



CASE REPORT

ROLE OF SURGERY IN ALLERGIC RHINITIS

Harinarayana N¹, Vijay Praveen S²

1. Assistant Professor, Department of Otorhinolaryngology, SVS Medical college, Mahbubnagar, Telangana state, INDIA
2. Post Graduate student, Department of otorhinolaryngology, SVS Medical college, Mahbubnagar, Telangana state, INDIA

Corresponding Author: Dr.Harinarayana.N and Dr.S.Vijay Praveen

Abstract

Allergic rhinitis is an IgE-mediated immunologic response of nasal mucosa to air-borne allergens and is characterised by watery nasal discharge, nasal obstruction, sneezing and itching in the nose. Allergic rhinitis is distributed mainly in males, aged between 20-40 years.¹ The commonest finding is hypertrophied inferior turbinate producing nasal obstruction.² The best result obtained is by inferior turbinoplasty which gives almost complete relief. A clinical study was undertaken to study the various problems that exist with allergic rhinitis, and which require surgical management to relieve symptomatology. Various surgical techniques employed, complications and outcome of these procedures is studied in a two year prospective study from 2008 to 2010 at Mahatma Gandhi Memorial Hospital, Warangal- A tertiary referral hospital. A total of 125 patients who are aged between 20 years to 55 years with moderate to severe allergic rhinitis symptoms were included in the study. Only those in whom medical line of management failed and recurrent symptoms existed were selected. Appropriate surgery was done for selected cases; all the cases were discharged after anterior nasal packing removal and first schedule of endoscopic suction. They were followed up for minimum period of 2 months to 6 months with regular intervals. Results are analysed and presented.

KEY WORDS: Allergic rhinitis, hypertrophied inferior turbinate, inferior -turbinoplasty.

INTRODUCTION

Allergic Rhinitis is highly prevalent, allergen induced, upper airway inflammatory disease, characterised by hyperactive airway mucosa and episodes of symptoms chronicity with periods of acute exacerbation. It is extremely common condition, affecting 20% of population. While it is not a life threatening condition, it is a significant cause of wide spread morbidity. Although mistakenly viewed as trivial disease, symptoms of rhinitis may significantly impact the patient quality of life.

Allergic rhinitis nose is a handicapped nose, if it is associated with hypertrophied inferior turbinate, Deviated nasal septum, Rhinosinusitis and Nasal polyposis. All these cause more worsening of condition, so surgery is needed to correct all the above conditions.

In India, 30-35% of population suffer from nasal allergy of which 80% are in productive age of below 40 years the reported prevalence of allergic rhinitis in young adults.

**OBJECTIVES:**

The objective was to study the various problems those exist with allergic rhinitis., various conditions which require surgical management to relieve symptomology., different surgical techniques employed to relieve the symptoms., study & compare the complications of various surgeries., study & compare the outcome of individual procedures and to emphasise the importance of which procedure is most benefiting to the patient to get relieved of the symptoms.

MATERIALS & METHODS:

A two year prospective study from 2008 to 2010 at Mahatma Gandhi Memorial Hospital, Warangal- A tertiary referral hospital. A total of 125 patients who are aged between 20 years to 55 years with moderate to severe allergic rhinitis symptoms were included in the study. Participants with three or more symptoms of following - nasal obstruction, nasal discharge, headache, sneezing, nasal itching were selected. Only those in whom medical line of management failed and recurrent symptoms existed were selected. Subjects were excluded from the study if they had Acute symptoms of allergic rhinitis or, Co- existing systemic disease, excluding asthma. Detailed history and physical examination was done to all the patients included in the study. Information such as age, sex, occupation, was recorded. History with respect to the presenting symptoms, duration and etiological precipitating causes was taken. Investigations that were routinely performed include- routine blood investigations, *absolute eosinophil count*, radiological investigations [X-ray paranasal sinuses, CT scan PNS]

RESULTS:

Various nasal symptoms in 125 patients studied in different age groups.

Table 1 : AGE DISTRIBUTION:

Age groups	No. Of patients
20-30	45
31-40	35
41-50	25
Above 50 Yrs	20

On age wise distribution it was observed that majority of the cases were in the age group of 20 - 30 years.

TABLE: 2 SEX DISTRIBUTION:

	Male	Female
No	72	53

In the present study the Male:Female = 1.36:1

**TABLE: 3 STUDY OF SYMPTOMOLOGY**

SYMPTOMS	NO. OF PATIENTS
Sneezing	30
Nasal obstruction	12
Rhinorrhoea	8
Headache	10
Epistaxis	2
Anosmia	6
More than 1 above symptoms	57

Incidence of sneezing: 22.5/100 patients.

Incidence of nasal obstruction: 9/100 patients.

Incidence of rhinorrhoea: 6/100 patients.

Incidence of headache: 7.5/100 patients.

Incidence of epistaxis: 1.5/100 patients.

Incidence of anosmia: 4.5/100 patients.

Incidence of more than 1 above symptoms: 42.75/100 patients

INVESTIGATIONS:

- Complete blood examination.
- Absolute eosinophilic count.
- X-ray PNS.
- CT scan PNS.

CBP showing eosinophilia. No. Of cases-30

X-ray PNS showing 1. DNS- no. Of cases-11

2. HIT – no. Of cases- 35

3. Rhinosinusitis- no. Of cases- 15

CT scan PNS showing 1. Sinusitis- 34

2. Polyps – 8



TABLE: 4 ENDOSCOPIC FINDINGS AGNAIST DIFFERENT AGE GROUPS:

Age group	HIT	DNS	Rhinosinus-itis	Nasal polyposis	HIT+ DNS	DNS+ Rhinosinusitis	HIT+DNS+Nasal polyposis
20-30	10	4	8	-	6	6	-
31-40	10	2	12	4	4	3	5
41-50	7	4	8	2	3	2	2
Above 50	8	1	6	2	-	3	3
Total	35	11	34	8	13	14	10

Incidence of CBP showing eosinophilia: 24/100.

Incidence of x-ray PNS: 48.8/100

Incidence of CT-scan: 51%

TABLE: 5 VARIOUS SURGICAL METHODS DONE IN 125 SELECT CASES:

Surgery	No. Of patients	incidence
SMD	15	12
Partial inferior turbinectomy	10	8
Inferior turbinoplasty	10	8
Middle meatus antrostomy	15	12
Ethmoidectomy	15	12
Intra-nasal polypectomy	8	6.4
Frontal sinusotomy+ sphenoidotomy	4	3.2
Septoplasty	11	8.8
SMD+ septoplasty	13	10.4
Septoplasty+MMA	14	11.2
Septoplasty+polypectomy+SMD	10	8

INFERENCE: commonest surgery performed in this study SMD.



10 cases were performed

Results of inferior turbinoplasty:

TABLE: 6 INFERIOR TURBINOPLASTY

Symptoms	Present in pre-op	Persistence in post-operative	Success rate
Nasal obstruction	10	Nil	100%
Rhinorrhoea	5	1	80%
headache	5	1	80%

INFERENCE:Nasal obstruction relieved in 100%

TABLE:7 RESULTS OF VARIOUS COMBINED SURGERIES:

Symptoms	SMD+ SEPTOPLASTY			SEPTOPLASTY+ MMA			SMD+SEPTOPLASTY+ POLYPECTOMY		
	Present In pre-op	in persistent post-op	Success rate	Present in pre-op	Persistent in post-op	Success rate	Present in pre-op	in persistent post-op	Success rate
Nasal obstruction	13	2	86.62%	9	1	88.9%	10	1	90%
Rhinorrhoea	5	1	80%	8	2	75%	5	1	80%
Headache	6	2	66.6%	11	1	90.9%	6	2	66.6%
Postnasal drip	3	1	66.6%	6	1	83.4%	5	1	80%

**TABLE: 8 COMPARISON OF SUCCESS RATE IN VARIOUS SURGERIES AGAINST SYMPTOMOLGY**

Sucess rate in various surgeries	Nasal obstruction	Rhinorrhoea	Headache	Postnasal Drip
SMD	86.6%	76%	50%	-
Partial Inferior Turbinectomy	90%	80%	60%	66.7%
Inferior Turbinoplasty	100%	80%	80%	-
MMA	93.4%	83.4%	50%	80%
Intranasal Polypectomy	100%	83.4%	83.4%	77%
Frontal Sinusotomy+Sphenoidotomy	75%	66.7%	50%	60%
Septoplasty	90%	75%	75%	66.7%
SMD+Septoplasty	86.6%	80%	66.7%	66.7%
Septoplasty+MMA	88.9%	75%	90.9%	83.4%
SMD+Septoplasty+Polypectomy	90%	80%	66.7%	80%

TABLE: 9 COMPLICATIONS OF COMBINATION OF SURGERIES:

Complications	SMD+Septoplasty		MMA+Septoplasty		Septoplasty+Polypectomy+SMD	
		incidence		Incidence		incidence
Intra-op bleeding	2	15.38%	3	21.4%	2	20%
Post-op bleeding	1	7.69%	2	14.28%	1	10%
Crusting	2	15.38%	2	14.28%	2	20%
adhesions	1	7.69%	1	7.14%	1	10%

DISCUSSION

In the present study, Allergic rhinitis is distributed mainly in age group between 20-40 years which is consistent with the study by J.Ch. Virchow, C. Bachert¹. Allergic rhinitis was common in males in contrary with the study by J.Ch. Virchow, C. Bachert¹. Commonest symptom was combination form that is sneezing, nasal obstruction and rhinorrhoea which is



correlated with study by Sur DK, Scandale S; Scandale³. Commonest finding was hypertrophied inferior turbinate which is consistent with study by Parida PK, Santhosh K, Ganesan S, Surianarayanan G, Saxena SK.² Investigations done were complete blood picture (which showed eosinophilia), X ray pns & C T scan pns. Commonest surgery performed is SMD and incidence is 12% .

Various other surgeries performed are:

- A. Partial inferior turbinectomy and incidence is 8%
- B. Inferior turbinoplasty, incidence is 8%
- C. MMA, incidence is 12%
- D. Intranasal ethmoidal polypectomy, incidence is 6.4%
- E. Septoplasty. Incidence is 3.1%
- F. Frontal sinusotomy + sphenoidotomy . Incidence is 8.8%
- G. Septoplasty + smd. Incidence is 10.4%
- H. MMA + septoplasty , incidence is 11.2%
- I. Septoplasty + polypectomy + smd , incidence is 8%

Complications of various surgeries and their incidences are included. Most common of complications of SMD is crusting which correlates with study by Abdul Aziz Ashoor.⁴ Most common complication of partial inferior turbinectomy is intra operative bleeding and the common complication of inferior turbinoplasty is crusting correlating with study by Chieh-Feng Lee; Tai-An Chen.⁵ Complications of other surgeries are intraoperative bleeding and adhesion formation. Surgical outcome or success rate of various surgeries are -Nasal obstruction due to hypertrophied inferior turbinate best relieved by inferior turbinoplasty and success rate is almost 98% in contrary with 80% in the study by Ophir D, Schindel D, Halperin D, Marshak G.⁶ Headache and rhinorrhea best relieved by intra nasal polypectomy and middle meatus antrostomy.⁷

CONCLUSION

Allergic Rhinitis is commonly seen in age group of 31-40 years. The commonest presentation is combination of nasal obstruction , sneezing, rhinorrhoea. The commonest finding is hypertrophied inferior turbinate producing nasal obstruction. So turbinate reduction is done by various turbinate reduction procedures like SMD, partial inferior turbinectomy, inferior turbinoplasty. The best result obtained is by inferior turbinoplasty which gives almost complete relief. Symptoms are effectively controlled giving maximum result if there are associated conditions like DNS, Polyposis, Sinusitis ; corrected by appropriate surgeries like septoplasty, endoscopic polypectomy and FESS

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