Scholars Journal of Applied Medical Sciences (SJAMS) **ISSN 2320-6691 (Online)**
Sch. J. App. Med. Sci., 2016; 4(2C):489-493 **ISSN 2347-954X (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com DOI: 10.36347/sjams.2016.v04i02.034

Original Research Article

Efficacy of partial inferior turbinectomy in the treatment of inferior turbinate hypertrophy

Dr. Vinay S Bhat[1], Dr. Ravi KS[2]
[1,2]Assistant Professor, Department of ENT and Head & Neck surgery, Adichunchanagiri institute of Medical Sciences B. G Nagara, Nagamangala Taluk, Mandya District, Karnataka, Karnataka, India 571448

***Corresponding author**
Dr. Vinay S Bhat
Email: drvinaybhat@gmail.com

Abstract: To study causes of hypertrophied inferior turbinate, results of its surgical management by partial inferior turbinectomy and complications of this surgical procedure. Patients with symptomatic hypertrophied inferior turbinate who were willing to undergo partial inferior turbinectomy were included in the study. Patients were followed up after 2 weeks, 2 months and 6 months. Subjective improvement was assessed by using a questionnaire and nose was clinically examined to rule out any complications. In results Out of 100 patients included in the study 80% of the patients had complete relief from nasal obstruction after period of six months. Intra operative hemorrhage was the most common complication seen in 19% of the patients followed by synichae (16%), crusting (14%) and infection (5%). In conclusion the Partial inferior turbinectomy is a safe and effective procedure in the management of symptomatic inferior turbinate hypertrophy. Most of the complications are easily manageable and do not have long term consequences.
Keywords: turbinectomy, surgical management, synichae.

INTRODUCTION

Prolonged perceived nasal obstruction resulting from inferior turbinate hypertrophy (IHT) is a common complaint encountered in Otorhinolaryngology practice. Several causes may induce significant hypertrophic changes of the inferior turbinate (IT) including perennial allergic rhinitis and non allergic rhinitis also the clinical observation of compensatory contralateral inferior turbinate enlargement in patients with septal deviations is supposedly common. A wide variety of surgical procedures like partial resections, sub mucous resection, electrocautery, sub mucous diathermy, cryosurgery, laser ablation and endoscopic resection have been performed but results have been universally unsatisfactory. This study was undertaken to evaluate the efficacy of partial inferior turbinectomy procedure which is by far most commonly performed procedure and requires very minimal time and instrumentation.

Aims and objectives

To study causes of hypertrophied inferior turbinate, results of its surgical management by partial inferior turbinectomy and complications of this surgical procedure

MATERIALS AND METHODS

Source of data:

Data for this study was collected from patients attending Department of Otorhinolaryngology of our institution

Type of study:

Time bound cross sectional study

Inclusion criteria:

Patients presenting with nasal obstruction due to hypertrophied inferior turbinate

Exclusion criteria:

- Patients below age of 10 years
- Patients associated with nasal polyposis, tumors of nose and granulomatous diseases of
- nose and paranasal sinuses
- Any patient not willing to undergo surgery

Method of data collection:

A total of 100 patients who presented with nasal obstruction due to hypertrophied inferior turbinate were chosen for study. All cases were diagnosed after taking a detailed history regarding nasal obstruction and associated symptoms like nasal discharge, headache and sneezing.

A thorough clinical examination was done. Severity of nasal obstruction was assessed subjectively. Only patients who have diagnosed to have hypertrophied inferior turbinate secondary to deviated nasal septum, allergic rhinitis and non allergic rhinitis not resolving after initial therapy with antihistamines, nasal decongestant drops and intranasal steroids were included in the study.

Patients were then subjected to various investigations like Hb%, BT, CT, urine examination, AEC, X-Ray of paranasal sinuses and serological investigations like HIV 1&2 and HBSAg. ECG was taken for patients above 35 years of age as per hospital protocol. Fitness for surgery was taken from physician whenever necessary. Written informed consent was taken from all the patients undergoing surgery.

All patients underwent partial turbinectomy of hypertrophied inferior turbinate under general anesthesia with or without septoplasty. Turbinectomy included anterior 2/3rd of turbinate and all the layers including the bone were excised during the procedure

The patients who underwent turbinectomy were post operatively assessed for the complications like hemorrhage, crusting, synichae and infection. The patients were then assessed subjectively after 2 weeks, 2 months and 6 months. The patients answered questionnaire consisting of the questions regarding subjective improvement of their symptom of nasal obstruction (free breathing, significant improvement, mild improvement and no improvement)

RESULTS

In our study all the patients presented with nasal obstruction i.e. 100%. nasal discharge was present in 26 patients i.e. 26%. Headache was present in 15 patients i.e. 15% while sneezing was present in 32 patients i.e. 32% (Table 1)

Table-1:

COMPLAINTS	**PATIENTS**	
	NUMBER	**PERCENTAGE**
NASAL OBSTRUCTION	100	100%
NASAL DISCHARGE	26	26%
HEADACHE	15	15%
SNEEZING	32	32%

In our study 66 patients i.e. 66% were diagnosed to have hypertrophied inferior turbinate secondary to deviated septum (compensatory hypertrophy). 34 patients i.e. 34% had allergic rhinitis and associated inferior turbinate hypertrophy. None of the patients had non allergic rhinitis (Table 2)

Table 2

CLINICAL DIAGNOSIS	**PATIENTS**	
	NUMBER	**PERCENTAGE**
DEVIATED NASAL SEPTUM WITH COMPANSATORY HYPERTROPHY	66	66%
ALLERGIC RHINITIS	34	34%
NON ALLERGIC RHINITIS	0	0%

66 patients i.e. 66% showed unilateral inferior turbinate hypertrophy and 34 patients i.e. 34% showed bilateral inferior turbinate hypertrophy. Its notable that all of the patients with allergic rhinitis showed bilateral inferior turbinate enlargement whereas all the patients with deviated nasal septum showed unilateral inferior turbinate hypertrophy opposite the side of the deviation (Table 3)

Table 3

HYPERTROPHY	**PATIENTS**	
	NUMBER	**PERCENTAGE**
UNILATERAL	66	66%
BILATERAL	34	34%

None of the patients included in the study had free breathing (no difficulty). 8 of the patients i.e. 8% had mild difficulty on effort whereas 27 patients i.e. 27% had marked difficulty on effort. 65 patients i.e. 65% had difficulty at rest (Table 4)

Table 4

STATE OF NASAL BREATHING	PATIENTS	
	NUMBER	PERCENTAGE
NO DIFFICULTY	0	0%
MILD DIFFICULTY	8	8%
DIFFICULTY ON EFFORT	27	27%
DIFFICULTY AT REST	65	65%

66 patients i.e. 66% underwent septoplasty with turbinectomy on one side. 6 patients i.e. 6% underwent septoplasty with bilateral turbinectomy. 28 patients i.e. were treated with bilateral turbinectomy alone; whereas none of the patients underwent only unilateral turbinectomy (Table 5)

Table 5

PROCEDURE	PATIENTS	
	NUMBER	PERCENTAGE
SEPTOPLASTY WITH UNILATERAL TURBINECTOMY	66	66%
SEPTOPLASTY WITH BILATERAL TURBINECTOMY	6	6%
BILATERAL TURBINECTOMY	28	28%
UNILATERAL TURBINECTOMY	0	0%

33 patients i.e. 33% patients reported fee breathing after 2 weeks of follow up where as 35 patients i.e. 35% reported significant improvement in breathing. Mild improvement was noted in 28 patients i.e. 28% and no improvement was seen in 4 patients i.e. 4%. (Table 6)

Table 6

STATE OF NASAL BREATHING	PATIENTS	
	NUMBER	PERCENTAGE
FREE BREATHING	33	33%
SIGNIFICANT IMPROVEMENT	35	35%
MILD IMPROVEMENT	28	28%
NO IMPROVEMENT	4	4%

58 patients i.e. 58% reported free breathing at 2 months after surgery. 24 patients i.e. 24% reported improvement compared to previous visit i.e. at 2 weeks. 18 patients i.e. 18% reported no improvement compared to prior examination. None of patients in present study reported worsening of their symptoms compared to previous visit. (Table 6)

Table 6

STATE OF NASAL BREATHING	PATIENTS	
	NUMBER	PERCENTAGE
FREE BREATHING	58	58%
IMPROVED COMPARED TOPRIOR EXAMINATION	24	24%
NO IMPROVEMENT COMPARED TO PRIOR EXAMINATION	18	18%
WORSE WHEN COMPARED TO PRIOR EXAMINATION	0	0%

After 6 months of follow up 80 patients i.e. 80% reported free breathing and 17 patients i.e. 17% reported improvement compared to prior examination. Only 3 patients i.e. 3% had no improvement compared to prior examination. None of the patients reported worsening of their symptoms. (Table 7).

Table 7

STATE OF NASAL BREATHING	PATIENTS	
	NUMBER	PERCENATGE
FREE BREATHING	80	80%
IMPROVED COMPARED TOPRIOR EXAMINATION	17	17%
NO IMPROVEMENT COMPARED TO PRIOR EXAMINATION	3	3%
WORSE WHEN COMPARED TO PRIOR EXAMINATION	0	0%

Hemorrhage during or after surgery was seen in 19 patients i.e. 19%. Infection of the operated area was seen in 5 of the patients i.e. 5%. Crusting was observed in 14 patient's i.e. 14% during follow up and synichae was seen in 16 patient's i.e.16%. (Table 8)

Table 8

COMPLICATIONS	PATIENTS	
	NUMBER	PERCENTAGE
HEMORRHAGE	19	19%
INFECTION	5	5%
CRUSTING	14	14%
SYNICHAE	16	16%

DISCUSSION

Nasal obstruction caused by hypertrophied inferior turbinate is frequently encountered in otorhinolaryngology practice. There are different etiologies for its onset e.g. nasal allergy, compensatory inferior turbinate hypertrophy, vasomotor rhinitis etc. different modalities of treatment have been instituted for such condition [1]. most cases are mild and respond to antihistamines, decongestant nasal drops or allergy desensitization but some cases surgery is required.

Surgical reduction of the turbinate can be performed by several different techniques [2-4]. One method is lateral out fracturing of the inferior turbinate at its attachment. Goode argued that the turbinate returns to its original position and the benefits are temporary [5-6].

Destructive procedures, including electrocautery, cryosurgery or laser surgery have been used to reduce the bulk of the turbinate's by inducing scarring or by direct destruction. These procedures can be performed under local anesthesia and are technically simple to perform, but have available long term success and significant risks, including necrosis of the conchal bone, eschar formation and hemorrhage.

Long term studies of partial resection of the inferior turbinates have cited nasal airway improvement ranging from 41% to 90% [7] Complications including prolonged crusting and bleeding occur relatively frequently. Hemorrhage requiring anterior nasal packing or operative cautery of bleeding vessels has been reported to occur in upto 10% of cases [8]. The total inferior turbinectomy procedure is rarely performed because of the risk of atrophic rhinitis and empty nose syndrome.

Usually turbinate surgery accompanies nasal septal surgery. Marias *et al.;* compared the results of septoplasty alone and septoplasty combined with turbinate surgery in terms of changes in minimal cross sectional area and patients satisfaction. Patients who had both procedures performed had significantly greater satisfaction than those who had septoplasty alone [9].

In our study there was significant improvement in patients who underwent partial inferior turbinectomy with minimal complications. Most of the complications were reversible and did not have any impact on long term outcome.

This study once again confirms that partial inferior turbinectomy is quick, effective and safe procedure if done in selected patients. It is very economical and does not require any specialized instrumentation. One should consider doing partial turbinectomy in patients with significant inferior turbinate hypertrophy with clinical symptoms of chronic nasal obstruction.

CONCLUSION

In this study the indications, outcome and complications of partial inferior turbinectomy were studied. It was found that partial inferior turbinectomy for cases of hypertrophied inferior turbinate secondary to deviated nasal septum and allergic rhinitis is effective in relieving symptom of nasal obstruction. Post operative results of this procedure were found to significantly improve the nasal airway of the patients.

This procedure can be performed under local as well as general anesthesia and it does not require expensive instrumentation. Complications arising from this procedure are fewer and can be managed effectively with good post operative follow up and good patient education regarding nasal douching and hygiene. This procedure is safe and effective in treatment of hypertrophied inferior turbinate where medical management fails to relieve the symptoms of the patient.

REFERENCES

1. Baig M, Akhtar FP; Management of the hypertrophied inferior turbinate. J Rawal Med Coll 2004; 8(2): 75-77.
2. Azeem QA, Khalil H, Barlas NB; Is total inferior turbinectomy a reliable answer for nasal obstruction caused by hypertrophied inferior turbinates? Pak Postgrad Med J2002; 13:120.
3. Musharaf MB, Faheem PA; Management of the hypertrophied inferior turbinate. Professional Med J 2000; 7:127-9.
4. Magarey MJ, Jayaraj SM, Saleh HA, Sandison A; Ball valve nasal obstruction following incomplete inferior turbinectomy. J Laryngol Otol 2004; 118:146-7.
5. MD, Rossato M, Anselmo-Lima WT; Clinical5and ultra structural study after partial inferior turbinectomy. Braz J Otorhinolaryngol2006; 72:609-16.
6. Qureshi N; Role of partial anterior inferior turbinectomy in nasal obstruction. J Rawal Méd Coll 2006; 10:70-2.
7. Azeem QA, Khalil H, Barlas NB; Is total inferior turbnectomy a reliable answer for nasal obstruction? Pak Postgrad Med J 2002; 13: 120.
8. Ahmad I, Raza N, Bashir T, Yaqoob M; Total inferior turbinectomy in the treatment of chronic nasal obstruction. Pak Postgrad Med J 2000; 11: 16-7.
9. Marais J, Murray JA, Marshall I, Douglas N, Martin S; Minimal cross sectional areas, nasal peak flow and patients satisfaction in septoplasty and inferior turbinectomy. Rhinology 1994; 32: 145-7.