Acta Scientific Otolaryngology (ISSN: 2582-5550)

Volume 7 Issue 9 September 2025

Research Article

Endoscopic Septoplasty with Inferior Turbinoplasty as Day Case Procedure Among Yemeni Patients

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DOI: 10.31080/ASOL.2025.07.0761

Received: October 05, 2022

Published: August 22, 2025

Abstract

Objective: Endoscopic septoplasty is increasingly performed as day cases worldwide as well as in our practice. Our aim was to identify if our septoplasty patients fulfill the day case criteria and to audit our postoperative complications.

Patients and Methods: A prospective study of all endoscopic septoplasties performed between June 2019 and December 2020. Overnight admission or readmission rate and medical or surgical complications were recorded.

Results: Out of the 60 patients, no one needed overnight admission or readmission. No early or late postoperative complications were recorded apart from one septal perforations (1.7%). The perforation was small, non-symptomatic at posterior septum.

Conclusions: Day case endoscopic septoplasty can be safely performed with no need for overnight admission or readmission in well selected patients.

Keywords: Endoscopic Septoplasty; Septum Perforation; Day Case; Readmission; Rhinology; Otorhinolaryngology; Yemen

Introduction

Endoscopic septoplasty is a fast evolving concept and gaining popularity as it provides a suitable approach to the septal anatomic deformity, allowing a minimally invasive procedure and removal of a small cartilaginous and/or bony deformity. Until the 1960s, sub-mucous septal resection as promoted by Freer and Killian was standard practice. With this a more or less straight septum was obtained in the areas where the septal skeleton was resected. Two connected struts of cartilage were left behind, to maintain the dorsum and the tip and columella in place. However, correction of pathology in the dorsal, caudal, inferior and posterior parts of the septum was not possible. In 1991 Stammberger started the use of endoscopic techniques for the correction of septal deformities while, Giles., *et al*. three years later appraised the role of endoscopic septoplasty as an adjunct to functional endoscopic sinus surgery [1,2]. Park., *et al*. [3] stated that they could visualize the nasal septum under magnification on a video monitor and operate with precision. Hwang., *et al*. [4] indicated that endoscopic septoplasty is helpful in correction of posterior septal deformities, revision cases and as an effective teaching tool.

Day-case surgery is based on operating on patients and aiming to discharge them on the same day. It has been suggested that day-case surgery should be confined to those procedures where less than 3% of patients require admission postoperatively [5].

Literature have displayed variations in the day-surgery septoplasty rate in different parts of the world. In 1998, it was estimated that only 2.2% of all septoplasties were performed as day cases in the United Kingdom (UK) [6]. In 2005, in Italy a 250-bed hospital had 69% of their septoplasties performed as day-case procedures [7]. American statistics for 2006 showed that discharge home was feasible for 93.07% of the 340,405 patients aged between 15 and 64 years undergoing ambulatory septoplasty and/or turbinectomy

(92.9% under general anesthesia) [11]. A more recent report from Portugal revealed that 77% of the septoplasties were undertaken as outpatient procedures [8].

Common complications of conventional septoplasty based on a large group of 5639 patients include excessive bleeding (3.3%), septal perforation (2.3%), hyposmia (> 1 week < 6months) (3.1%), infection (prolonged healing) (3.1%), adhesions (0.3%), tooth/upper lip anesthesia (0.1%) or ocular complications (temporary reduced visual acuity) (0.08%) [9].

To our knowledge no study has been published about endoscopic septoplasty in term of day case in Yemeni situation. The aim of the study was to identify if our septoplasty patients fulfill the day case criteria and to audit postoperative complications that require readmission or overnight stay after endoscopic septoplasty.

Patients and Methods

This is a prospective study conducted in a private clinical setting from June 2019 to December 2020. Patients with nasal septal deviation with or without inferior turbinate hypertrophy confirmed by endoscopy and/or computed tomography and welling for endoscopic surgery were included. A standardized history, examination, hematological and radiological investigations were collected from every patient and a written consent was also obtained. Patients with major systemic co-morbidity, need endoscopic sinus surgery or rhinoplasty were excluded. Ethical approval was obtained from the medical ethics committee of our Department.

Surgical technique

Under general anesthesia the technique included position of the patient, preparation and draping as in conventional septoplasty. Under endoscopic visualization with a 0 degree 4 mm endoscope, topical adrenaline (1:30,000) was applied [24] for decongestion; saline was injected subperichondrially along the septum.

Hemitransfixation incision was made using #15 scalpel on the left side of the septum as in conventional. After partial mucoperichondrial flap elevation the endoscope, which is held in the left hand, was inserted, keeping the tip of the endoscope between the mucoperichondrial flap and the septal cartilage (Figure 1). Flap elevation was then completed up to the required point of mucoperiostial elevation. The contralateral side flap was elevated similarly when needed. The inferior strip and the deviated septal cartilage and bone were removed by forceps under endoscope after separation from cephalic connections. Adequacy of the surgical correction was assessed by returning the mucosal flaps to the midline and inspecting the nasal airway bilaterally while palpating areas of residual deviation. At the anterior nasal spine, the subluxated cartilage was carefully trimmed and repositioned over the crest and sutured by figure of 8 suture to the anterior nasal spine periosteum to stabilize septum at midline and prevent supra-tip deformity. The mucosa was closed at the incision line using two absorbable transmucosal sutures. The turbinates were either lateralized or trimmed at the posterior end when hypertrophied. Silastic splint and nasal packs soaked with antibiotic ointment were applied. Post-operative treatment included antibiotics for a week, along with analgesics and decongestants. Saline nasal douching was advised for a week or two. Patients were discharged on the same day after they started eating with no issue indicating hospital stay. Nasal packs were removed after 48 hrs.in the clinic, whereas splints were removed 7 to 10 days after the surgery. All patients were regularly followed-up in the clinic, and the post-operative complications were recorded. The follow-up was extended until a smooth nasal breathing postoperatively with no remaining crust or exudates found in either nasal cavity.

Statistical analysis

Data was collected and assembled using Microsoft Excel, then analysed using SPSS 26.0 version. Ratios and proportions were calculated for the categorical variables, while frequency, percentage, means and standard deviations (SD) were calculated for the continuous variables.

Results

In this study a total of 60 cases were included with age range 17-45 (mean 26.8 SD 6.3) and equal male: female distribution (means: 26.8 SD 5.3 in males and 26.8 SD 7.26 in females). Their sex distribution among age groups is shown in (Table 1). The age group 21-30 was the most frequent (65%) and the age group 40 or more was the least.

Nasal obstruction was the main presenting symptom with one or more of the following symptoms i.e. headache, nasal discharge, epistaxis, sneezing, post nasal drip and hyposmia as in (Figure 2).

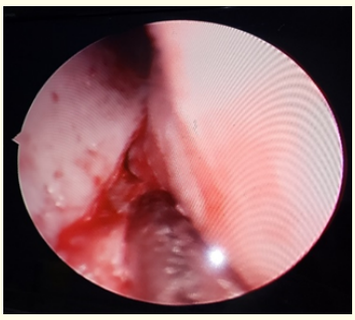

Figure 1: Flap elevation from septal spur

Table 1: Sex distribution among age groups.

Age category	Male	Female	Total
≤ 20	5	4	9
21- 30	18	21	39
31-40	7	3	10
>40	0	2	2
Total	30	30	60

Although intraoperative unilateral mucosal tear has occurred in 6 cases (10%) due to sharp spur or part of its management, only one case (1.7%) has post-operative perforation. The perforation was in the posterior of the septum causing no symptoms.

Endoscopic septoplasty with lateralization of inferior turbinates was done in 7 cases. However, trimming of bulbous posterior end was done in 53 cases.

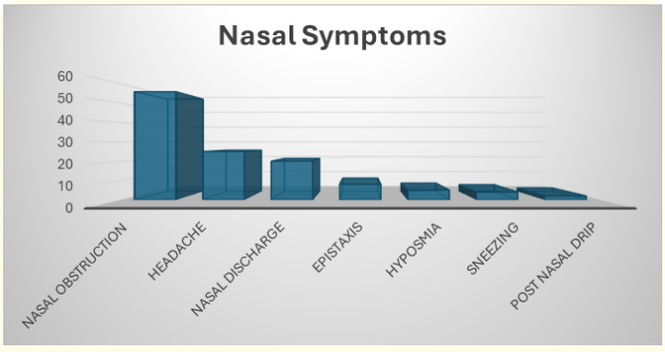

Figure 2: Frequency of nasal symptoms.

In this study no major complications noticed in early or late postoperative period with significant improvement in symptoms after surgery. No case admitted for overnight or readmitted after discharge.

Discussion

Out of the 60 patients with deviated nasal septum, 30 (50%) were males and 30 (50%) were females. The ratio between males and females affected by septal deviation was 1:1, which is similar to the findings noticed in Korea [12] and Europe [13]. However other studies have shown that deviated nasal septum is more common among males than females [14,17,18,20]. In our study, septal deviation was more common in age group 21 to 30 years. Although other studies reported varying percentages with mostly age mean around 30 years old, similar results have been previously reported [1-4,16].

Nasal obstruction was present in most patients with one or more nasal symptoms like headache, nasal discharge, epistaxis, sneezing, post nasal drip or hyposmia. This was in concordance with previous studies where they found nasal obstruction to be the most common complain followed by headache and nasal discharge [20].

In our study, Endoscopic septoplasty with lateralization of inferior turbinates was done in 7 cases. Although, lateralization results in durable and favorable anatomical changes and rhinometric improvement it is not recommended alone for management of sever nasal obstruction [23]. Hence surgical trimming of bulbous posterior end was done in 53 cases.

ul Haq., *et al*. [20], stated that endoscopic septoplasty was found to have a significant advantage in treating patients with septal deviation as it enables accurate identification of the pathology and accomplished with minimal manipulation and resection of pathological area resulting in minimal damage to the tissues, minimal removal of septum and hence precise repair. Another advantage is significantly high rate of improvement of symptoms postoperatively as observed in patients operated by endoscopic technique, compared to the classical technique in comparative studies [19,21] and other studies including this. It can also be considered as an effective learning method where the live broadcast of the procedure on a

monitor can be an opportunity to record and study the anatomy, pathology and surgical technique by surgeons attending the intervention, by specialist doctors or by medical students [1-4,16,20].

Potential complications of septoplasty may include hemorrhage/septal hematoma, septal perforation, adhesions, structural deformity (saddle nose, nasal tip ptosis, angulation of the nasal dorsum), anosmia/hyposmia, infection/septal abscess/toxic shock syndrome, tooth anesthesia, intracranial complications (CSF leak, pneumocephalon), ocular complications, and cardiac/medical complications while the potential complications of turbinoplasty incorporate hemorrhage, infection and atrophic rhinitis [9]. It is found that endoscopic septoplasty has lower rate of complications than conventional one whether early or late complications [16,19-21]. Our results were going in this context where no complication is noticed apart from one case with septal perforation (1.7%). There were also no major complications that require long stay at hospital or readmission.

Septoplasty was officially considered as day-case procedure in 2000 in the UK among other procedures and audited in 2001 where only 25 cases were done in the country including septoplasty. By 2012 day-case septoplasty was 58% in England and 39% in wales, falling short of the official target 75%. Assuming a linear rate of increase in the population rate of day-case septoplasty from 2005 onwards, forecast analysis suggests that the 75% day-case target for septoplasty will be attained in 2016 for England and in 2020 for Wales [21]. However, 93.07% of the 340,405 American patients were undergoing ambulatory septoplasty and/or turbinectomy in 2006 (92.9% under general anesthesia). Only 0.1% of septoplasty patients consulted in Accident and Emergency, for reasons not stated, after surgery [11]. The intended benefits for day case septoplasty are decreased disruption to patient's daily routine, decreased risk of hospital-acquired infections, reduction in mean waiting times, reduced bed occupancy, increased hospital capacity and reduced cost [21].

Conclusion

Endoscopic septoplasty is a reliable alternative to traditional septoplasty with less complications rate and is superior in posterior deviation. Day case endoscopic septoplasty can be safely performed with no need for overnight admission or readmission in well selected patients.

Bibliography

1. Stammberger H. "Functional endoscopic sinus surgery". The Messerklinger Technique, Decker BC. Philadelphia (1991): 430-434.

2. Giles WC., *et al*. "Endoscopic septoplasty". *Laryngoscope* 104.12 (1994): 1507-1509.

3. Park DH., *et al*. "Endoscopic assisted correction of the deviated nose". *Aesthetic Plastic Surgery* 22.8 (1998): 190-195.

4. Hwang PH., *et al*. "Endoscopic septoplasty: indication, technique, and results". *Otolaryngology–Head and Neck Surgery* 120.5 (1999): 678-682.

5. Hogg RP., *et al*. "Admission rates, early readmission rates and patient acceptability of 142 cases of day case septoplasty". *Clinical Otolaryngology and Allied Sciences* 24.3 (1999): 213-215.

6. Brown P M., *et al*. "ENT day surgery in England and Wales-an audit by the Royal College of Surgeons (Eng.) Comparative Audit Service". *The Journal of Laryngology and Otology* 112 (1998): 161-165.

7. Singarelli S., *et al*. "Day-surgery, one-day surgery: the experience of an ENT Unit in a 250 bed hospital". *ACTA Otorhinolaryngologica Italica* 25 (2005): 365-369 (2005).

8. Menezes AS., *et al*. "Septal and turbinate surgery: is overnight essential?" *European Archives of Oto-Rhino-Laryngology* 275.1 (2017): 131-138.

9. Dąbrowska-Bień J., *et al*. "Complications in septoplasty based on a large group of 5639 patients". *European Archives of Oto-Rhino-Laryngology* 275.7 (2018): 1789-1794.

10. Benson-Mitchell R., *et al*. "Septoplasty as a day-case procedure - a two centre study". *The Journal of Laryngology and Otology* 110 (1996): 129-131.

11. Bhattacharyya N. "Ambulatory sinus and nasal surgery in the United States: demographics and perioperative outcomes". *Laryngoscope* 120.3 (2010): 635-638.

12. Min YG., *et al*. "Prevalence and risk factors of chronic sinusitis in Korea: results of a nationwide survey". *European Archives of Otorhinolaryngology* 253.7 (1996): 435-439.

13. Hastan D., *et al*. "Chronic rhinosinusitis in Europe—an underestimated disease. A GA2LEN study". *Allergy: European Journal of Allergy and Clinical Immunology* 66.9 (2011): 1216-1223.

14. Alharethy S., *et al*. "Common nasal deformities among rhinoplasty patients in a university hospital in Saudi Arabia". *Annals of Saudi Medicine* 37.3 (2017): 207-211.

15. Etigadda D and Majeed D. "Clinical and Radiological Evaluation of Deviated Nasal Septum in Classifying and Surgical Management of the Deviated Septums". *IOSR Journal of Dental and Medical Sciences* 16.2 (2017): 13-20.

16. Al-Shehri AM., *et al*. "Retrospective study of endoscopic nasal septoplasty". *Biomedical Research (India)* 24.3 (2013): 337-340.

17. Alotaibi AD., *et al*. "The Common Clinical Presentation of Patients Selected for Septoplasty in Northern Saudi Arabia". *International Journal of Otorhinolaryngology* (2018): 8536387.

18. Hosokawa Y., *et al*. "Effectiveness of modified cutting and suture technique for endonasal caudal septoplasty in correcting nasal obstruction and preventing nasal tip projection loss". *Journal of Otolaryngology-Head and Neck Surge*ry 50.1 (2021): 1-7.

19. Na'ara S., *et al*. "Endoscopic Septoplasty Versus Traditional Septoplasty for Treating Deviated Nasal Septum: A Prospective, Randomized Controlled Trial". *Ear, Nose and Throat Journal* 100.9 (2021): 673-678.

20. ul Haq A., *et al*. "Key Considerations in Practices and Principles of Endoscopic Septoplasty: Lessons, Mistakes and Future". *Bangladesh Journal of Otorhinolaryngology* 27.2 (2021): 170-176.

21. Nassrallah S., *et al*. "Endoscopic versus conventional septoplasty in the treatment of obstructive nasal septal deviation". *Romanian Journal of Rhinology* 10.40 (2020): 123-131.

22. Al-Hussaini A., *et al*. "The uptake of day-case septoplasty in England and Wales". *The Bulletin of the Royal College of Surgeons of England* 98.5 (2016): 212-215.

23. Moss William J., *et al*. "Is Inferior Turbinate Lateralization Effective?". *Plastic and Reconstructive Surgery* 136.5 (2015): 710e-711e.

24. Günel C., *et al*. "Hemodynamic effects of topical adrenaline during septoplasty". *Indian Journal of Otolaryngology and Head and Neck Surgery* 68.4 (2016): 391-395.