

Presented With Nasal Obstruction and Sleep Apnea

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ABSTRACT

Objective: To examine the effectiveness of snoreben device in patients presented with nasal obstruction.

Study Design: Cross-sectional/Observational study.

Place and Duration of Study: This study was conducted at the Department of ENT, Continental Medical College, Lahore from January 2017 to December 2018.

Materials and Methods: One hundred and twenty patients of both genders with ages above 18 years presented with nasal obstruction were enrolled in this study. Patients detailed demographic including age, sex and causes of nasal obstruction were recorded. Patients complete nasal examination was done. Patients were advised to use snoreben device. Effectiveness of snoreben device was examined in term of excellent, good, fair and poor response after 6 months follow-up.

Results: Sixty five (54.17%) were males and 55 (45.83%) were females. Mostly patients 48 (40%) were ages between 31 to 40 years. Allergic rhinitis was the commonest cause of nasal obstruction found in 50 (41.67%) patients. After use of device 85 (70.83%) patients had excellent response, 15 (12.5%) patients had good response, 15 (12.5%) had fair and 5 (4.17%) patients had poor response.

Conclusion: Snoreben device is safe and effective treatment modality for patients with nasal obstruction.

Key Words: Snoreben, Nasal obstruction, Sleep apnea

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INTRODUCTION

Impaired nasal breathing is a common reason for patients' consultations to the ENT physician and is considered by those affected to cause significant reduction in their quality of life.¹ Habitual snoring can have an incidence of up to 50% and can be a serious social problem for the patient and the bed partner.² Amongst anatomical causes, septal deviation plays an important role in many patients. Even so, a combined septoplasty with turbinate reduction does not always provide a complete solution to the problem. The most frequent cause of septoplasty failure is closely related to the nasal valve.³

The Snoreben is a nasal dilator that's said to help prevent snoring by opening up the nasal cavities a better airflow through the nose. It is supposed to be an effective solution for anyone suffering from snoring due to a deviated concha, narrow nostrils, or even nasal-cavity blockage.

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The device is supposed to be inserted in cavity before sleep, and is designed to remain in the nostrils throughout the night.^{4,5} The Snoreben device has been pretty thoroughly tested by sleep scientists, and has shown itself to be useful for referred patients who suffered from chronic snoring. Basically, patients spent nights monitored while sleeping - both and without the device, and the results showed a significant reduction in snoring in patients who uses the Snoreben. Patients who used the device also experienced an increase in oxygen levels.^{6,7}

MATERIALS AND METHODS

This observational/cross sectional study was conducted at Department of ENT, Continental Medical College, Lahore from 1st January 2017 to 31st December 2018. A total 120 patients of both genders with ages above 18 years presented with complaints of nasal obstruction and sleep apnea were enrolled in this study. Patients with septal deviation, nasal polyps, vestibulitis, severe pulmonary diseases, deformity of nose and patients with ages below 18 years were excluded from this study. Patients detailed demographic including age, sex and clinical presentation were recorded after taking written informed consent from all the patients. All patients had complaints of mouth breathing during the phase of nasal obstruction. The noses were examined clinically for airflow and assess level of obstruction. After full assessment of the anterior nares, nasal cavity was examined clinically and endoscopically with 0 degree and 30 degree scopes to exclude any

pathological problems. Patients were followed for 6 months. The nose scoring system was applied to examine the response of modality rating 0-100. Excellent response 75 to 100% resolution, 50 to 74% resolution taken as good response, 25 to 50% resolution as fair and <25% resolution as poor response. Final follow-up was taken at 6 months. All the data was analyzed by SPSS 24.

RESULTS

There were 65 (54.17%) were males and 55 (45.83%) were females. 10 (8.33%) patients had ages <20 years, 28 (23.33%) patients were ages 20 to 30 years, 48 (40%) were ages between 31 to 40 years, 26 (21.67%) patients had ages 41 to 50 years and 8 (6.67%) patients were ages above 50 years (Table 1). According to the clinical presentation of nasal obstruction, allergic rhinitis was the commonest cause of nasal obstruction found in 50 (41.67%) patients followed by vasomotor rhinitis, traumatic/post-surgical, common cold and congestion during pregnancy and menstruation in 30 (25%), 18 (15%), 13 (10.83%) and 9 (7.5%) patients respectively (Table 2).

At final follow-up, we found that 85 (70.83%) patients had excellent response, 15 (12.5%) patients had good response, 15 (12.5%) had fair and 5 (4.17%) patients had poor response (Table 3)

Table No.1: Age and gender wise distribution

Variable	No.	%
Gender		
Male	65	54.17
Female	55	45.83
Age (years)		
< 20	10	8.33
20 - 30	28	23.33
31 - 40	48	40
41 - 50	26	21.67
>50	8	6.67

Table No.2: Causes of nasal obstruction

Cause	No.	%
Allergic rhinitis	50	41.67
Vasomotor rhinitis	30	25
Traumatic/post-surgical	18	15
Common cold	13	10.83
Congestion during pregnancy & menstruation	9	7.5

Table No.3: Outcomes at final follow-up

Outcome	No.	%
Excellent	85	70.83
Good	15	12.5
Fair	15	12.5
Poor	5	4.17

DISCUSSION

Nasal obstruction and sleep apnea are the common clinical problems in ENT settings. Nasal obstruction can be due to many causes in which allergic rhinitis, vasomotor rhinitis, post-surgical/trauma were the most common causes of nasal obstruction. Many of treatment modalities have been used to relief for these complaints of nasal obstruction and snoring, in which mechanical dilator devices showed significant results for considerable relief.^{8,9} The present study was conducted to examine the effectiveness of snoreben device in patients with complaints of nasal obstruction and sleep apnea. We enrolled 120 patients of both genders, in which 65 (54.17%) were males and 55 (45.83%) were females. 10 (8.33%) patients had ages <20 years, 28 (23.33%) patients were ages 20 to 30 years, 48 (40%) were ages between 31 to 40 years, 26 (21.67%) patients had ages 41 to 50 years and 8 (6.67%) patients were ages above 50 years. These results were similar to some previous studies regarding treatment outcomes of nasal obstruction in these studies mostly patients were males 55 to 70% and majority of patients were ages above 35 years.^{10,11}

In present study allergic rhinitis was the commonest cause of nasal obstruction found in 50 (41.67%) patients followed by vasomotor rhinitis, traumatic/post-surgical, common cold and congestion during pregnancy and menstruation in 30 (25%), 18 (15%), 13 (10.83%) and 9 (7.5%) patients respectively. A study conducted by Noss et al¹² reported that allergic rhinitis was the commonest cause of nasal obstruction in 48% patients.

In our study we found that 70.83% patients had excellent results in term of relieve of nasal obstruction, 12.5% patients had good response, 12.5% and fair and 4.17% had poor response. In patients with allergic rhinitis 30 patients had excellent, 5 patients had good and 5 patients had poor response with none of patients resulted poor response. We found that majority of patients were highly satisfied after using the snoreben device. A study by Kiyohara et al¹³ regarding effectiveness of mechanical dilator for nasal obstruction demonstrated that external nasal strips and nasal clips effectively relieve obstruction of the internal nasal valve and may be the effective alternative of surgical treatment. In a study published in Archives of Otolaryngology - Head & Neck Surgery, researchers examined the effects of nasal valve dilation on snoring and obstructed breathing in 11 patients with habitual snoring and/or OSA. They found the frequency and severity of obstructed breathing decreased significantly with the nasal dilator.¹⁴ Many of other studies resulted mechanical dilators are safe and effective treatment modality for nasal obstruction with no major complications.¹⁵⁻¹⁸

CONCLUSION

Blocked nose, snoring, and difficulty in breathing are the common nasal problem in all over the world. We concluded that snoreben device is safe and effective treatment modality for patients with nasal obstruction with no side effects. Majority of patients showed excellent response in term of relieve obstruction. So snoreben device is a better alternative to surgical treatment of nasal obstruction.

Author's Contribution:

Concept & Design of Study: M. Mubarik Ali
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 Revisiting Critically: M. Mubarik Ali,
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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