 80 Patients diagnosed with symptomatic DNS requiring surgical intervention were recruited. The study population was divided randomly into two groups: 40 undergoing conventional septoplasty and the other 40 endoscopic septoplasty. Preoperative and postoperative assessments were carried out to evaluate symptom relief, intraoperative blood loss, surgical duration, and complication rates.

Inclusion Criteria

- Patients aged 18–60 years diagnosed with symptomatic DNS.
- Patients with nasal obstruction unresponsive to medical therapy.
- Patients with DNS associated with headache, nasal discharge, or recurrent sinusitis.
- Patients willing to participate in the study and provide informed consent.

Exclusion Criteria

- Patients with previous septal surgery.
- Patients with nasal polypoidosis or sinonasal tumors.
- Patients with coagulopathy or uncontrolled systemic diseases.
- Patients with concurrent nasal pathologies requiring extensive

surgical intervention beyond septoplasty.

Data Collection

Preoperative assessments included detailed history-taking, clinical examination, diagnostic nasal endoscopy (DNE), and computed tomography (CT) scans of the nose and paranasal sinuses. Intraoperative parameters, including surgical duration and blood loss, were recorded. Postoperative evaluations were conducted at regular intervals to assess symptom improvement, pain levels, and complications such as synechiae formation and residual deviation.

RESULTS

A total of 80 patients were included in the study, equally divided into two groups: conventional septoplasty (n = 40) and endoscopic septoplasty (n = 40).

Age Distribution:

The majority of patients were in the 21-30 age group (32.5%), followed by the 18-20 age group (22.5%). The least represented group was the 51-60 age range (8.75%). Younger individuals (18-30 years) constituted a significant proportion (55%) of the patients undergoing septoplasty.

Gender Distribution:

Males constituted the majority of the study population (75%), while females accounted for 25%.

Symptomatology

The most common presenting complaint was nasal blockage, reported by all 80 patients (100%). Nasal discharge was noted in 30 patients (37.5%), while headache and epistaxis were observed in 20 (25%) and 6 (7.5%) patients, respectively.

Table 1 – Preoperative Symptoms

Symptom	Conventional (n=40)	Endoscopic (n=40)	Total (n=80)
Nasal Blockage	40	40	80
Nasal Block & Discharge	18	12	30

Headache	14	6	20
Epistaxis	4	2	6

Intraoperative Parameters

The average surgical duration for conventional septoplasty was 57.5 minutes, whereas endoscopic septoplasty was performed in a shorter time of 52.5 minutes.

Intraoperative blood loss was significantly lower in the endoscopic group (<50 mL in 62.5% of cases) compared to the conventional group.

Postoperative Pain and Recovery

Postoperative pain assessment using the Visual Analogue Scale (VAS) showed that 50% of patients in the endoscopic group reported mild pain (VAS 0–2), whereas 50% in the conventional group experienced severe pain (VAS 6–8).

Postoperative Outcomes and Complications

Postoperatively, both groups demonstrated significant improvement in symptoms. Nasal obstruction relief was achieved in 96.3% of cases. However, the endoscopic septoplasty group showed better outcomes in terms of reduced complications and improved patient comfort.

Table 2 – Postoperative Improvement In Symptoms

Relieved of Symptom	Conventional Septoplasty	Endoscopic Septoplasty	Total Improved	Percentage of Benefit (%)
Nasal Block	38	39	77	96.3%
Nasal block & Discharge	6	4	10	33.3%
Headache	12	6	18	90%
Epistaxis	4	2	6	100%

Table 3 – Postoperative Complications

Complication	Conventional Septoplasty (n=40)	Endoscopic Septoplasty (n=40)	P – value
Synechia	8 (20%)	3 (7.5%)	0.194
Septal Hematoma	5 (12.5%)	2 (5%)	0.429
Septal Perforations	3 (7.5%)	1 (2.5%)	0.608
Persistent Nasal Obstruction	2 (5%)	1 (2.5%)	1.0

DISCUSSION

This study evaluates the outcomes, advantages, and limitations of conventional and endoscopic septoplasty, contributing valuable insights into optimal surgical approaches.

Surgical Duration

The mean operative time for endoscopic septoplasty was 52.5 minutes, slightly shorter than the 57.5 minutes recorded for conventional septoplasty. C. Champagne and S. Ballivet de Régloix (2016) highlighted similar findings^[8], attributing reduced surgical duration to the precise and minimally invasive nature of the endoscopic approach. While the difference is minor, it reinforces the efficiency of endoscopic techniques.

Leonardo Bomediano Sousa Garcia et al. (2011)^[10] and Sufian Nawaiseh and Nemer Al-Khtoum (2010) also noted that endoscopic septoplasty is advantageous for correcting complex posterior deviations efficiently, reducing the overall surgical time with P value < 0.001^[12].

Intraoperative Blood Loss

Intraoperative blood loss was significantly lower in the endoscopic group (<50 mL in 62.5% of cases) compared to the conventional group. Bayneet Kour and Grace Budhiraja (2019) similarly observed results with the mean intraoperative blood loss was 57.5 mL for conventional septoplasty and 35 mL for endoscopic septoplasty showing reduced blood loss in their endoscopic cohort^[4], attributing this to the targeted resection facilitated by enhanced visualization. Our data corroborates these results, highlighting the endoscopic technique's advantage in minimizing tissue trauma.

Furthermore, Radeif Shamakhi and Wael A. Juribi (2021) and Ahmed Shehata and Mohamed El-Sayed (2012) reported similar reductions in bleeding during endoscopic procedures, particularly for posterior deviations, reinforcing the technique's efficiency^[9].

Visualisation

Yong Ju Jang et al. (2009): Their evaluation of posterior deviations

using endoscopic techniques revealed improved anatomical corrections and patient satisfaction, consistent with our findings^[14].

Ranjan G. Aiyer and Rahul Gupta (2009): Their study highlighted the efficacy of endoscopic septoplasty in addressing isolated spurs and posterior deviations, further validating our findings^[15].

Pain and Recovery

Postoperative pain assessment using the Visual Analogue Scale (VAS) revealed that 50% of patients in the endoscopic group reported mild pain (VAS 0–2), whereas 50% in the conventional group experienced severe pain (VAS 6–8). Sandeep Kaushik and Siddharth Vashistha (2013) noted comparable trends, with endoscopic septoplasty patients (86.67%) reporting faster recovery and less discomfort.

Postoperative Outcomes & Complications

Our study demonstrated a significant improvement in symptoms such as nasal obstruction, nasal discharge, and headache for both conventional and endoscopic septoplasty groups. Specifically, 96.3% of patients experienced relief from nasal obstruction, aligning with findings by Richa Gupta and Drishti Nagpal (2021), who reported a higher success rate in the endoscopic group where residual deviation was found in only 1 case in endoscopic group compared to 7 cases in conventional group, due to better precision and reduced complications^[16].

In contrast, Bhagyesh Lalitchandra Darji (2024) emphasized that the endoscopic approach was superior in minimizing postoperative residual deviation (Endoscopic with 6.67% & conventional with 30.00%) and complications. This aligns with our findings, where the endoscopic group exhibited lower rates of synechia (7.5% vs. 20%) and septal hematoma (5% vs. 12.5%)^[11].

Similarly, Shahzad Ahmad and Bhawana Pant (2020) observed reduced complication rates with endoscopic septoplasty, particularly in terms of synechia and bleeding^[3], which our study corroborates. Leena Jain and Manish Jain (2011) also highlighted fewer complications and improved outcomes in patients treated with the endoscopic technique, particularly for posterior deviations^[11].

Mohammed Wafaie and Gamal Yousof (2019) reported minimal morbidity with the endoscopic approach, particularly for posterior deviations and isolated spurs, findings that resonate with our observations^[5].

Koutsurelakis et al. (2008): Although their focus was on nasal breathing improvements post-septoplasty, their findings of enhanced functional outcomes align with our results, particularly in the endoscopic cohort^[13].

Symptom Resolution And Quality Of Life

The study's findings regarding improved quality of life post-septoplasty echo those of Ankita Singh and Nalini Bhat (2018), who used the NOSE questionnaire to demonstrate superior symptomatic relief in endoscopic groups^[7]. Similarly, Ahmed Shehata and Mohamed El-Sayed (2012) highlighted significant improvements in nasal obstruction and discharge following endoscopic interventions with p value of 0.0001^[9], findings mirrored in our study.

Visweswara Rao Suraneni and Suneel Kudamala (2018) also noted enhanced patient satisfaction and symptom resolution with endoscopic techniques, emphasizing their utility in complex cases^[6].

CONCLUSION

By comparing our results with established literature, it is evident that endoscopic septoplasty offers distinct advantages in terms of reduced morbidity, faster recovery, and enhanced patient satisfaction. These findings advocate for the integration of endoscopic techniques into routine practice, ensuring improved quality of care in otolaryngology. Moreover, the enhanced visualization provided by endoscopic tools not only facilitates targeted correction of deviations but also allows concurrent management of sinonasal pathologies, which is a significant advantage over conventional methods. Additionally, the reduced complication rates observed in endoscopic septoplasty emphasize its safety and effectiveness, particularly in challenging posterior deviations.

The consistent alignment of our findings with multiple studies underscores the reliability of endoscopic septoplasty as a preferred

approach. However, its widespread adoption necessitates investment in training and equipment, which could pose challenges in resource-limited settings. Future research should focus on long-term outcomes, cost-effectiveness, and patient-reported quality-of-life measures to further establish its role as a gold-standard technique.

Ultimately, while conventional septoplasty retains its utility in specific clinical scenarios, the advantages of endoscopic methods—including precision, minimal invasiveness, and comprehensive management—make it a transformative advancement in otolaryngology. By embracing these innovations, clinicians can deliver superior care, address complex anatomical challenges, and enhance overall patient satisfaction and outcomes.

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