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ENT

INCIDENCE OF ATROPHIC RHINITIS AFTER PARTIAL INFERIOR TURBINECTOMY: A RETROSPECTIVE COHORT STUDY

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ABSTRACT **Background:** Inferior turbinate hypertrophy is a common finding while evaluating the patients with Allergic Rhinitis, Chronic Rhinitis, Non-Allergic Rhinitis, Hormonal Changes, Acute sinus infection and medications. Turbinate hypertrophy causes significant impact on patient's quality of life as it causes sensation of nasal obstruction, difficulty in sleeping and epistaxis due to altered and turbulent flow of air current in nasal cavity and patients tend to go for surgical management when the medical management fails. The nasal obstruction is generally relieved after surgery but patient with a roomy nasal cavity is also at risk of developing Atrophic Rhinitis. We present a retrospective cohort study to compare the incidence of post operative Atrophic Rhinitis in two groups with one group of patients undergoing Partial turbinectomy under endoscopic guidance and other group undergoing turbinate reduction using a Turbinate Scissor. All the patients included in the study underwent the procedure in the Department of Otorhinolaryngology-Head and Neck Surgery in MBS Hospital, Kota over a period from July 2020 to December 2021. **Methods:** This retrospective study includes 126 patients as per the inclusion criteria described in the following article out of which 74 patients (52M, 22F) underwent Partial Inferior Turbinectomy using a microdebrider under endoscopic guidance and 52 patients (37M, 15F) underwent the Procedure using Turbinate scissors and the incidence of Atrophic Rhinitis was noted in the post operative follow up period and the data obtained was put to statistical evaluation. **Results:** Atrophic Rhinitis was noted in a total of 2 patients out of which 1 patient underwent the procedure using microdebrider and1patient underwent the procedure using Turbinate scissors. It was noted that there was no difference in gender distribution of Atrophic Rhinitis as well as the use of Microdebrider did not offer any advantage in reducing the incidence post operative Atrophic Rhinitis (p-value 0.811).

KEYWORDS :

INTRODUCTION

The hypertrophy of the Inferior turbinate and the associated nasal obstruction is a rampant in general population and has been managed both medically and surgically. Inferior turbinate hypertrophy generally is secondary to other underlying pathologies like Allergic Rhinitis, Acute Rhinitis, Chronic Irritative Rhinitis, occupational exposure to smoke and irritation of the nasal mucosa due to industrial pollutants. The chronic irritation and above-described nasal mucosal pathologies cause the mucosa of the nasal cavity to undergo chronic inflammation and there is local secretion of growth factors and inflammatory mediators that cause the mucosal hyperaemia, congestion and hypertrophy ultimately culminating into hypertrophy of the Turbinal mucosa. The enlarged turbinate cause sensation of nasal obstruction and irritation due to altered airflow in the nasal cavity. The medical management generally comprises of the identification of the underlying cause and symptomatic management with antihistaminic drugs, topical nasal decongestants, and antibiotics to prevent secondary bacterial infections. In cases where the medical management no longer provides relief in the patient's symptoms the surgical management is considered which primarily involves the reduction of the turbinate. The types of turbinate reduction can be categorized in two types with one having a mucosal preservation strategy and the other in which the mucosa medial to the turbinate is not preserved. In the procedures where the microdebrider is used. The study aims to compare the incidence of Atrophic Rhinitis in these patients after surgery. The mucosal preservation approach is the one using the microdebrider for the use of turbinectomy and the other group where the Turbinate Scissor was used for the surgical management.

MATERIALS AND METHODS

Study Population

To carry out this prospective study 126 patients were included in the study who underwent surgery for turbinate reduction at MBS Hospital under the department of Otorhinolaryngology-Head and Neck Surgery. Only those patients were included in the study that met inclusion criteria for the study.

Study Design

A retrospective case study was designed on the above-described population and the patients were kept in follow up after surgery on outdoor basis over 12 weeks as once a week visit basis. The thorough ENT examination was done and the anterior rhinoscopy findings were noted.

The NOSE (Nasal Obstruction Symptom Evaluation) survey was used to measure nasal obstruction. It is a brief questionnaire consisting of 5 self-rated items, each scored from 0 to 4. The NOSE score represents the sum of the responses to the 5 individual items and ranges from 0 to 20. This questionnaire was handed out to the patient when the patient showed up in follow up visit.

Following parameters were included in the questionnaire

- Nasal congestion of stuffiness
- Nasal blockage or obstructive sensation
- Trouble breathing through Nose
- Trouble while sleeping
- Sensation of inability to get enough amount of air through nose while exercising

The responses were noted as patient having:

- No problem at all
- Very mild problem
- Moderate problem
- Fairly bad problem
- Severe problem

The responses were scored as 0 to 4 points for each and the result was summated and multiplied by 5 to get a score out of 100.

The patients who were having Score in the range of 30-50 were graded as moderate nasal obstruction, with score 55-75 as moderate nasal obstruction and with score of 80-100 as severe nasal obstruction.

The inclusion criteria of the patients are as follows:

- The patients in the age group of 15-35 years
- Patients who had significant nasal obstruction and having score of 55 or more on NOSE questionnaire
- Patients having poor quality of sleep.
- Patients with failed medical management i.e., the patients who are

refractory to medications and show no improvement in their symptoms and no reversal in the size of the turbinate.
- Patients who showed significant enlargement in the Inferior Turbinate on Anterior Rhinoscopy and diagnostic Nasal Endoscopy.

The exclusion criteria for the study are as follows:
- Patients having Deviated Nasal Septum
- Score 50 or less on NOSE questionnaire
- Patients having no comorbidities like Diabetes Mellitus

The patients having following clinical features were said to have Atrophic rhinitis:
- Nasal crusting often Greenish-Yellow coloured.
- Nasal obstruction due to crusting.
- Nasal discharge.
- Frequent upper respiratory tract infections.
- Loss of sense of smell or decreased sense of smell.
- Sore throat and watering of eyes.

All the patients underwent similar preoperative investigations and workup like routine bloodwork, imaging. All the patients were given standard post operative instructions and precautions.

RESULT

All the patients who underwent the turbinate reduction procedure were divided into two groups. One group underwent inferior turbinate reduction under endoscopic guidance in which the turbinate was cut out using a microdebrider. The other group was of patients who underwent the procedure where the turbinate was reduced using Turbinate Scissor. A total of 126 patients underwent the turbinate reduction procedure out of which 89 were males and 37 were females. Among males 52 underwent the procedure where a microdebrider was used for reduction of inferior turbinate and in 37 patients Turbinate Scissors were used. Similarly, among females 22 underwent the procedure using microdebrider and in 15 patients Turbinate scissors were used for procedure.

After performing a statistical analysis following observations were made:

Table 1: Distribution of turbinectomy cases according to gender

Gender	Turbinectomy using microdebrider under endoscopic guidance	Turbinectomy using turbinate scissors	Total
Male	52	37	89
Female	22	15	37
Total	74	52	126

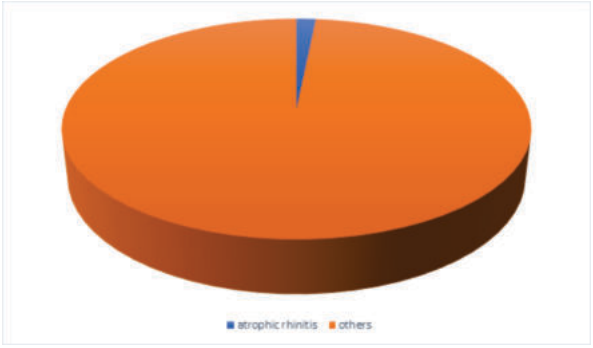

Figure 1: Prevalence of Atrophic Rhinitis among patients who underwent Inferior Partial Turbinectomy

Only 2 people developed atrophic rhinitis out of 126. Prevalence of developing atrophic rhinitis in patients who underwent inferior partial turbinectomy is only 1.58%.

On follow up one patient out of 74 who underwent Turbinectomy using microdebrider under endoscopic guidance developed atrophic rhinitis i.e., 1.35%.

Similarly, 1 out of 52 (i.e., 1.92%) developed atrophic rhinitis in patients who underwent turbinectomy using turbinate scissors. There is difference in the proportion of people who underwent turbinectomy using the two above mentioned procedure is not statistically significant (p value=0.811).

DISCUSSION

As we can see after analysing the data statistically that incidence of Atrophic Rhinitis is extremely low and statistically insignificant after the turbinate reduction procedure be it the case of use of Microdebrider or be it the case where Turbinate scissor is used.

CONCLUSION

So, we can say that after analysing the results statistically
- There is no difference in distribution of incidence of Atrophic Rhinitis when both procedures are compared
- There is no significant advantage of performing the Turbinate Reduction using the Micrdebrider over performing the Turbinate Reduction using Turbinate Scissors. Atrophic Rhinitis Was noted in follow up after both the procedures and no procedure is better than the other in reducing the post operative incidence of Atrophic Rhinitis.

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