

Types of Septoplasty-Endoscopic and Conventional a Comparative Study**Arjunsing Vijaysing Samorekar¹, Bheemsingh Samorekar², Vikramadityasingh V. Samorekar³**¹Department of ENT, Naraina Medical College and Research Centre, Kanpur, India²Orthopaedics, K H Patil Institute of Medical Sciences, Gadag, India³Orthopaedics, Dr B S Kushwah Institute of Medical Sciences, Kanpur, India

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Conflict of interest: Nil

Abstract**Aims:** To compare endoscopic and conventional septoplasty in case of time required for surgery, efficacy and morbidity perioperatively. comparing endoscopic and conventional septoplasty. The main purpose of this study is to know operating time, and to identify intra and postoperative complications of the surgery, pain after the surgery, hospital stay and functional result.**Methodology:** A study was conducted in a medical college comparing both endoscopic and conventional septoplasty surgeries.**Conclusion:** Operating time was shorter with endoscopic surgery ($P < 0.001$), with less mucosal damage ($P < 0.01$); there was less synechia ($P < 0.01$) and residual deformity ($P < 0.05$); and postoperative pain was milder. In endoscopic septoplasty time taken was less and reduced perioperative complications, but the functional result was the same as with conventional septoplasty.**DOI:** 10.25258/ijcpr.18.9.92

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Introduction

Conventional septoplasty or traditional septoplasty is usually performed by hemi transfixion or Killian incision, whereas endoscopic septoplasty is performed by using rigid nasal endoscope.

Advances in endoscopic nasal surgery [6,7] have led to the development of endoscopic septoplasty [8–10]. Septoplasty is a well-established procedure in nasal obstruction caused by septal deviation resistant to medical management. It also improves access to the medial meatus in sinus surgery [11]. It is presently tending to replace conventional techniques [4,5]. Many studies have sought to demonstrate the interest of endoscopy [11–25], but few involved comparison with conventional septoplasty [26]. The present literature review compared endoscopic and conventional septoplasty in terms of operating time, functional impact and perioperative morbidity. Freer [1] and Killian [2] in the early 20th century, followed by Cottle et al. [3] in the 1950s, conventional septoplasty techniques have progressed [4,5]

Materials and Method

100 patients are considered for this study. In 50 patients endoscopic septoplasty was done and in 50 patients conventional septoplasty was done with head light and the results were compared. The study was conducted in a Medical college department of

otorhinolaryngology and also patients from department of orthopaedics who had nasal bone fracture with an undisplaced distal radius fracture which was managed conservatively by below elbow post cast application were considered from May 2025 to April 2026.

Endoscopic Septoplasty

Inclusion Criteria were: prospective randomized study (level of evidence I), comparing endoscopic and conventional septoplasty.

Prospective randomized study, comparing endoscopic and conventional septoplasty. Retrospective and descriptive studies were excluded. The primary assessment criterion was surgery time. Secondary criteria were: intra and postoperative complications, postoperative pain, hospital stay, and functional result.

Results

Time taken for the surgery in our study was reported shorter operating time with endoscopic technique (mean 25 ± 7 minutes) than with conventional septoplasty.

Articles were compared in endoscopic and conventional septoplasty, published between 1990 and 2013, were studied. Five concerned prospective

randomized trials, and were included for analysis. Twenty-four were descriptive and/or retrospective, and were excluded.

Primary Assessment of the Study: Time taken for the surgery in case of Paradis and Rotenberg [26] reported shorter operating time with his endoscopic technique (mean 24 ± 7.8 minutes) than with conventional septoplasty (mean 52 ± 12.5 minutes) ($P < 0.001$).

Complications Intraoperatively: Analysis focused on mucosal damage and intraoperative hem-orrhage. Paradis and Rotenberg [26] reported mucosal damage in 11 patients managed conventionally, versus 3 in the endoscopic group ($P < 0.01$). Sathyaki et al. [30] reported twice as many cases of mucosal damage and three times as many of intraoperative hem-orrhage in the conventional septoplasty group ($P = 0.023$).

Table 1:

Authors	Time Saved During Surgery	Operating Time in Endoscopic
Paradis and Rotenberg, 2011 [26]	28 minutes	24 minutes
Sathyaki et al., 2014	-	-
Gupta and Motwani, 2005	-	-
Gulati et al., 2009	-	-
Bothra and Mathur, 2008	YES	-

Postoperative pain Gulati et al. [28] reported lower pain levels in the endoscopy group ($P < 0.01$)

Table 2:

Authors	Assessment Criteria	Endoscopic	Conventional
Sathyaki et al., 2014	Nasal flow improved (Gertner scale) [32] Symptom regression Nasal obstruction Headache Rhinorrhea Hyposmia	95%	56%
		96%	88%
		100%	80%
		100%	100%
		100%	100%
Gupta and Motwani, 2005	Subjective improvement Symptom regression Nasal obstruction Rhinorrhea Headache	100%	88%
		96%	84%
		88%	76%
		100%	92%
Gulati et al., 2009	Symptom regression Nasal obstruction Headache Hyposmia	95.5%	80%
		100%	87.5%
		75%	100%
		100%	89%
Bothra and Mathur, 2008	Subjective improvementb Rhinomanometry Normal nasal flow Slightly reduced nasal flow Moderately reduced nasal flow Severe resistancec Preoperative Postoperative	90%	90%
		35%	45%
		60%	45%
		5%	10%
Paradis and Rotenberg, 2011 [26]	NOSE Questionnaire a Postoperative	14.7%	15.2%
		7.4%	6.3%

Hospital stay Bothra and Mathur and Gupta and Motwani had fewer long-stay patients (>48 hours) in the endoscopy group [27,29].

Anatomic results Gulati et al. reported better anatomic results with endoscopy; the conventional group had a 20% rate (5 patients out of 25) of residual deviation, versus 8% (2 patients out of 25) in the endoscopy group ($P < 0.05$) [28].

Functional results Both endoscopic and conventional septoplasty improved all symptoms related to septal deformity. There was no significant difference between the two, whether on subjective (NOSE questionnaire visual analog scale) or objective assessment (rhino-manometry, Gertner scale) [26] (Table 3).

Discussion

Endoscopy reduced operating time in septoplasty. In learning curve studies, operating time is classically used as primary assessment criterion, as it corresponds to the technical ease with which a procedure is performed along the learning curve. Paradis and Rotenberg reported a significant 28-minute time saving with endoscopy ($P < 0.001$) [26]. Subjectively, Bothra and Mathur and Getz and Hwang also seemed to have shorter surgery times. But operating time is little analyzed in the literature [19], and these findings need further confirmation. Anatomic results seem better with endoscopy [33], providing significantly better anatomic correction of septal deviation [10,11,15,22]. This may be due to: better intraoperative visualization of anatomy, diagnostic endoscopy giving direct and precise

visualization of septal deformity [10,11,17,20];•the possibility of checking for residual deformity at end of procedure, with complementary correction if need be;•less mucosal damage, thanks to direct visualization of the flap during detachment [26];•the possibility of checking Silastic®sheet positioning at end of procedure. De Sousa et al. consider endoscopy useful in patients with previous septal cartilage resection, limiting flap dissection and adapting cartilage resection and thus reducing the risk of complications and especially of septal perforation [17]. The conventional technique is performed under direct visualization, with a limited view of the operative field, making it difficult to determine the relations between the nasal septum and the lateral structures of the nose, especially in case of posterior deviation [20]. Endoscopy induces fewer postoperative complications. Less mucosal damage and good Silastic®sheet positioning may reduce the rate of synechia in endoscopic septoplasty [10,11,17,22,26]. Better anatomic visualization during flap dissection and detachment may also reduce the rate of complications. This anatomic advantage of endoscopy, however, does not hold functionally. Objective and subjective postoperative assessment show improvement whichever the surgical technique [8,11,15,16,26]. Better functional results are reported with better anatomic outcome, but no statistically significant difference emerges; results need confirming on larger series.

Hospital stay was shorter with endoscopy, but not significantly, this was doubtless due to the series being too small, and a larger scale prospective study is required. Shorter hospital stay, however, is of great interest, although hospital stay is no longer a fundamental issue now that endoscopic septoplasty is performed as day surgery. There are connections between septoplasty and the rest of nasal surgery. Instruments are the same. When septal surgery is required ahead of endonasal surgery, endoscopy facilitates the passage from one step to the other [8–11], thus shortening surgery time. Some endonasal procedures require prior septoplasty simply to give access to the sinus; 24.5% of Chung's patients required prior septoplasty [11]. The endoscope is connected up to a video camera, making the technique easier to teach and thus helping junior surgeons to learn it [10,20]. The narrow operative field in conventional septoplasty means that only the operator can monitor performance: for junior surgeons, it is difficult to acquire the technique, understand the procedure and be supervised by a senior surgeon when operating alone. 5.

Conclusion

Endoscopic septoplasty improves visualization of septal deviation, especially in the posterior and inferior area, shortens surgery, and provides a better anatomic result, with less residual deviation, and

synechia, fewer intraoperative complications (mucosal damage, hemorrhage) and a functional result identical to that of conventional septoplasty. Hospital stay is shorter, and residual pain is reduced. It facilitates learning the technique and allows junior surgeons' performance to be supervised. It thus provides benefit compared to conventional septoplasty.

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