Radiofrequency Coblation Versus Surface Bipolar Electrocautery for Treatment of Hypertrophid Inferior Turbinate

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ABSTRACT

Objective: To compare surface bipolar electrocautery with radiofrequency coblation in the treatment of inferior turbinate hypertrophy. Patients and Methods: This clinical trial study was conducted at ENT department, Faculty of Medicine, Zagazig University Hospitals in the period from May 2020 to Jul 2021, included 34 patients with nasal obstruction due to hypertrophied inferior turbinates resistant to medical treatment for a period not less than six weeks. The first group include 17 patients with HIT treated by Bipolar cauterization and second group include 17 patients with HIT treated by Radiofrequency coblation. Results: This study showed that nasal obstruction showed significant improvement in both groups post operatively. There was no significant difference between both regarding nasal obstruction although there was improvement in objective evaluation. In addition, there were no crustation observed in nasal mucosa among patient. The Discharge and crustation were significantly associated with Bipolar Group. Conclusions: Both techniques have proven to be equally effective. In both the groups, Radiofrequency is considered to be more accurate, Bipolar electrocautery and Radiofrequency volumetric tissue reduction are equally effective in improving both the subjective and objective nasal obstruction.

Keywords: Radiofrequency, Bipolar electrocautery, nasal obstruction, turbinate hypertrophy.

INTRODUCTION

Inadequate turbinate hypertrophy is a key cause of nasal blockage (ITH). ITH is frequently linked to chronic allergy or vasomotor rhinitis (1).

Traditionally, these disorders have been treated conservatively with topical corticosteroids, antihistamines, decongestants, and immunotherapy. Medical therapy, on the other hand, is generally inefficient in reducing nasal obstruction and carries the additional danger of progressive consumption, which can develop to iatrogenic consequences such as rhinitis medicamentosa (2).
For these reasons, surgical surgery is frequently used to treat chronic nasal blockage caused by ITH. Partial or total turbinectomy, laser-assisted turbinooplasty, submucosal resection, electrocautery, cryotherapy, corticosteroid injection, turbinate outfracture, radiofrequency volumetric tissue reduction, and, most recently, radiofrequency coblation are all surgical alternatives (3).

Complications range in severity from slight bleeding to severe hemorrhage, synechia, crustling, bad odor, discomfort, hyposmia, and chronic dryness with increasing invasiveness. Many research have been conducted to compare various surgical methods (4).

Many surgical methods have been described for the treatment of inferior turbinate hypertrophy. Coblation is a relatively recent method that ablates hypertrophied tissues using radiofrequency energy. The usual technique of employing this technology has been demonstrated to be effective (5).

The stated benefit of the radiofrequency approach is the preservation of the surface mucosa, hence preserving the turbinates' physiologic role in causing turbulent airflow, airway resistance, and warming and humidifying inspired air. As a result, there has been an increase in the use of intramural or submucosal surgical techniques (2).

For many surgeons, surface bipolar cautery has been the procedure of choice. This is because of the low cost, simplicity of usage, and ability to conduct under local anaesthetic. The relatively new technique of RF coblation has similar benefits but may have the additional benefit of enhanced mucosal preservation and patient tolerance (6). This study is aimed to compare surface bipolar electrocautery with radiofrequency coblation in the treatment of inferior turbinate hypertrophy as regards to objective and subjective improvement in nasal obstruction, rate and type of complications, experience during the procedure, and rate of recovery.

**PATIENTS AND METHODS**

This study included 34 patients with nasal obstruction due to hypertrophied inferior turbinates resistant to medical treatment for a period not less than six weeks. This study included 22 males and 12 females with mean age of (range 18-50 years). The study work was done in Otorhinolaryngology Department in Zagazig University Hospitals in the period from May 2020 to Jul 2021. Written informed consent was obtained from all participants. The study was approved by the research ethical committee of Faculty of Medicine, Zagazig University. The work has been carried out in accordance with The Code of Ethics of the World Medical Association (declaration of Helsinki) for studies involving humans.

We considered the following Inclusion criteria: Persistent nasal obstruction due to hypertrophy of the inferior turbinates. Fit for general anesthesia. Our exclusion criteria were: Significant nasal septal deviation. Nasal polyposis. Acute Rhinitis. Chronic Sinusitis. Patients with tumor of the nasal cavity. Patients with maxillofacial trauma. Patient who doesn’t have subjective improvement following the application of topical 0.05% oxymetazoline. Patients with severe medical comorbidities or contraindications to surgery.
Steps of performance before surgery:

All studied subjects were subjected to: Full history taking. Complete physical examination for all patients. Anterior rhinoscopy. Nasal decongestion to allow better examination of the nose and to see the response of mucosa to decongestion. Nasal visual analogue score to assess the severity of nasal obstruction. Nasal endoscopic examination.

The endoscopic evaluation was carried out with a straight (4 mm, 0°) endoscope before the nasal mucosa was decongested. Routine laboratory investigations included complete blood picture, liver function tests, kidney function tests, random blood sugar, coagulation profile, viral markers ....etc. CT scanning of the nose and paranasal sinuses was done for each patient.

Medical treatment:

Medical treatment was given to all patients before C.T. scan in the form of; Nasal decongestant drops twice daily for three days. Antihistamines. Antibiotics, if there is suspected infection (amoxicillin clavulanic e.g. Augmentin 1 gm twice daily for 7 days). Local steroid spray.

If patients did not improve after six weeks from medical treatment, we would use surgical treatment.

Surgical treatment:

After obtaining informed written consent, Noradrenaline 1:200,000-soaked cotton pledgets was applied to bilateral nasal cavities for approximately 5 minutes. Each patient then was undergo turbinate reduction using both bipolar electrocautery and RF coblation. All surgeries were performed under general anesthesia with endotracheal tube. The patients were positioned in a standard nasal surgery position. All surgeries were done using 0-degree (straight) endoscope.

Surface Bipolar cauterization (1st group):

Endoscopic evaluation of the inferior nasal turbinate was done then the Valleylab bipolar cautery tip was connected to the Valleylab Force 2 electrosurgical system. The procedure was involve 2 passes (medial and inferior) surface of inferior turbinate sparing the anterior end.

The bipolar was set to a power setting between (15/20 j/s) and each probe was activated and held in place for exactly 2-4 seconds (100 J applied with each pass) or stopped in less than 4 seconds if mucosal blanching is noted.

Linear cauterization of inferior turbinate was done from posterior to anterior with 2 mm distance between two limb of bipolar cautery forceps.

A silastic nasal septal stent was fixed to the septum and left for at least 2 weeks. Pack inserted at this side to avoid bleeding.

Radiofrequency coblation (2nd group):

Radiofrequency coblation was performed using the Coblator II System with the Reflex 45 wand (Arthrocare, Sunnyvale, California, USA). The system was set to a power level of 4 in coblation mode (output voltage of 237.5 Vrms ± 10%) and a
power level of 2 in coagulation mode (output voltage of 70 Vrms ± 10%). The coblation wand has 3 marketings which are utilized to gage the depth of penetration of the wand. The wand was inserted starting from anterior head of inferior turbinate up to the 1st, 2nd and or 3rd marketing according to the size of the inferior turbinate. Once the 2nd or 3rd mark was reached then the coblation is performed for a period of 10 seconds.

The wand was withdrawal to the second mark and coblation was done in 10 seconds period and finally it was withdrawal at 1st mark and coblation is repeated to another 10 seconds. So duration range between 60-90 seconds according to number of passes We may make 2 to 3 passes (superior, middle and inferior). Pack inserted at this side to avoid bleeding.

Postoperative medication:

Antibiotics, analgesics, systemic decongestant. Avoid manipulation of the nose and nasal blowing.

Removal of nasal packs was done after 48hr’s. Then nasal saline irrigation was prescribed for 2 months postoperatively. Silastic nasal septal stent were removed after 2 weeks.

Postoperative follow up:

Patients were followed up weekly, 1st month then monthly for one year. On follow up careful recording of symptoms (nasal obstruction, headache and rhinorrhea) was done by visual analogue scale (VAS). In every office visit patients underwent nasal endoscopy and saccharine test. All results and findings were collected and tabulated.

Statistic analysis

The information was gathered, collated, and statistically examined (IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.). The mean, standard deviation, and median (range) of quantitative data were used, while the mean, SD, and median (range) of qualitative data were used (%age). To compare two groups of non-normally distributed variables, the Mann Whitney U test was utilized. When appropriate, %ages of categorical variables were compared using the Chi-square test or the Fisher Exact test. The McNemar test was used to compare paired categorical variables. The Marginal Homogeneity test was used to compare matched ordinal variables. All of the tests were two-sided. p-value 0.05 was deemed statistically significant (S), p-value 0.001 was deemed statistically highly significant (HS), and p-value 0.05 was deemed statistically insignificant (NS).

RESULTS:

Table 1; showed that the patients were 24 females (70.6%) and 10 males (29.4%), the mean age of all patients was 28.7±8.7 years and ranged from (18—50) years, where 16 patients of them were non-smokers (47.1%), 10patients were Passive smokers(29.4%) and 8 patients were smokers (23.5%). Among the studied patients, there were 18 patients (52.9%) , 16 patients (47.1%) had grade III grade IV of inferior
turbinate hyper-trophy respectively, all patients (100.0%) had Resistant allergic rhinitis to treatment but respond to topical decongested.

Table (1): Demographic characteristics of studied patients (N=34)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age per years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean ±SD</td>
<td>28.7±8.7</td>
<td>18-50</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>24</td>
<td>70.6</td>
</tr>
<tr>
<td>Males</td>
<td>10</td>
<td>29.4</td>
</tr>
<tr>
<td>Smoking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non—smokers</td>
<td>16</td>
<td>47.1</td>
</tr>
<tr>
<td>Passive smokers</td>
<td>10</td>
<td>29.4</td>
</tr>
<tr>
<td>smokers</td>
<td>8</td>
<td>23.5</td>
</tr>
<tr>
<td>Clinical characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistant allergic rhinitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>to treatment</td>
<td>Yes</td>
<td>34</td>
</tr>
<tr>
<td>Grade of inferior turbinate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hyper-trophy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade III</td>
<td>18</td>
<td>52.9</td>
</tr>
<tr>
<td>Grade IV</td>
<td>16</td>
<td>47.1</td>
</tr>
<tr>
<td>Respond to topical decongested</td>
<td>Yes</td>
<td>34</td>
</tr>
</tbody>
</table>

Regarding compare symptoms pre and postsurgical Treatment of Inferior Turbinate Hypertrophy among studied patients; 26 Cases (76.5%) had headache relief to be 14 cases (41.2%) post intervention, the difference statistically highly significant p=0.0001. 14 Cases (41.2%) had Nasal itching relief to be 8 cases (23.5%) post intervention, the difference statistically significant p=0.031. Moreover; All cases(100%) had Running nose, Blocked breathing, Dry mouth, this symptoms relief completely among all cases post intervention, the difference statistically highly significant p=0.0001. While there was statistically no significant difference regard Sneezing symptom post intervention p>0.05. Figure 1
Figure (1): Symptoms pre and postsurgical Treatment of Inferior Turbinate Hypertrophy among studied patients

Figure 2: showed that VAS grade pre and post Radiofrequency Coblation for treatment Inferior Turbinate Hypertrophy side; 12 Cases (35.3%) suffered from VAS Grade 2 and 22 cases (64.7%) grade 3, decline post intervention to be 32cases (94.1%) had VAS grade1, only 2 patients (5.9%) had VAS grade 2, the difference statistically highly significant p=0.0001.

Figure (2):% of VAS grade pre and post Radiofrequency Coblation for treatment Inferior Turbinate Hypertrophy

VAS grade pre and post Surface Bipolar Cauterization of Inferior Turbinate Hypertrophy side; 14 Cases (41.2%) suffered from VAS Grade2 and 20 cases (58.8%) grade 3, decline post intervention to be 25cases (73.5%) had VAS grade 1, and 9 patients (26.5%) had VAS grade2, the difference statistically highly significant p=0.0001. Table 2

Table(2): Comparison VAS grade pre and post Surface Bipolar Cauterization of Inferior Turbinate Hypertrophy side (N. 34)

<table>
<thead>
<tr>
<th>VAS</th>
<th>Grade 1</th>
<th>Grade 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N.</td>
<td>N.</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Pre intervention</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Post intervention</td>
<td>25</td>
<td>9</td>
</tr>
</tbody>
</table>

M<sub>p-value</sub> = 0.0001 (HS)
Marginal Homogeneity Test (HS) highly significant $p<0.001$.

Table (3) showed that there was a significant difference between the 2 sides as regard incidence of complication as: incidence of complication: was 29.4% in Radiofrequency Coblation treated side and was 52.9% in Surface Bipolar Cauterization treated side with $p$-value (0.049).

Table (3): Comparison complication of Radiofrequency Coblation Versus Surface Bipolar Cauterization for The Treatment of Inferior Turbinate Hypertrophy (each side N.34)

<table>
<thead>
<tr>
<th>Complication (pain)</th>
<th>Radiofrequency Coblation side</th>
<th>Surface Bipolar Cauterization side</th>
<th>$\chi^2$</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>N. 10</td>
<td>18</td>
<td>3.89</td>
<td>0.049 (S)</td>
</tr>
<tr>
<td>%</td>
<td>29.4%</td>
<td>52.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>N. 24</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>70.6%</td>
<td>47.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2$ Chi square test of significant (S) significant $p<0.05$

Table (4) showed that there was a significant difference between the 2 sides as regard pain duration as: duration of complication: was one week in Radiofrequency Coblation treated side and was ranged from one week to two week of Surface Bipolar Cauterization treated side, with $p$-value (0.025).

Table (4): Comparison duration of postoperative pain among Radiofrequency Coblation Versus Surface Bipolar Cauterization for The Treatment of Inferior Turbinate Hypertrophy (each side N.34)

<table>
<thead>
<tr>
<th>Duration of pain (week)</th>
<th>Radiofrequency Coblation side n.10</th>
<th>Surface Bipolar Cauterization side n.18</th>
<th>U</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median (range)</td>
<td>1(1-1 week )</td>
<td>1(1-2 weeks)</td>
<td>2.24</td>
<td>0.025</td>
</tr>
</tbody>
</table>

Mann-Whitney U significant $p<0.05$

Table (5) showed that there was non-significant difference between the 2 sides as regard VAS grade at pre intervention $p>0.05$

Table (5): Comparison VAS grade pre The Treatment of Inferior Turbinate Hypertrophy (each side N.34)
Pre intervention | \( \chi^2 \) | \( \text{p-value} \)  
--- | --- | ---  
Radiofrequency Coblation side | Surface Bipolar Cauterization side |  
VAS | Grade 2 | N. | 12 | 14 | 0.25 | 0.62 (NS)  
| % | 35.3% | 41.2%  
Grade 3 | N. | 22 | 20  
| % | 64.7% | 58.8%  
\( \chi^2 \) Chi square test of significant (NS) non-significant \( p > 0.05 \)  

Figure (3) showed that there was significant difference between the 2 sides as regard VAS grade at postoperative \( p < 0.05 \).

![Figure (3):% of VAS grade of postoperative of Radiofrequency Coblation Versus Surface Bipolar Cauterization for The Treatment of Inferior Turbinate Hypertrophy](image)

DISCUSSION:

The studied patients were 24 females (70.6%) and 10 males (29.4%), the mean age of all patients was 28.4±8.3 years and ranged from (17-72) years, where 16 patients of them were non-smokers (47.1%), 10 patients were Passive smokers (29.4%) and 8 patients were smokers (23.5%).  

Unsal et al. (7), on the other hand, recruited twenty-seven patients in their study, with a mean age of 32.16 10.48 years old (range 20-59). There were six ladies (22.2%) and twenty-one males (77.8%).  

According to the findings of the current study, 18 patients (52.9%) and 16 patients (47.1%) had grade III and IV inferior turbinate hypertrophy, respectively. All patients (100%) experienced treatment-resistant allergic rhinitis but responded to topical decongestant.
However, in the study of Rao et al. (8), the primary symptom in patients prior to surgery was complete nasal obstruction.

The current study found that when comparing symptoms pre- and post-surgical Treatment of Inferior Turbinate Hypertrophy among studied patients, 26 cases (76.5 %) had headache relief compared to 14 cases (41.2%) post intervention, with the difference statistically highly significant p=0.0001. Nasal itching relief was reported in 14 patients (41.2 %) compared to 8 cases (23.5 %) after intervention, with a statistically significant difference of p=0.031. Furthermore, all instances (100%) reported Running nose, Blocked breathing, and Dry mouth, and these symptoms were entirely relieved in all cases following intervention, with a statistically significant difference of p=0.0001. While there was no statistically significant difference in Sneezing symptom after intervention (p>0.05).

Sabaa et al. (9) found that the baseline mean (SD) for TNSS (total nasal symptom score) was 5 (2), 5 (2), and 5 (1) for groups A, B, and C, respectively, with no statistically significant difference between the three groups (P = 0.8). Three months following surgery, the mean (SD) for groups A, B, and C was 3 (2), 3 (2), and 3 (1), respectively. Nonetheless, no statistical significance was found between the groups (P = 0.8). A pairwise comparison of each group's baseline and 3-month follow-up data revealed statistical significance, with a P value less than 0.001. This randomized controlled experiment included 45 individuals with hypertrophied inferior turbinates who were divided into three equal groups at random: Group A received partial inferior turbinectomy, Group B received inferior turbinate bipolar surface cautery, and Group C received inferior turbinoplasty.

Furthermore, Türk et al.(10) demonstrated a statistically significant improvement in rhinorrhea, itching, and sneezing symptoms in group 1. There was no statistically significant difference in the VAS scores of rhinorrheas and itching after surgery in group 2 (patients with allergic rhinitis (n=23) were classified as group 1, and patients with non-allergic rhinitis (n=36) were classified as group 2). Only a substantial improvement in sneeze symptoms was noted. It is unclear how RFA turbinate surgery lowers rhinorrhea, itching, and sneezing symptoms in allergic rhinitis patients and sneeze in non-allergic rhinitis patients. Some studies link the alleviation of sneezing following RFA to the loss of post-nasal nerve branches (11).

However, because the posterior nasal nerve, which is responsible for nasal mucosa innervation, is dispersed throughout the nasal mucosa, it is surprising that turbinate reduction alone can have such dramatic results. Furthermore, dysregulation of sympathetic, parasympathetic, and nociceptive neurons innervating the nasal mucosa and controlling nasal mucosal vascularity and glandular secretion has been proposed. When RF radiation is applied to the inferior turbinate submucosa, it causes submucosal small vessel obliteration, mucosal gland destruction, and circumferential scar formation, which are thought to play a substantial part in the positive effects of RFA (12).

Radiofrequency ablation (RFA) is a method that was created in 1998 at Stanford University in the United States and is now widely utilized and regarded as a less invasive and successful alternative to surgery. RFA employs radiofrequency waves to transfer energy to tissue 2–4 mm deep from the electrode head, denaturing tissue proteins in the deep mucosa while maintaining surface tissue. The ablated tissue then
In the study, 12 cases (35.3%) had VAS Grade 2 and 22 cases (64.7%) had VAS Grade 3, with 32 instances (94.1%) having VAS grade 1 and only 2 patients (5.9%) having VAS grade 2, with the difference statistically highly significant p=0.0001.

Our findings were corroborated by the findings of Unsal et al. (7), who discovered that inferior turbinate ablation increased the mean cross-sectional area and volume of the nose, as well as the patients' forced expiratory volume in 1 s, forced vital capacity, and peak expiratory flow. These differences in pre- and post-ablation outcomes were statistically significant. When compared to pre-ablation scores, post-ablation visual analogue scale scores were lower, and this difference was statistically significant.

Also, Türk et al. (10) reported that in both groups, Postoperative endoscopic evaluation demonstrated a statistically significant reduction in nasal blockage (p<0.001). In group 1, there was a statistically significant decrease in the blockage rate at the postoperative sixth month when compared to findings in the postoperative third month (p<0.001). There was no statistically significant difference in nasal obstruction between the two groups either preoperatively or at the third month postoperatively (p=0.218 and p=0.922, respectively). However, at the postoperative sixth month, age of nasal cavity blockage due to the inferior turbinate was considerably higher in group 1 than in group 2 (p=0.004).

Acoustic Rhinometry (AR) measures the cross-sectional areas of the nose's corresponding parts objectively, and AR improvement following inferior turbinate RFA has been observed in multiple investigations (14,15).

In the past, a variety of surgical procedures were employed to reduce hypertrophied inferior turbinate. Submucosal cautery, laser turbinate reduction, micro debridement, surface cautery, and inferior turbinate excision are some of the procedures available. These procedures have significant morbidity, such as blood loss, a lengthy process, and postoperative discomfort and crusting (16).

The current study revealed that VAS grade pre and post Surface Bipolar Cauterization of Inferior Turbinate Hypertrophy side; 14 cases (41.2%) suffered from VAS Grade 2 and 20 cases (58.8%) grade 3, decline post intervention to 25 cases (73.5%) had VAS grade 1, and 9 patients (26.5%) had VAS grade 2, the difference statistically highly significant p=0.0001.

Uluyol et al. (17) found that in the BEC (bipolar electrocautery) group, the mean MCC (mucociliary clearance) was 570.6 ± 61 seconds (range: 435 to 735 seconds before treatment and 584.9 ± 61 seconds (range: 460 to 690 seconds 2 months after treatment, with no statistically significant difference between the two tests (p=0.75). The mean VAS score for nasal patency was 7.1 ± 1.13 prior to therapy and 3.4 ± 1.0 two months later, with a statistically significant difference between the two values (p=0.001).

Although typically overlooked by nasal septal deviation, inferior turbinate hypertrophy (ITH) is a prevalent cause of persistent nasal obstruction. ITH is frequently connected with chronic allergy or vasomotor rhinitis, which is believed to
impact 30 million Americans. Traditionally, these disorders have been treated conservatively with topical corticosteroids, antihistamines, decongestants, and immunotherapy(18).

The current study found a significant difference between the two sides in terms of complication incidence, as follows: incidence of complication: 29.4 % in Radiofrequency Coblation treated side and 52.9 % in Surface Bipolar Cauterization treated side with p-value (0.049). There was a significant difference between the two sides in terms of pain duration, as follows: duration of complication: one week in Radiofrequency Coblation treated side and one week to two weeks in Surface Bipolar Cauterization treated side, with p-value (0.025). There was no significant change in VAS grade between the two groups before to intervention (p>0.05).

This finding was consistent with the findings of Shah et al. (2), who found that radiofrequency coblation was considerably less painful than bipolar cautery during the surgery (P=.03) and in the early postoperative period (P=.02), and produced less crusting at 3 weeks (P=.009). Subjective and objective improvements in nasal obstruction as determined by acoustic rhinometry and subjective VAS results were similar in both therapies. When the subjective assessment (VAS scale) of each patient's level of nasal blockage prior to turbinate reduction was compared, both the coblation and cautery groups were equal (46 vs 50; P = 0.30). At the 6-week follow-up, while only 24 of the 41 patients completed the VAS questionnaire for level of nasal blockage, the coblation group improved by 63%, while the bipolar cautery group improved by 54% (17 vs 23; P=.14).

Furthermore, Salem et al. (19) found that coblation was less uncomfortable during the surgery and afterward than bipolar cautery. Both procedures decreased nasal blockage significantly, although the side treated with coblation improved the most. Both treatments significantly diminish the hypertrophied inferior turbinate.

CONCLUSION:

Both techniques have proven to be equally effective. In both the groups, Radiofrequency is considered to be more accurate, Bipolar electro cautery and Radiofrequency volumetric tissue reduction are equally effective in improving both the subjective and objective nasal obstruction.

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