Original Research Article

COMPARISON OF SUB MUCOSAL DIATHERMY AND PARTIAL RESECTION OF INFERIOR TURBINATE IN THE TREATMENT OF SYMPTOMATIC NASAL VALVE BLOCKAGE

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ABSTRACT

OBJECTIVEES: To evaluate the efficacy of sub mucosal diathermy (SMD) and partial resection of inferior turbinate (PRIT) in the treatment of symptomatic enlarged inferior turbinate.

STUDY DESIGN: Prospective,

METHODS: Sixty patents at age group 18 -56 yrs. with symptomatic enlarged inferior turbinate had given choices for SMD and PRIT. All the patients had history of failed medical treatment.

RESULTS: Each thirty patients underwent SMD (group I), PRIT (group II), eight patients of group l, have anterior nasal packing after surgery for bleeding. Four patients complained of excessive rhinorrhea for first 2 weeks while 4 patients of Group 1 complained of nasal blockage for 1 week even after intervention. In group 2, 8 patients have re-anterior nasal packing after pack removal. Both groups followed up for 6 months. 13 patients were lost in follow up, so excluded from the study. Following 6 months of follow up, 8 patient of group I had recurrence with nasal blockage and in gr. II none had recurrence.

CONCLUSION: PRIT is better than SMD in long course; nevertheless it should be reserved for failed SMD, not as a primary option. Ink described the nasal valve in 1903. The nasal valve is formed medially by the septum and laterally by the caudal edge of the upper lateral cartilage and it accounts for approximately 50% of total upper airway resistance. The anterior tip of the inferior turbinate is found in the nasal valve region, and hypertrophy of this structure can cause exponential increase in airway resistance.

KEYWORDS - Sub mucosal diathermy (SMD); Hearing; Partial resection of inferior turbinate (PRIT), Symptomatic enlarged inferior turbinate

INTRODUCTION

Nasal valve is area of greatest constriction throughout the entire respiratory tract; limited medially by the septum, inferiorly by the floor of the nose and by the anterior portion of inferior turbinate. Nasal valve is a dynamic valve as swelling of the venous erectile tissue of the inferior turbinate and nasal septum can cause complete obstruction

of the nasal passage. Enlargement of the inferior turbinate is mainly due to swelling of the sub mucosa and rarely due to enlargement of the bone itself. Hypertrophy of inferior turbinate caused by dilation of sub mucosal venous sinusoids is the cause in intrinsic rhinitis, and responds to decongestant[1]. Sometimes the inferior turbinate enlargement due to sub mucosal fibrosis does not respond to decongestant[2]. In few cases of inferior turbinare hypertrophy, the venous sinusoids become atonic and also do not respond to decongestant[3]. When inferior turbinate hypertrophy is symptomatic, it needs treatment. There are different modalities of treatment but most popular and effective are SMD and PRIT. This paper aims to compare the efficacy of these methods in the treatment of symptomatic inferior turbinate hypertrophy.

MATERIALS AND METHODS

All together 60 patients (36 women and 24 men) with symptomatic inferior turbinare hypertrophy were included for the study. The patients were of age group 18-56 and they had history of failed medical treatment. After counseling all the patients and discussing all the pros and cons of both surgical interventions, patients were given choices to select their surgical procedure themselves. 30 patients (24 women and 6 men) underwent SMD (sub mucosal diathermy) under sedation and given a tag Group 1, and 30 patients (12 women and18 men) underwent PRIT under general anesthesia and were given tag of Group 2. After surgical intervention in Group 1, nasal cavity were filled with antibiotic ointment and patients were discharged on the same day, whereas Group 2 patients were discharged after anterior nasal packing removal on the 3rd post-operative day. In both group broad spectrum antibiotic and NSAID were given.

RESULTS:

Group 1

- Out of 30 patients of Group 1 (SMD) 8 patients needed anterior nasal packing after surgical intervention and discharged then after.

- 4 patients complained of excessive rhinorrhoea for the first 2 weeks.

- 4 patients complained of nasal blockage just after the surgical intervention.

Group 2

- Out of 30 patients 8 had to have reanterior nasal packing after pack removal after 48 hours of operation, for the bleeding and their discharge was delayed.

- 3 patients complained of nasal dryness and excessive crusting for 2 months.

- Both the groups of patients were followed up regularly- weekly for the first 2 weeks, 2 weekly for one month, and then every month till 6 months.

- At the end of 6 months we lost 13 patients (7 of Gr1 and 6 of Gr2) and one patients of Group 2 died in road accident. At the completion of 6 months 8 patients of Group 1 had recurrence of nasal blockage and in Group 2 none had recurrence.

DISCUSSION

Symptoms of nasal obstruction may persist despite maximal medical management. In many patients who continue to complain of nasal obstruction, inferior turbinate hypertrophy can be confirmed by physical exam and rhinometry, though the latter is infrequently performed in clinical settings. It has been shown that inferior turbinate enlargement can prevent adequate medical management by preventing the transmission of topical steroids and topical antihistamines to the superior nasal cavity. So surgical procedures that reduce the size of the inferior turbinate can not only improve symptoms, but can also potentiate medical management of rhinitis. Numerous procedures exist for this purpose, and controversy abounds as to which is the best. There are very few randomized studies comparing different procedures to each other, and those that exist are generally not long-term studies. Procedures can be classified as those that address bony causes of nasal obstruction, and those that address mucous and sub mucous swelling. Patients with symptomatic nasal

obstruction due to sorts of medical treatment, some sort of surgical intervention is recommended. The classically performed procedure for inferior turbinate hypertrophy was total turbinate resection. This procedure involves clamping the inferior turbinate at its base to achieve haemostasis, followed by the use of nasal scissors or endoscopic instruments to resect the entire turbinate along its base. This procedure definitively widens the nasal airway and has been shown to be one of the most effective procedures in achieving long-term nasal patency, with a retrospective study by Ophir et al showing that 80% of 150 patients had subjectively improved nasal breathing and 91% had widely patent nasal airways at an average follow-up time of 2.5 years (range 1 to 7). The most common complication of total inferior turbinectomy appears to be haemorrhage. The procedure often requires nasal packing after completion. Also, nasal crusting, synechiae, and discomfort are frequent occurrences for several months afterward because of exposed bone at the lateral nasal wall.

A 1985 retrospective study by Moore et al condemned total inferior turbinectomy, reporting that 66 percent of their 18 patients had ozena, or advanced atrophic rhinitis characterized by chronic crusting and dysosmia even leading to anosmia due to destruction of olfactory cells. Others, such as Ophir, have refuted this notion and report that atrophic rhinitis is a rare and even insignificant complication of total turbinectomy. However, many otolaryngologists today have abandoned this procedure. Partial turbinectomy is a procedure developed to remove the anterior part of the inferior turbinate. It is directed at relieving obstruction at the nasal valve, while leaving a portion of the turbinate to continue its function of air conditioning. Nasal patency rates show great subjective improvement immediately after surgery, with one retrospective study suggesting that 70 of 76 patients reporting improvement at about 8 years[6]. However, other studies have suggested decreased effectiveness with time[7]. Similar to non resection procedures, complications are similar to those for total Turbinectomy though the crusting is usually less severe, as is the risk of hemorrhage. Atrophic rhinitis with this procedure is rare. Electrocautery has been used successfully in the ablation of inferior turbinates. Two forms of the procedure exist - submucosal diathermy, and mucosal cautery.

Both procedures can be performed in the office under local anesthesia. Mucosal cautery, as the name implies, utilizes the electrocautery device to burn from posterior to anterior along the inferior turbinate. This causes more pain and greater risk of hemorrhage. It also damages mucosa with subsequent increase in mucosal transport time. Submucosal diathermy avoids those risks. It involves inserting a bipolar cautery to cause a submucosal lesion along the inferior border of the inferior turbinate. The device frequently has two sharp points that are used to pierce the inferior portion of the inferior turbinate SMD- is an effective method of treatment for symptomatic inferior turbinate hypertrophy (Wenself, gleasa and stodlan. 1986). It reduces nasal blockage by 65 %(Jones et al 1989), but in our study it is 60%. Many rhinologist advocate SMD in cases where inferior turbinate shrinks with an alpha receptor agonist (Jones et al 1989). But nevertheless SMD in our study 4 complained of excessive rhinorrhoea for the first 2 weeks, then goes off automatically. Another 4 patients from the very beginning complained nasal blockage, initially it may due to post-operative oedema, but as symptom lingers on for more than 2 months it indicate its negative aspects. In 6 months follow up we have 8 cases of failure, the cause may be fibrosis in the submucosal plane.

Other popular method of surgical intervention is resection of inferior turbinate- partial resection or radical resection. PRIT is preferred one as radical trimming can cause unwanted results as atrophic rhinitis (Martinez et al 1983). In our study 3 patients complained of excessive crusting for first 2 months, and then we treated with nasal douching, which eventually disappeared. Up to 6 months we didn't noticed any cases of atrophic rhinitis and we had no recurrence of nasal blockage in Group 2 (PRIT). It shows that

anterior trimming is equally effective in reducing nasal blockage as radical operation Weight, Jones, Clegg 1988) with less side effective. As PRIT has no recurrence of nasal blockage, and had nasal crusting in 3 patients (15%) in the initial period in our study; PRIT is a safe and effective procedure with minimal side effect (weight, Jones and Buckingham, 1990).

CONCLUSION:

SMD should establish as a procedure in all patients with inferior turbinate hypertrophy unresponsive to medical treatment. If inferior turbinate hypertrophy recurs following SMD, partial resection of inferior turbinate (PRIT) should be carried out.

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