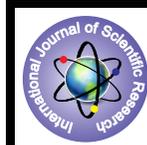


Effect of septal surgery on compensatory hypertrophy of inferior turbinate.



Medical Science

KEYWORDS : Nasal septal surgery ; Turbinate hypertrophy; Turbinate surgery.

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ABSTRACT

In the present study a comparison is made between septal surgery alone and septal surgery in combination with turbinate surgery. 105 patients who underwent septal surgery for septal deviation were assessed post-operatively. In 63 patients turbinate surgery was performed in the form of either submucous diathermy (SMD) or partial inferior turbinectomy (PIT). Patients were evaluated upto 6 months after surgery. When septal surgery alone was performed nasal airway was improved in 66.67 percent of patients. Septal surgery with SMD showed improvement in 95.65 percent of patients. Septal surgery with PIT showed improvement in all patients.

Introduction:

Chronic nasal obstruction due to nasal septal deformity is a frequent clinical entity. Septal surgery is one of the most common procedures performed by otorhinolaryngologists today. Most

of the times septal surgery alone, either SMR or septoplasty is performed on these patients. The limitation of this procedure is reflected in the literature by a failure rate around 20-40 %. (4, 5, 7, 12, 14) Compensatory hypertrophy of the inferior turbinate is the main cause of persisting nasal obstruction in these cases. In order to treat changes in the inferior turbinates effectively it is first useful to differentiate between pathological variants. (19) Various surgical procedures can be performed on hypertrophic inferior turbinates. Total inferior turbinectomy (10, 13) partial inferior turbinectomy (2, 15), cryosurgery of the inferior turbinate (1, 11) and submucous diathermy (9) are all performed. However, the indications for turbinate surgery are not clear and can vary widely among different rhinosurgeons. The fact that several methods for turbinate reduction are used clearly demonstrates that there is no ideal technique which guarantees long term success, but which is linked with short term or long term complications. (21) In the present study, a comparison is made between septal surgery alone and septal surgery in combination with turbinate surgery. An effort is made to establish the indications for inferior turbinate surgery in the presence of different degrees of septal deviations.

Materials and Methods:

105 patients, 92 males and 13 females between 10 and 35 years of age (mean 23.14) were included in the study. They were patients with bilateral nasal obstruction. All of them had

different degrees of septal deviation in which indication for septal surgery was found. Patients with C - shaped deviation had unilateral hypertrophied inferior turbinate (JUT) and patients with

S - shaped deviation had bilateral HIT. The degree of hypertrophy of inferior turbinate was variable. In inferior turbinate hypertrophy, mucosal edema moves the head of turbinate antero-medially and shifts itself into nasal valve area. (20) Those who had an element of nasal allergy were not included in this study. Depending on the size of the HIT patients were divided into two groups. Group A consisted 42 patients who had partial nasal obstruction and minimal HIT. Group B consisted 63 patients who had severe nasal obstruction and gross HIT.

Operation:

Operations were performed under both general and local anaesthesia. Preoperatively, nose was packed with 4% lignocaine when done under local anaesthesia. In all cases infiltration was done with 1 % lignocaine with adrenaline. Septal surgery alone was

performed on Group A comprising 42 patients. 33 of them underwent septoplasty and 9 of them underwent SMR. Septal surgery with turbinate surgery was performed on Group B comprising 63 patients. 19 of them underwent SIVIR and 44 of them underwent septoplasty. Turbinate surgery was done in the form of partial inferior turbinectomy (PIT) and submucous diathermy (SMD). PIT was performed on 40 patients and SMD was performed on 23 patients. PIT (2) was performed using angled turbinectomy scissors. Resection included both bone and soft tissues. SMD (9) was performed using long diathermy probes. Depending on the size of the hypertrophied turbinate, the probe was applied 2 to 4 times. Nose was packed with soframycin soaked gauze. In all the patients pack was removed after 24 hours except in PIT patients where pack was removed after 48 hours. Patients were discharged the following day.

Post operative evaluation:

All the patients were asked to come for regular check-up upto 6 months after surgery.

Post operative complications were recorded.

Results:

Post operative morbidity:

Intra nasal packing caused discomfort and head ache in many patients. Bleeding was observed in 6 patients who underwent PIT (15 %). Synechiae formation was observed in 11 patients - 2 in Group A (4.76%), 3 in Group B with SMD (13.04%) and 6 in Group B with PiT

(15 %). Atrophic changes were not seen in turbinectomy group even after 6 months (Table I).

Post operative nasal airway assessment:

Nasal airway assessment was done in all patients by anterior rhinoscopy and patient questionnaire. The patency of the nasal airway was graded on 0-3 scale as follows: 0= Nasal breathing became worse; 1 = No change; 2 = Partial improvement; 3 = Significant improvement.

Assessment of nasal airway upto 6 months after surgery revealed following facts. In Group A where septal surgery alone was performed nasal airway was improved in 28 patients (66.67%) and in 14 patients (33.33 %) there was no improvement. In 2 patients it became worse due to increased hypertrophy of the inferior turbinate. In Group B where septal surgery along with SMI was performed nasal airway was improved in 22 patients (95.65%) and in 1 patient (4.35%) there was no improvement due to persistent hypertrophy of inferior turbinate. In Group B where septal surgery along with PiT was performed, nasal airway was improved in all 40 patients (100 %) (Table II).

Post operative nasal examination:

In post operative nasal examination, a wide nasal cavity was found in 28 of Group A patients (66.67 %) and 62 of Group B patients (98.41 %). Rest of the patients showed no improvement. In other words, wide nasal cavity was found in patients with improved nasal airway after surgery. (Table)

	Group A	Group B SMD	Group B PIT
Post-operative bleeding	0	0	6(15%)
Synechiae	2 (4.76%)	3 (13.04 %)	6(15%)
Atrophic change	0	0	0

Discussion:

Compensatory hypertrophy of inferior turbinate is a common entity in the presence of nasal septal deviation. But literature reveals relatively few papers on the effect of septal surgery

on compensatory hypertrophy of inferior turbinate. Septal surgery performed alone shows a failure rate around 20 -40 % (4, 7, 12, 14, 16). Compensatory hypertrophy of the inferior turbinate is the main cause of persisting nasal obstruction in these cases. Acoustic rhinometric

studies show persistence of airway obstruction on the opposite side of septal deviation when no

turbinate surgery was performed (6, 7, 8). Nasal breathing significantly improved when turbinate surgery was performed (3, 14).

In the present study turbinate surgery was performed on septal deviation patients with gross hypertrophy of inferior turbinate. 62 out of 63 patients showed improvement in nasal airway (98.41 %).

Septal surgery alone was performed on patients with minimal hypertrophy of inferior turbinate. In spite of minimal hypertrophy only 28 out of 42 patients showed improvement in nasal airway (66.67 %).

Though various surgical procedures have been described on hypertrophic inferior turbinate – partial inferior turbinectomy, inferior turbinoplasty, cryoturbinectomy, laser turbinectomy. (18). Submucous diathermy (9) and partial inferior turbinectomy (2, 15, 17) are practised in this study. The main complications of PIT was post operative bleeding (15 %) and synechiae formation (15 %). Synechiae formation was observed in 13.04 % of SM] patients. Atrophic changes as feared by many surgeons was not reported in any of the PIT patients even after 6 months. Improvement in nasal airway was 100 % in PIT patients compared to 95.65 % of SMD group.

Table III**Subjective assessment of nasal cavity: 6 months after surgery.**

	Group A	Group B SMD	Group B PIT
Became worse	28(66.67%)	22(95.65%)	40(100%)
Same or narrowed	14(33.33%)	01(4.35%)	0(0%)

Conclusions:

1. Nasal septal surgery performed alone will have a failure rate of 33.33 %.
2. Turbinate surgery is advisable on compensatory hypertrophy of inferior turbinate in cases of nasal septal deviations.
3. Complications like bleeding and synechiae formation are slightly more in PIT. But compared to SMD , relief of nasal airway obstruction is definitely better with PIT.

REFERENCE

- Bumsted.R.M. (1984) Cryotherapy for chronic vasomotor rhinitis :technique and patientselection for improved results.Laryngoscope 94 :539 - 544. | 2. Courtiss.E.H. ,Goldwyn.R.M. ,O'Brien JJ(1978) Resection of obstructing inferior nasal turbinates.Plastic and Reconstructive Surgery;62 :249 -255. | 3. Courtiss.E.H. (1988) Diagnosis and treatment of nasal airway obstruction due to inferior turbinate hypertrophy. Clinical Plastic Surgery.15 :11 -13. | 4. Dommerby.H. ,Rasmussen.O.R. ,Rosborg J. (1985) Long term results of septoplastyoperations. Journalfor Oto-Rhino-Laryngology and Its Related Specialities. 47: 15 1-157. | 5. GrymerL.F. ,Rosborg .3. (1987) The aging nose : Long term results following plastic septalsurgery.The Journal of Laryngology and Otolgy. 101: 363-365. | 6. GrymerL.F. ,Hilberg .0. ,Elbrond.O. ,Pedersen.O.F. (1989) Acoustic rhinometry : evaluationof the nasal cavity with septal deviations , before and after septoplasty. Laryngoscope. 99:1180- 1187. | 7. GrymerL.F. ,Jllum.P. ,Hilberg.O. (1993) Septoplasty and compensatory inferior turbinatehypertrophy : a randomised study evaluated by acoustic rhinometry. The Journal ofLaryngologyand Otolgy.107 : 413 - 417. | 8. Hilberg.O.,Grymer .L.F. ,Pedersen.O.F. ,Elbrond.O. (1990) Turbinate hypertrophy :evaluationof the nasal cavity by acoustic rhinometry. Archives of Otolaiynology,Head and Neck Surgery.116:283-289. | 9. McCombe.A.W. ,Cook.J. ,Jones.A.S. (1992) A comparison of laser cautery and submucosaldiathermy for rhinitis.Clinical Otolaryngology. 17 : 297 - 299. | 10. Ophir.D. ,Shapira.A. ,Marshak.E. (1985) Total inferior turbinectomy for nasal airwayobstruction. Archives of Otolaryngology ,Head and Neck Surgery. 111: 93 - 95. | 11. Ozenberger,J.M. (1970) Cryosurgery in chronic rhiritis.Laryngoscope. 80 : 723 - 734. | 12. Peacock.M.R.(1981) Submucous resection of the nasal septum. The Journal ofLaryngologyand Otolgy. 95: 341 - 356. | 13. Salam.M.A. ,Wengraf .C. (1993) Concho-antropexy or total inferior turbinectomy forhypertrophy of the inferior turbinates ? A prospective randomized study. The Journal ofLaryngology and Otolgy. 107: 1125 - 1128. | 14. Samad.T. ,Stevens.H.E. ,Maloney.A.(1992) The efficacy of nasal septal surgery. Journal ofOtolaryngology. 21: 88-9 1. | 15. Saunders.W.H. (1982) Surgery of the inferior nasal turbinate.Annals of Otolgy,Rhinologyand Laryngology. 91 :445 -447. | 16. Sherman.A.H. (1977) A study of nasal airway function in the postoperative period of nasalsurgery. Laryngoscope. 87 : 299 - 303. | 17. YosephRakover, Gabriel Rosen.(1996) A comparison of partial inferior turbinectomy andcryosurgery for hypertrophic inferior turbinate. The Journal of Laryngology and Otolgy. 110:732 -735. | 18. John Mathai (2004) : Inferior turbinectomy for nasal obstruction. Review of 75 cases. Indian Journal of Otolaryngology and Head and neck surgery 56:23-26 | 19. Huizing E.H., de Grott J A. : Surgery of nasal cavity in : Huzing E.H. de Grott, Editor. Functional reconstructive nasal surgery. Stuttgart, Network :Thime Medical Publishers; 2003. P8 | 20. Berger G, Gass S, Ophir D. The histopathology of hypertrophic inferior Turbinate. Arch Otolaryngol Head and Neck surgery. 2006; 132 : 588-594. | 21. Passali D, Passali F M, Passali G C, Damiani V, Bellussil. Treatermnet of inferior turbinate hypertrophy: a randomized clinical trial. Ann OtolRhinolLaryngol. 2003; 112:683:688. |