

**Research Article**

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## Impact of Radiofrequency Ablation of Soft Palate (Somnoplasty) on Simple Snoring

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### Abstract

Radiofrequency ablation of the soft palate is a simple procedure for the treatment of simple snoring. We aimed to investigate the efficacy of Somnoplasty in reducing snoring. Each patient underwent a pre- and post-treatment full-night polysomnography. Somnoplasty was performed under local anesthesia to all patients. Forty, nonapneic snorers completed the study. There was a significant improvement in the snoring index 13.6 ( $\pm 3.6$ ) to 4.8 ( $\pm 1.7$ ) and in the Epworth Sleepiness Score 8.2 ( $\pm 4.1$ ) to 3.9 ( $\pm 1.2$ ). No major complications were reported. Further studies are required to investigate whether treatment efficacy can be improved by utilizing multiple applications.

**Keywords:** Snoring, Somnoplasty, Radiofrequency, Polisomnography, Epworth Sleepiness Scale.

### INTRODUCTION

Snoring is a problem that could result social disturbance. Snoring may be simple or associated with obstructive sleep apnoea syndrome (OSAS). These patients therefore need close attention. Assessment could include history of patient, clinical examination, tests, endoscopy and polisomnography.

Many surgical techniques have been described to solve this common problem. Uvulopalatopharyngoplasty is the most popular technique. But postoperative pain is main problem of this technique.

Somnoplasty is a minimally invasive technique that depends on useage of radiofrequency thermal ablation device which causes thermal damage to the soft palate, resulting in fibrosis and volumetric tissue reduction.

In our prospective, non-randomized study, we used somnoplasty to our simple snoring patients to solve their problem.

### METHODOLOGY

Patients whom want to treat socially disturbing snoring with an AHI between 5-15 events:h as documented by full-night polysomnography and body mass index lower than 30 kg:m2, were included in this study. The Local Review Board of the participating centers approved the protocol and each patient signed an informed consent. The total number of subjects included in this study was 40.

An Epworth Sleepiness Scale was completed by the subjects and full-night polysomnography was performed to all patients before and after their treatment.

Somnoplasty was performed to all patients under local anesthesia (Somnus Medical Technologies, Inc., Sunnyvale, CA). The total 700 J was delivered midline of the soft palate. SPSS-10 was used for statistical analysis.

### RESULTS

Characteristics of the study population is shown in table 1. There were no big complications such as dysphagia, nasal regurgitation. There was a significant decrease in snoring indexes and Epwoth Sleepiness scores after somnoplasty (Table 2). There was no serious complications.

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**Table 1:** Characteristics of the study population (n=40)

Parameter	Mean (standard deviation)
Age (years)	45.7 ( $\pm$ 9.6)
Gender	82.5% male (n=33)
Body mass index (kg:m2)	26.6 ( $\pm$ 3.2)

**Table 2:** Snoring index and Epworth sleepiness score before and after somnoplasty

	Before somnoplasty	After somnoplasty
Snoring Index	13.6 ( $\pm$ 3.6)	4.8 ( $\pm$ 1.7)
Epworth sleepiness score	8.2 ( $\pm$ 4.1)	3.9 ( $\pm$ 1.2)

## DISCUSSION

Our results show that somnoplasty is an effective procedure in treatment of simple snoring. There was a significant decrease in snoring indexes and Epworth Sleepiness scores after somnoplasty such as literature. Somnoplasty is an effective and safe procedure.

A major advantage of the Somnoplasty procedure is that it results in minimal pain or discomfort during the post-treatment period. In addition, no serious adverse events were encountered with the current single midline treatment protocol.

## CONCLUSION

Radiofrequency thermal ablation results in improvement of snoring in 84.4% of patients; and patients improved to a snoring index. Because Somnoplasty can be used in an outpatient setting, under local anesthesia, and is associated with minimal pain or discomfort, we recognize that it may have substantial advantages over other forms of treatment for snoring such as uvulopalatopharyngoplasty. We therefore suggest that other treatment protocols be explored in order to improve the outcome of this treatment for simple snoring. Further studies are necessary to investigate the effectiveness of Somnoplasty on other sleep pathologies.

## Financial Support

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## Conflict of Interest

The author has declared no conflict of interest.

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