



CROSS SECTIONAL STUDY TO EVALUATE THE EFFECTIVENESS OF SUBMUCOSAL DIATHERMY IN TREATMENT OF ALLERGIC RHINITIS

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ABSTRACT

BACKGROUND: Hypertrophy of inferior turbinate is one of the main effects of allergic rhinitis which leads to nasal obstruction. In order to reduce this change steroids are used to reduce the late phase effects of allergic rhinitis.

OBJECTIVE: Evaluate effectiveness of submucosal diathermy for treatment of hypertrophy of inferior turbinate.

MATERIAL & METHODS: Study of 50 patients presented with nasal obstruction and allergic rhinitis between age group of 20 and 50 years between January 2017 to January 2019.

RESULTS: All the patient were followed for 2 years. 40 patients were relieved of nasal obstruction completely after 3 months and 6 patients were relieved after 2 months and 4 patients did not get any relieve after 6 months. All the 46 patients had relieve from nasal obstruction for 2 years.

CONCLUSION: Submucosal diathermy for hypertrophic inferior turbinate secondary to allergic rhinitis is an effective and cheap alternative treatment for nasal obstruction.

KEYWORDS : Effectiveness, Submucosal diathermy,

INTRODUCTION:

Hypertrophy of inferior turbinate is one of the main effects of allergic rhinitis which leads to nasal obstruction. In order to reduce this change steroids are used to reduce the late phase effects of allergic rhinitis¹. However, surgical treatment is one of the alternative for nasal obstruction where long term steroid sprays are advocated. Sometimes steroids are ineffective or effective for short duration only.^{2,3} Various methods have been used in turbinate reduction including radiofrequency ablation, ultrasound, laser and monopolar submucosal diathermy. Monopolar submucosal diathermy is most cost effective treatment for inferior turbinate hypertrophy secondary to allergic rhinitis.

MATERIAL & METHODS:

All the patients who came with complaints of nasal complaints and allergic rhinitis to our centre were subjected to imaging studies and diagnostic nasal endoscopy & which were found to be due to inferior turbinate hypertrophy between age group of 20 years and 50 years were included in the study. A total of 50 patients were observed in this study. Out of which 30 were male and 20 were female patients.

Patients were advised to use nasal decongestant spray 1 puff three times a day for one week and to assess the type of hypertrophy and to know the effect of decongestant drops in hypertrophy turbinate. All the patients were suggested for submucosal diathermy and undergone all the routine investigations and prepared for SMD under general anaesthesia.

Patients with tracheal intubation under general anaesthesia the turbinates were injected with adrenaline and saline. The syringe needle connected with monopolar cautery was inserted deep to the conchal bone and withdrawn gradually while the submucosa is cauterised for 5 seconds, then the procedure repeated for at least 4 different areas around turbinate.

The strength and length of cauterisation was judged by the amount of discoloration of turbinate. Little bleeding was arrested by adrenaline soaked gauze pack. Postoperative follow up schedule was as follows: 2 days, 5 days, 2 weeks, 4 weeks, 3 months and 6 months. During the first week alkaline nasal douch was performed by the surgeon, then by the patient followed by steroid cream application, twice a day for 3 weeks.

RESULTS:

All the patients with allergic rhinitis were complaining of chronic nasal obstruction. Other presenting symptoms were mouth breathing, sore throat, bad mouth odour, sneezing nasal itching and headache. 40 patients showed subjective and objective excellent improvement after 3 months follow up. Their complaints of nasal obstruction disappeared which was examined by anterior rhinoscopy, CT PNS, nasal endoscopy. Six patients had improvement within 2 months only. Four patients did not improve subjectively and objectively even after 6 months.

DISCUSSION:

Inferior turbinate hypertrophy secondary to allergic rhinitis is the commonest cause for nasal obstruction⁴. The surgical management of enlarged inferior turbinates has been debated for more than 100 years. Several studies report subjectively good results for nasal obstruction in over 90 percent of cases, following inferior turbinate reduction in cases of minor or no anterior septal deviation, both in the short⁵ and long term⁶.

Monopolar diathermy is an old technique for the reduction of submucosal tissue of the inferior turbinate, but still widely practiced. The bone and/or mucosa may be enlarged, but what constitutes pathologic or normal is not well defined and therefore there is controversy over the management of the turbinates in symptomatic subjects⁷. The hypertrophy of the inferior turbinate is either due to increased thickness of the medial mucosal layer which could be attributed to hypertrophy of the lamina propria that houses sub epithelial inflammatory cells, venous sinusoids and submucosal glands or it could be due to an increase in the size of the bony structure of the inferior turbinate.

Only patients with inferior turbinate hypertrophy due to thickness of mucosal layer could benefit from SMD. If the hypertrophy is due to an increased in bony structure, only turbinoplasty is the solution to improve the airway⁸. Submucosal diathermy of inferior turbinate first documented in 1918. It works by shrinking the bulky space occupying hypertrophied inferior turbinate in the nasal cavity. It can be either done by general or local anaesthesia⁹. The effect of SMD is achieved through coagulation of the venous sinusoids with turbinates, leading to submucosal fibrosis¹⁰. In SMD, an area of coagulation necrosis is formed along the electrode passage, which is replaced with sclerotic connective

tissue providing a stable reduction of the enlarged turbinate^{11,12}. Talaat et al examined his patients histologically after SMD of the inferior turbinate one month after surgery and observed significant postoperative clinical and histopathological improvement in non allergic subjects, whereas improvement in allergic patients was less. In our study, 40 patients were completely relieved of nasal obstructive symptom in allergic rhinitis at 3 months and 6 patients at 2 months.

Irfan et al reported 50% improvement in their patients after one year and 36% after 6 months and 27% required other corrective surgery.

CONCLUSION:

In our study 92% of patients had excellent improvement after 1 year. Submucosal diathermy does not require costly instruments and safe, effective technique to reduce inferior turbinate hypertrophy in allergic rhinitis without affecting the turbinate mucosal function and to reduce nasal obstruction for short and long term basis.

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