Section: Miscellaneous

Original Research Article

COMPARATIVE EVALUATION OF INFERIOR TURBINOPLASTY VERSUS INTRANASAL CORTICOSTEROID THERAPY IN PERSISTENT ALLERGIC RHINITIS: A PROSPECTIVE STUDY FROM RAJASTHAN, INDIA

Deepika N[1], Shraddha Dadhich[2]

[1]Senior Resident, Department of ENT, Dr. B R Ambedkar Govt. Medical College hospital, Sirohi, Rajasthan, India.
[2]Assistant Professor, Department of Dentistry (Oral and Maxillofacial Surgery, Dr. B R Ambedkar Govt. Medical College hospital, Sirohi, Rajasthan, India.

Received : 02/04/2026
Received in revised form : 14/05/2026
Accepted : 01/06/2026

Keywords:
PAR, Submucosal resection, hypertrophy, TNSS (Total Nasal Symptoms score), Corticosteroids, RQLA.

Corresponding Author:
Dr. Shraddha Dadhich,
Email: shruddha.dadhich92@gmail.com

DOI: 10.47009/jamp.2026.8.3.144

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2026; 8 (3); 801-803

ABSTRACT

Background: Persistent allergic rhinitis can result in inferior turbinate hypertrophy, causing nasal obstruction, sleep disturbances, and impaired quality of life. Hence surgical and prophylactic techniques play a vital role in the management of allergic rhinitis. **Materials and Methods:** Out of 70 (seventy) PAR adult patients, 35 patients underwent inferior turbinoplasty using submucosal resection and trimming of the hypertrophied turbinate tissue; 35 patients (Group B) were treated with corticosteroid spray for six months (200 µg/day), and post-treatment, after six months, the results were compared. **Results:** The TNSS 1st month, 2nd month, and 3rd month; at the 6th month, the nasal obstruction score, sneezing frequency score, rhinorrhea score, nasal itching score (VAS/10), and RQLA score had a significant p value ($p<0.001$). **Conclusion:** Turbinate surgery was associated with positive outcomes in PAR and maintained association during long-term follow-up. Turbinoplasty was associated with significant symptom improvement and a low complication rate.

INTRODUCTION

The inferior turbinate is an integral component of the nasal cavities that contributes to the regulation of airflow, humidification, and mucociliary function.[1] While they remain indispensable to the physiological function of the nose, their position within the nasal cavity and a continuous nasal airflow imply that inferior turbinates are seemingly in constant contact with various allergic, irritative, and inflammatory stimuli, thereby making them prone to mucosal edema and subsequent hypertrophy,[2] particularly in sensitive individuals. Due to such common stimuli present in the environment, inferior turbinate hypertrophy (ITH) remains a highly prevalent condition encountered in otolaryngology practices and represents a substantial issue that impairs quality of patients' lives and direct medical costs.[3] Regardless of the cause, persistent inferior turbinate hypertrophy (ITH) often leads to chronic nasal obstruction, which may exacerbate comorbidities and conditions such as sleep-disordered breathing and upper respiratory tract infections. Turbinate surgery relieves allergic symptoms as a physical remedy, but recurrence of hypertrophy may be quite common, followed by turbinoplasty.[4] Therefore, many ENT surgeons prefer intranasal corticosteroid spray for six months to minimize the hypertrophy of the inferior turbinate, which gives complete relief for PAR patients. Hence, an attempt is made to compare the post-treatment outcomes.

MATERIALS AND METHODS

70 adult patients who regularly visited the ENT and Dental department of Dr. B. R. Ambedkar, Government Medical College Hospital, Sirohi, Rajasthan, India, were studied.

Inclusion Criteria

The patients age between 18-60 years, who presented with voice-related symptoms, having persistent allergic rhinitis (PAR). The patients who gave their consent for study in writing were selected.

Exclusion Criteria

Patients with a deviated nasal septum that requires septoplasty, nasal polyps, or other anatomical abnormalities. Immunocompromised patients, pregnant and lactating mothers, and those with asthma or concomitant sinusitis were excluded from the study.

Method

70 (seventy) patients having persistent rhinitis were examined thoroughly, and a routine blood examination and absolute eosinophil count were also

ISSN (O): 2687-5365; ISSN (P): 2753-6556

studied in every patient. Out of 70 patients, 35 patients were classified as Group A (turbinoplasty) and underwent inferior turbinoplasty using submucosal resection and trimming of the hypertrophied turbinate under general or local anesthesia. Nasal packing was removed after 24 hours. For six months mometasone furoate nasal spray (200 µg/day) was administered to patients in Group B (corticosteroid group).

Following details were recorded after turbinoplasty or in corticosteroid patients: congestion, sneezing, rhinorrhea, and itching of the nose were evaluated by using the total nasal symptoms score (TNSS) that varied from 0 to 3. The VAS (visual analog scale) ranged from 0 to 10. (0=dissatisfied) (10=very satisfied). To evaluate the impact on everyday life, the rhinoconjunctivitis quality of life questionnaire (RQLQ) is administered.

The recurrence and complications were studied after six months of the treatment, but the follow-up started after one month, three months, and six months after intervention. Endoscopic nose examinations and assessments were part of each follow-up.

The duration of the study was from July 2025 to June 2026.

Statistical Analysis

Various clinical outcomes between turbinoplasty and intranasal corticosteroid patients were compared with t-tests and significant results were noted. The statistical analysis was carried out using SPSS software. The ratio of males and females was 2:1.

RESULTS

[Table 1] Cmparative study of clinical outcomes Between Turinoplasty and intranasal corticosteroid therapy:

TNSS at 1st month, 3rd month, 6th months, Nasal obstruction score, sneezing frequency score, rhinorrhea score, nasal itching score, patient's satisfaction VAS/10, RQLA score parameter were compared in both groups and p value was highly significant (p<0.001).

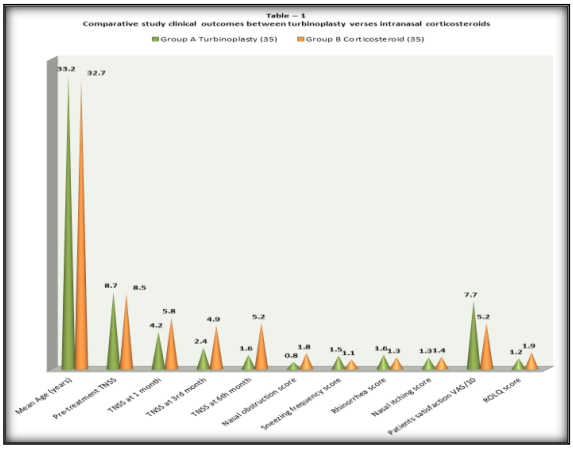

Figure 1: Comparative study clinical outcomes between turbinoplasty verses intranasal corticosteroids

Table 1: Comparative study clinical outcomes between turbinoplasty verses intranasal corticosteroids

Parameters	Group A Turbinoplasty (35) mean value (±SD)	Group B Corticosteroid (35) mean value (±SD)	t test	p value
Mean Age (years)	33.2 (±5.2)	32.7 (±4.6)	0.42	p>0.6714
Pre-treatment TNSS	8.7 (±1.2)	8.5 (±0.5)	0.91	p>0.3659
TNSS at 1 month	4.2 (±1.6)	5.8 (±0.8)	9.46	P<0.001
TNSS at 3rd month	2.4 (±0.5)	4.9 (±1.1)	12.2	P<0.001
TNSS at 6th month	1.6 (±0.4)	5.2 (±1.1)	18.1	P<0.001
Nasal obstruction score	0.8 (±0.02)	1.8 (±0.84)	14.7	P<0.001
Sneezing frequency score	1.5 (±0.02)	1.1 (±0.1)	23.2	P<0.001
Rhinorrhea score	1.6 (±0.2)	1.3 (±0.1)	7.9	P<0.001
Nasal itching score	1.3 (±0.1)	1.4 (±0.2)	2.64	P<0.001
Patients satisfaction VAS/10	7.7 (±0.7)	5.2 (±0.3)	19.4	P<0.001
ROLQ score	1.2 (±0.4)	1.9(±0.5)	6.40	P<0.001

DISCUSSION

Present study of turbinoplasty versus intranasal steroids in the management of allergic rhinitis in the Rajasthan population. The comparison of clinical outcomes between turbinoplasty and intranasal corticosteroid spray treatment included TNSS at the 1st month, 2nd month, and 6th month; nasal obstruction score; sneezing frequency score; and rhinorrhea score. Nasal itching score, VAS/10 score, and RQLQ score had significant p values (p<0.001). These findings are more or less in agreement with previous studies.[5,6,7]

The hypertrophied inferior turbinate shows dilated, engorged, thin-walled venous sinusoids, marked subepithelial inflammatory cell infiltrate beneath the basement membrane, and fibrosis of the lamina propria, suggesting a progressive and irreversible course and representing the end point of inflammation unresponsive to sympathetic nervous system stimulation or medical treatment.[8] At this point of persistent symptoms, medical management usually fails, and the grounds for surgical reduction are mandatory.

PAR has a notable negative impact on quality of life, sleep, emotional function, productivity, and the ability to perform daily activities. RQLQ has strong discriminative and evaluative properties for measuring rhinoconjunctivitis-specific quality of life and offers better registration of changes in disease-related problems compared to generic quality of life questionnaires.[9]

ISSN (O): 2687-5365; ISSN (P): 2753-6556

It is reported that in 1882 numerous surgical methods for the reduction of hypertrophic inferior turbinates have been introduced. Controversy still exists around optimal surgical techniques, but recently radiofrequency ablation and the use of microdebriders have been introduced because they can preserve the physiological function of nasal mucosa.[10] Turbinate surgery can be performed in an outpatient clinical setting, and long-term hospitalization is not required, even if surgery is carried out during hospitalization. The postoperative complications may include bleeding, crusting, and nasal dryness may occur after surgery and resolve after a few months.[11]

CONCLUSION

Present a comparative study of turbinoplasty versus intranasal corticosteroid spray technique. Turbinoplasty is associated with positive, long-term outcomes in patients with AR with a low complication rate. Further research should focus on standardized outcomes, long-term follow-up, and the development of phenotype-driven treatment algorithms because the exact pathophysiology of hypertrophy of the inferior turbinate is still unclear.

Limitation of study: Owing to remote location of research centre, small number of patients, lack of latest techniques we have limited findings and results.

REFERENCES

1. Guvenmez O, Zhanbaeva AK: Treating chronic rhinitis and turbinate hypertrophy without surgery: the effectiveness of silver nitrate cauterization. Cureus 2023, 15 (3); e35758.
2. Larrabee YC, Kacker A: Which inferior reduction technique best decreases nasal obstruction? Larangosco 2014, 124 (4); 814-815.
3. Sapp T, Schin B: Comparison of the effects of radio frequency tissue ablation, CO_2 laser ablation, and partial turbinectomy application on nasal mucociliary functions. Laryngoscope 2003, 113 (3): 514-519.
4. Vijaykumar K, Kumar S, Garg S: Comparative study of radio frequency-assisted versus microdebrider-assisted turbinoplasty in cases of inferior turbinate hypertrophy. Ind. J. Otolaryngol. Head Neck Surg. 2014, 66 (1); 35-39.
5. Pelen A: Comparison of the effects of radio frequency ablation and microdebrider reduction on nasal physiology in lower turbinate surgery. Kulak Burun Ogar Intis Derg. 2016, 26 (6): 325-332.
6. Singh S, Ramli RR: Coblation versus microdebrider-assisted turbinoplasty for endoscopic inferior turbinate reduction. Auris Nasus. Larynx 2020, 47 (5); 593-601.
7. Young M, Aravinthan K: Cost effectiveness analysis of inferior turbinate reduction and immunotherapy in allergic rhinitis Larangoscope 2024, 134 (4); 1572-1580.
8. Lee SH: Mechanism of glucocorticoid action in chronic rhinosinusitis Allergy Asthma Immunol. Res. 2015, 7; 534-537.
9. Seidman MD, Gurgel RK: Clinical practice guidelines allergic rhinitis otolaryngology head and neck surgery 2015, 152 (1); 101-105.
10. Passali D, Salerni L: Nasal decongestants in the treatment of chronic nasal obstructions. Expert Opin Drug Saf. 2006, 5; 783-790.
11. Meltzer EO, Bernstein DI: Mometasone furoate nasal spray plus oxymetazoline nasal spray short-term efficacy and safety in seasonal allergic Am. J. Rhinol. Allergy 2013, 27; 102-10.

ISSN (O): 2687-5365; ISSN (P): 2753-6556