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ORIGINAL RESEARCH ARTICLE

TURBINECTOMY VERSUS TURBINOPLASTY: AN OUTCOME ANALYSIS

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ABSTRACT:

Introduction : Nasal obstruction is one of the most common chief complaints of the patients visiting the ENT outpatient department. In some patients the cause for the nasal obstruction may be hypertrophy of the inferior turbinate, the proper management of which is still debatable.

Material and method: 60 symptomatic patients with hypertrophy of inferior turbinate presenting to the department of ENT over a period of one year that is from 1st February 2016 to 31st January 2017, a detailed history was taken and thorough clinical examination was done and examination with 0º degree nasal endoscope, patients were operated for their enlarged turbinates either by turbinectomy or turbinoplasty .The findings were recorded pre operatively, per operatively and post operatively with the aid of the endoscope and after discharge from the hospital. The patients were called for follow-up every fort nightly for six months and they were asked for relief of symptoms, examined for nasal obstruction and for recurrence of symptoms. These findings were included in the descriptive study and statistically analyzed.

Results: Nasal obstruction was the common complaint and the patients were most commonly diagnosed to have allergic rhinitis. Most of the patients became symptom free with total turbinectomy as compared to turbinoplasty.

Conclusion: Total Inferior turbinectomy and inferior turbinoplasty both have comparable success rates. Total turbinectomy allows complete removal of inferior turbinate there by reducing the chances of developing recurrent obstructive symptoms.

INTRODUCTION:

Since the latter part of the 19th century different medical and surgical treatments have been developed to treat the enlarged turbinate, reduction in the size of the inferior turbinate is an accepted treatment for the same and this gives considerable improvement in the nasal airway. The bone and or the mucosa may be enlarged, but what constitutes pathologic or normal is not well defined and therefore there is controversy over the management of the turbinate in symptomatic subjects. (1)

Nasal obstruction is in itself a very bothersome symptom, it especially affects the sleep of the patient. In turn, can lead to symptomatic sequelae such as sinusitis, otitis media, and the onset or worsening of mild to severe sleep disturbances, leading to inability to concentrate, day time somnolence, and low results of psychometric tests, including obstructive sleep apnoea.

Nasal obstruction was reviewed by Kimmelman, who in 1989 published a practical outline to guide the treatment of the most common etiologies, including allergic rhinitis, infectious rhinitis, and vasomotor rhinitis. Kimmelman estimated that in the United States alone at that time, an estimated $5 billion was being spent annually on medications to relieve nasal obstruction. An additional $60 million was being spent on surgical remedies, and another $10 billion on

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the treatment of associated disorders, such as recurrent rhinosinusitis, otitis media, bronchitis, and asthma. Further adding to the condition's economic impact are less tangible factors, such as absenteeism and decreased productivity. (2)

In clinical practice inferior turbinectomy and turbinoplasty is routinely performed. We performed both inferior turbinectomy and inferior turbinoplasty on 30 patients, each. Our objective was to compare the efficacy of both the methods in terms of subjective and objective relief of symptoms, safety, recurrence and postoperative morbidity.

OBJECTIVES

- To study the outcome of inferior turbinectomy versus turbinoplasty with an endoscope.
- To compare the efficacy of turbinectomy and turbinoplasty in terms of both subjective and objective relief of symptoms.
- To compare the efficacy of turbinectomy and turbinoplasty in terms of safety, recurrence and post operative morbidity.

INCLUSION CRITERIA:

- All the symptomatic patients with hypertrophy of the inferior turbinate willing to undergo surgery.
- Age between 21 to 70 years.
- Hypertrophy of inferior turbinate due to the allergic rhinitis and vasomotor rhinitis.
- Hypertrophy of inferior turbinate causing alteration in smell and headache.
- Hypertrophy of inferior turbinate associated with deviated Nasal septum.

EXCLUSION CRITERIA:

- Age below 21 years and above 70 years.
- Patients with asymptomatic hypertrophy of inferior turbinate.
- Patients who have already undergone surgery for hypertrophy of inferior turbinate.

MATERIAL AND METHOD:

60 symptomatic patients with hypertrophy of inferior turbinate presenting to the Department of ENT over a period of one year that is from 1st February 2016 to 31st January 2017, a detailed history was taken and thorough clinical examination was done and examination with 0^0 degree nasal endoscope, patients were operated for their enlarged turbinates either by turbinectomy or turbinoplasty .The findings was recorded pre operatively, per operatively and post operatively with an aid of the endoscope. After discharge from the hospital, the patients were called for follow-up every fort night for 6 months and were asked for relief of symptoms, examined for nasal obstruction and for recurrence of symptoms. These findings were included in the descriptive study and statistically analyzed.

Surgical management of turbinate dysfunction that was done in this study:

1. INFERIOR TURBINECTOMY: This procedure involves clamping the inferior turbinate at its base to achieve hemostasis, followed by the use of turbinectomy scissors or endoscopic instruments to resect the entire turbinate along its base.

2. INFERIOR TURBINOPLASTY: is a procedure that attempts to preserve the mucosa of the turbinate in order to improve the mucociliary clearance and air conditioning function of the inferior turbinate. An incision is made along the inferior border of an in-fractured inferior turbinate and medial and lateral submucosal flaps are elevated. The anterior 2/3 bone of the inferior turbinate is partially resected under the flaps. The flaps are trimmed to re-drape the remaining bone.

OBSERVATION AND RESULTS:

STUDY DESIGN: A Comparative surgical study with 60 patients randomized in to 2 groups with 30 in Group A (total turbinectomy) and 30 patients in Group B (turbinoplasty) is undertaken to study the incidence of complications.

Table 1: Showing the age distribution of the patients.

Age in years	Group A		Group B	
	No	%	No	%
18-20	6	20.0	1	3.3
21-30	18	60.0	15	50.0
31-40	5	16.7	9	30.0
41-50	1	3.3	5	16.7
Total	30	100.0	30	100.0
Mean ± SD	26.43±6.73		31.70±9.04	

Table 1 shows, the age distribution of the patients, which varied between 18-50 years in the study with the average of 26.43 ± 6.73 in Group A and 31.70 ± 9.04 in Group B.

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Table 2: Showing the gender distribution of the study.

Gender	Group A		Group B	
	No	%	No	%
Male	22	73.3	17	56.7
Female	8	26.7	13	43.3
Total	30	100.0	30	100.0

Table 2 shows the gender distribution in the study, - In Group A: 73.3 % are males, 26.7% are females and in Group B: 56.7% are males and 43.3% are females.

Table 3: Shows the spectrum of the clinical presentation.

Clinical Diagnosis	Group A		Group B	
	No	%	No	%
DNS B/L with HIT	28	93.0	30	100.0
SINUSITIS with HIT	1	3.3	0	0.0
SPUR with HIT	1	3.3	0	0.0
TOTAL	30	100.0	30	100.0

Table 3 shows the spectrum of the clinical presentation, deviated nasal septum with hypertrophy is the single most common complaint in the patients of both groups affecting all the 58 patients. Sinusitis with HIT affecting 1 patient in group A. Spur with hypertrophy inferior turbinate [HIT] affecting 1 patient in group B.

Table 4: Shows indication for total turbinectomy.

Indication	Number of patients	%
HEADACHE	1	3.3
NASAL OBSTRUCTION	29	96.7
TOTAL	30	100.0

Table 4 shows indication for total turbinectomy, nasal obstruction is the single most common complaint in 29 patients (96.7%). 1 patient had headache.

Table 5: Shows indication for turbinoplasty.

Indication	Number of patients	%
HEADACHE	0	0.0
NASAL OBSTRUCTION	30	100.0
TOTAL	30	100.0

Table 5 shows indication for turbinoplasty, nasal obstruction is the single most common complaint in 30 patients (100 %).

Table 6- shows comparison of Post-op complications between two groups.

Complications	Group A (n=30)	Group B (n=30)	P value
Bleeding	2(6.7%)	0	0.492
Crusting	8(26.7%)	1(3.3%)	0.026*
Synechae	4(13.3%)	0	0.112
Headache	0	0	-

Table 6 shows comparison of Post-op complications between two groups,

1. Bleeding : In group A 2 patients (6.7%) had bleeding during intra operative period. In group B non of the patients had significant bleeding.
2. Crusting : In group A 8 (26.7%) patients had crusting. In group B 1 patient (3.3%) had crusting
3. Synechae : In group A 4 patients (13.3%) had synechae on follow. In group B non of the patients had synechae.
4. Headache: Was not reported in either group.

Table 7- shows the recurrence of symptoms in the study groups.

Recurrence	Group A (n=30)	Group B (n=30)
Yes	0	6(20.0%)
No	30(100.0%)	24(80.0%)
Inference	Incidence of recurrence are significantly more in Group B compared to Group A	

Table 7 shows the recurrence of symptoms in the study groups, the incidence of recurrence of nasal obstruction is 20% in group B patients as compared to non in group A.

DISCUSSION:

The aim of turbinate surgery is to reduce the size of the inferior turbinates in order to create sufficient space (5). More than 10 surgical techniques have been used over decades to treat hypertrophy of the inferior turbinate, but there is no single complete therapy. The evidence supporting the efficacy of these procedures remains debatable. None of them are able to produce satisfactory long term results in pathological turbinate hyperplasia for reasonable number of patients. In addition, the evaluation of the results is more difficult because of a lack of good evidence based on randomized controlled trials for inferior turbinate surgery detailing surgery with defined outcomes (6).

One of the main drawbacks of inferior turbinate surgery is a high rate of recurrence of symptoms with time. Most studies agree that total turbinate resection has long term effectiveness (7,8,9).Total turbinectomy is not recommended as the method of choice due to potential adverse effects and it is considered carefully. Total turbinectomy is considered if all other treatment attempts do not succeed (10). According to a study, inferior turbinoplasty is the best method of turbinate reduction with good results and least complications.(11)

One of the aims of the study was to evaluate the patient's subjective symptoms and adverse effects of the surgical procedure and compare the outcome. Our investigation revealed the following observations.

The result of this study is consistent with Mabry (1988) report, which says that inferior turbinoplasty is not sufficient to alleviate the nasal obstruction associated with posterior tip enlargement and reported 25% return of nasal blockage postoperatively. (5)

The most common complication noted was bleeding in 2 patients (6.7%), who underwent total turbinectomy. The bleeding was managed by anterior nasal packing no other intervention was required. Crusting was noted in 8 (26.7%) patients who had undergone total turbinectomy and 1 patient (3.3%), who had undergone turbinoplasty. Nasal douching and endoscopic suction clearance was all that was required to reduce the crusting. Synechiae occurred in 4 patients (13.3%) following total turbinectomy and in none of the patients who had undergone turbinoplasty. Synechiae was managed by releasing it after packing the nose with local anaesthesia.

CONCLUSION

Both the total turbinectomy and turbinoplasty have comparable success rates in experienced hands, but the amount of inferior turbinate removed by total turbinectomy is more substantial compared to turbinoplasty. Turbinoplasty gives symptomatic relief in the immediate post operative period but is less effective as compared to total turbinectomy on long term basis. Total turbinectomy is considered if all other treatment attempts do not succeed.

DISCLOSURES:

(a) Competing interests/Interests of Conflict- None
(b) Sponsorships – None
(c) Funding - None
(d) Written consent of patient- taken
(e) Animal rights- Not applicable

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