

“Role of Turbinate Procedures in Allergic and Non-Allergic Rhinitis Patients”

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Abstract

Background

Allergic rhinitis is a global health problem that affects patients of all ages and ethnic Groups. Rhinitis, or the "stuffy nose" is the ninth most-common reason patients seek a physician's aid. Rhinitis may be defined as an inflammatory process occurring in the nose. Allergic rhinitis is congestion of the nasal mucosa, triggered by an allergen and mediated by an immune reaction by specific IgE antibody. Clinically, it is characterized by nasal obstruction, sneezing and a clear watery nasal discharge. Non-allergic rhinitis is an inflammation in the nose which is not IgE mediated. It is non seasonal, skin tests and blood tests with allergens are negative. Total and specific IgE levels are low. Chronic nasal airway obstruction is one of the most frequent symptoms encountered by the otorhinolaryngologist. The present study is an attempt to identify the role of turbinate procedures in allergic and non-allergic rhinitis patients.

Materials And Methods

The present longitudinal cohort study “ Role of turbinate procedures in allergic and non-allergic rhinitis patients attending ENT OPD GGH, Kakinada was conducted in department of Otorhinolaryngology & Head & Neck Surgery, Rangaraya Medical College, KAKINADA between September 2017 to August 2019. The study was approved by the ethics committee of the institution.

Results

In our study of 50 cases, clinical signs has been observed in 27 allergic and 23 non-allergic rhinitis patients. Out of the different turbinate procedures, partial inferior turbinectomy, turbinoplasty, Electrocauterization has been done in 27 allergic and 23 non-allergic patients. Out of 27 allergic rhinitis patients, 12 patients underwent partial inferior turbinectomy, 10 patients underwent turbinoplasty, 5 patients underwent electrocauterization using bipolar diathermy. Out of 23 non -allergic rhinitis patients, 11 underwent partial inferior turbinectomy, 9 underwent turbinoplasty, 3 underwent electrocauterization.

Conclusion

From our study of 50 cases among allergic and non-allergic rhinitis patients, the most affected age group is between 21 to 30 years of age. In allergic and non-allergic the most common affected are males. Among rhinitis patients the most common is allergic rhinitis. The most common presenting symptoms are nasal obstruction and sneezing in allergic rhinitis. The most common presenting symptom in non -allergic rhinitis is nasal obstruction, Nasal discharge. The most common clinical sign in both allergic and non-allergic are inferior turbinate hypertrophy. Out of the different procedures the partial inferior turbinectomy has satisfactory results. The most complications like nasal crusting and synechia are more with Electrocauterization. On the basis of above findings, all the different procedures of allergic and non -allergic rhinitis have both their advantages and disadvantages.

Keywords: Allergic Rhinitis, Non-Allergic Rhinitis, Inferior turbinate hypertrophy.

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I. Background

Allergic rhinitis is a global health problem that affects patients of all ages and ethnic groups. Rhinitis, or the "stuffy nose" is the ninth most-common reason patients seek a physician's aid. Rhinitis may be defined as an inflammatory process occurring in the nose. Allergic rhinitis is congestion of the nasal mucosa, triggered by an allergen and mediated by an immune reaction by specific IgE antibody. Clinically, it is characterized by nasal obstruction, sneezing, and a clear watery nasal discharge. Non-allergic rhinitis is an inflammation in the nose which is not IgE mediated. It is non seasonal, and skin tests and blood tests with allergens are negative. Total and specific IgE levels are low. Chronic nasal airway obstruction is one of the most frequent symptoms encountered by the otorhinolaryngologist. The present study is an attempt to identify the role of turbinate procedures in allergic and non-allergic rhinitis.

II. Aims and Objectives

To study the clinical profile in allergic and non -allergic rhinitis patients .To study the role of turbinate procedures in allergic and non allergic rhinitis patients.

III. Materials And Methods Inclusion Criteria

In the study of 50 patients attending the ENT Department of Government General Hospital, Rangaraya Medical College, Kakinada between September 2017 to August 2019, with Patients of both sexes between the age group of 10-50 years presenting with Inferior turbinate hypertrophy inspite of 3months medical treatment with Nasal Corticosteroid spray and Systemic Antihistaminic use .Patients who gave consent for the above study have been included.

Method of Collection of Data

This is a case series carried out in the Dept. of ENT, Govt. General Hospital, Rangaraya Medical College, Kakinada between September 2017 to August 2019 . The study was approved by the ethics committee of the institution.

50 patients fulfilling the above criteria were selected for the study. Patients has been classified into two groups. Group 1 – Patients with Nasal obstruction complaining of Stuffy itchy nose continuous sneezes and AEC >440 cells /cumm. Group 2 –Patients with Nasal obstruction and other described symptoms with AEC< 440 cells /cumm were considered as Non-Allergic rhinitis. Complete clinical history, thorough ENT examination including Diagnostic Nasal Endoscopy was done.

IV. Results

In the present study, 50 cases of Allergic rhinitis and Non-Allergic rhinitis patients were studied during the period from September 2017 to August 2019 at the ENT Department of Rangaraya Medical College, Government General Hospital, Kakinada. This study shows the following observations:

Table 1: Age Distribution

| Age group | Allergic Rhinitis (27) | Non-Allergic Rhinitis (23) |
|-----------|------------------------|----------------------------|
| 15-20 | 06 | 06 |
| 21-30 | 12 | 07 |
| 31-40 | 05 | 06 |
| 41-50 | 04 | 04 |

Table 2: Sex Distribution.

| Sex | No.of patients | Percentage |
|--------|----------------|------------|
| Male | 27 | 54 % |
| Female | 23 | 46 % |

Table 3: Type of Rhinitis

| Type | No. of patients | Percentage |
|-----------------------|-----------------|------------|
| Allergic Rhinitis | 27 | 54 |
| Non-Allergic Rhinitis | 23 | 46 |

Table 4: Clinical Symptoms

| S.NO | SYMPTOMS | Allergic rhinitis [%] | Non Allergic rhinitis [%] |
|------|------------------------|-----------------------|---------------------------|
| 01 | Nasal obstruction | 100 | 100 |
| 02 | Nasal Discharge | 90 | 75 |
| 03 | Post nasal drip | 80 | 70 |
| 04 | Olfactory disturbances | 42 | 25 |
| 05 | Sneezing | 100 | 45 |

| | | | |
|----|-----------------|----|----|
| 06 | Nasal itching | 70 | 40 |
| 07 | Facial pressure | 45 | 40 |
| 08 | Snoring | 73 | 60 |

Table 5: Clinical Signs in both the groups

| S.NO. | Clinical signs | Allergic rhinitis patients [%] | Non Allergic rhinitis patients[%] |
|-------|--------------------------------|--------------------------------|-----------------------------------|
| 01 | Inferior turbinate hypertrophy | 100 | 100 |
| 02 | Pale boggy mucosa | 90 | 0 |
| 03 | Nasal discharge in floor | 80 | 70 |

Table 6: Different turbinate procedures

| Types of rhinitis | Partialinferior turbinectomy | Turbinoplasty | Electrocauterization |
|-----------------------|------------------------------|---------------|----------------------|
| Allergic rhinitis | 12 | 10 | 05 |
| Non Allergic rhinitis | 11 | 09 | 03 |

Table 7 : Outcomes of different Procedures : the following symptoms have been graded into Moderate and significant relief after turbinate procedures.

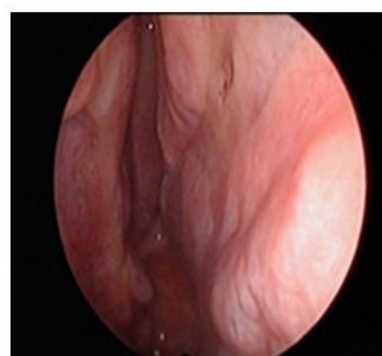
| | AR | | NAR | | AR | | NAR | | AR | | NAR | |
|------------------------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| | Mod. | SGN | Mod. | SGN | Mod. | SGN | Mod. | SGN | Mod. | SGN | Mod. | SGN |
| Nasal obstruction | 04 | 08 | 02 | 07 | 03 | 04 | 05 | 04 | 02 | 01 | 02 | 00 |
| Nasal discharge | 03 | 07 | 05 | 01 | 03 | 03 | 04 | 01 | 01 | 00 | 01 | 00 |
| Post nasal drip | 02 | 06 | 03 | 02 | 02 | 01 | 02 | 01 | 01 | 00 | 00 | 00 |
| Olfactory disturbances | 03 | 02 | 02 | 0 | 02 | 01 | 00 | 00 | 00 | 00 | 00 | 00 |
| Sneezing | 09 | 02 | 04 | 03 | 03 | 04 | 01 | 00 | 02 | 00 | 00 | 00 |
| Nasal itching | 04 | 02 | 03 | 01 | 03 | 02 | 02 | 01 | 02 | 00 | 01 | 00 |
| Facial pressure | 03 | 01 | 02 | 00 | 02 | 01 | 02 | 00 | 01 | 00 | 00 | 00 |
| Snoring | 03 | 03 | 02 | 02 | 01 | 00 | 02 | 00 | 00 | 00 | 00 | 00 |

Table 8: Complications of turbinate Procedures

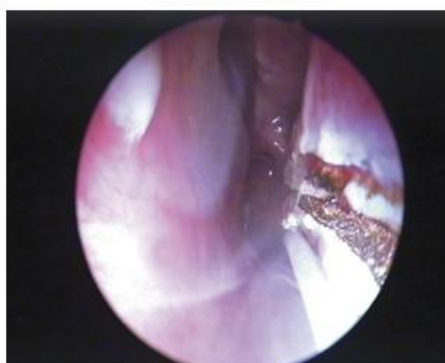
| Complication | Partial inferior Turbinectomy [%] | Turbinoplasty [%] | Electrocauterization[%] |
|----------------|-----------------------------------|-------------------|-------------------------|
| Nasal crusting | 20 | 02 | 40 |
| Synechia | 15 | 02 | 40 |
| Bleeding | 10 | 01 | 05 |



Post-op Partial Inferior Turbinectomy



Post-op Inferior Turbinoplasty



Diode LASER reduction of the inferior turbinate mucosa

V. Discussion

In the present study on Allergic rhinitis in 27 cases, almost all patients presented with nasal obstruction (100%), sneezing (100%), next most common presentation is nasal discharge(95%) followed by post nasal drip(80%), snoring(75%), nasal itching(60%), olfactory disturbances(50%) and facial pain(45%).

In 23 cases of Non-allergic rhinitis, patients presented with nasal obstruction (100%), nasal discharge (75%), nasal itching(70%), post nasal drip(70%), snoring(60%), sneezing(45%), facial pain(40%) and olfactory disturbances(25%). The presenting clinical signs in allergic rhinitis are inferior turbinate hypertrophy (100%), nasal discharge (95%), pale nasal mucosa (90%). In non-allergic rhinitis inferior turbinate hypertrophy (100%), nasal discharge (75%), mucosal oedema(70%). The most common clinical sign in both allergic and non-allergic rhinitis are inferior turbinate hypertrophy. Turbinoplasty with submucosal resection is used when mucosal bulk is more and turbinoplasty without fracturing is used when the bone of the turbinate causes nasal obstruction.

VI. Conclusion

Among allergic and non-allergic rhinitis, the most affected age group is between 21 to 30 years of age. Among allergic and non-allergic the most common affected are males.

Among rhinitis patients the most common is allergic rhinitis. The most common presenting symptom in non allergic rhinitis is nasal obstruction, Nasal discharge. The most common clinical sign in both allergic and non-allergic are inferior turbinate hypertrophy. Out of the different procedures the partial inferior turbinectomy has satisfactory results. The most complications like nasal crusting and synechiae are more with Electrocauterization. There is no statistical significant difference in the complications of different procedures in the present study.

On the basis of above findings, all the different procedures of allergic and Non-allergic rhinitis have both their advantages and disadvantages and the type of surgery to be used varies from patient to patient and on the surgeon familiar with the procedure.

References

- [1]. Wilson KF, Spector ME, Orlandi RR (2011) Types of rhinitis. *Otolaryngol Clin North Am* 44: 549-559.
- [2]. Bousquet J, Van Cauwenberge P, Khaltaev N; Aria Workshop Group; World Health Organization (2001) Allergic rhinitis and its impact on asthma. *J Allergy Clin Immunol*
- [3]. Hansel F (1929) Clinical and histopathologic studies of the nose and sinuses in allergy. *J Allergy* 1: 43-70.
- [4]. Bachert C, van Cauwenberge P (2003) The WHO ARIA (allergic rhinitis and its impact on asthma) initiative. *Chem Immunol Allergy* 82: 119- 126.
- [5]. Kulig M, Klettke U, Wahn V (2000) Development of seasonal allergic rhinitis during the first 7 years of life. *J Allergy Clin Immunol* 106: 832-839
- [6]. Wright AL, Holberg CJ, Martinez FD, Halonen M, Morgan W, et al. (1994) Epidemiology of physician-diagnosed allergic rhinitis in childhood. *Pediatrics* 94:895-901.
- [7]. Eccles R (2008) Anatomy and Physiology of the Nose and Control of Nasal Airflow. In *Middleton's Allergy: Principles and Practice*, 7th Edition. Philadelphia: Mosby: 702-711.
- [8]. Rosenwasser LJ (2011) Understanding of the Pathophysiology of Allergic Rhinitis. *Immunol Allergy Clin N Am* 31: 433-439.
- [9]. Abbas AK, Lichtman AH (2005) Immediate Hypersensitivity. In: Abbas AK, Lichtman AH, editors. *Cellular and molecular immunology*. 5th edition. Philadelphia: Elsevier Saunders: 432-452.
- [10]. Hansen I, Klimek L, Mösges R, Hörmann K (2004) Mediators of Inflammation in the Early and the Late Phase of Allergic Rhinitis. *Curr Opin Allergy Clin Immunol* 4: 159-163.

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