

Snoring and oral submucous fibrosis

N. K. SONI

Abstract

Forty patients above the age of 40 years with oral submucous fibrosis were studied to determine the frequency and severity of snoring. The results were compared with a controlled group of similar sex and age for presence of snoring. The present study indicates that patients with oral submucous fibrosis having a short and fixed uvula and scarred soft palate are less likely to develop snoring. Thus it is suggested that in laser surgery or in classical uvulopalatopharyngeal surgery, the uvula and soft palate should be reduced in size and volume to the extent of that found in oral submucous fibrosis.

Key words: Snoring; Oral submucous fibrosis

Introduction

Snoring is a stentorous sound produced by the collapse of the upper airways during sleep. The discordant and disruptive snoring sound is generated at the distensible parts between the post-nasal space and larynx. It occurs at one or at many sites but most typically at the soft palate and/or base of the tongue as a result of the narrowing and relaxation of the airways. The main cause being reduced muscle tone that allows the flaccid soft palate or the tongue to fall back and vibrate against the pharyngeal wall. Snoring is a common problem and occurs in 50 per cent of people over 50 years of age (Lugaresi *et al.*, 1980).

In addition to several psychological and social consequences (marital discord, daytime somnolence, diminished attention, impotence), snoring has been implicated as a risk factor in the aetiology of serious cardiovascular diseases (Lugaresi *et al.*, 1980; Norton and Dunn, 1985; Pertinen and Palomaki, 1985; Koskenuovo *et al.*, 1987).

Several different operations have been used to manage both apnoeic and nonapnoeic snoring on the palate, uvula, pharynx and base of the tongue, in the form of uvulopalatopharyngoplasty or midline glossectomy or linguloplasty. Thus it is observed that an elongated uvula, large palate and a bulky tongue base are responsible for generating snoring. If the uvula, the palate and the base of the tongue are reduced significantly in size and volume, the sound of snoring can be minimized or abolished.

Oral submucous fibrosis is an insidious chronic disease that may affect any part of the oral cavity, and sometimes the pharynx, that is associated with a fibrous band of scarring, due to an increased deposition of fibrous tissue. In the late stage the



FIG. 1

A case of oral submucous fibrosis showing lightness of soft palate and retraction of the soft palate and uvula.

uvula and palate become short and fixed. Fibrosis may extend to the cheek and even to the pharyngeal wall and sometimes to the tongue including the base of the tongue (ankyloglossia). Thus oral submucous fibrosis is a condition in which the uvula, palate and base of the tongue are reduced in size and volume and the flaccidity is lost (Figure 1). Thus patients with oral submucous fibrosis should never develop snoring and sleep apnoea syndrome. We, therefore, carried out a systemic study of snoring in cases of oral submucous fibrosis.

Materials and methods

Patients above the age of 40 years attending the outpatient department suffering from oral submucous fibrosis were assessed for the presence of

TABLE I
SNORER'S QUESTIONNAIRE

[1]	Duration of snoring
[2]	Severity of snoring
[3]	History of intake of alcohol or sedation
[4]	Sleeping hours in the night
[5]	Frequency of "wake up" at night
[6]	Feeling of sleepiness during day
[7]	Any nasal problem like nasal obstruction
[8]	Any pharyngeal or laryngeal problem such as sore throat, dysphagia, xerostomia, choking attacks etc.
[9]	Any other, sexual problem, cardiac(heart) problem and intelligence or memory problem.

Questionnaire from sleeping partners:

[1]	Duration of snoring
[2]	Severity of snoring
[3]	Body position during snoring
[4]	Apnoea during sleep
[5]	Any abnormal movement in sleep

snoring, to detect any evidence of obstructive sleep apnoea (OSA) and to exclude any other significant nonpalatal anatomical deformity. Normal persons of a similar age group were also interviewed for the presence of snoring and other relevant findings as a control group.

A complete history of both groups of patients were recorded in Table I. A complete clinical examination was performed in each patient and findings were recorded.

Patients with gross nasal pathology (marked deviated nasal septum, nasal polypi or tumours) were not included in the study. Similarly, patients having any gross laryngeal pathology (vocal fold palsy or tumour) were not included. Patients with a markedly short neck, micrognathia, retrognathia, or very enlarged tonsils were excluded. Similarly, the persons who habitually took alcohol or sedation at bed time were not included in the study. Heavy smokers were also not included.

Endoscopy of the airways was performed. Formal polysomnographic tests (oxygen saturation, electroencephalography, electro-oculography, electro-cardiography, thoraco-abdominal movement and nasal/oral airflow and sleep nasoendoscopy) were not performed.

Results

Out of 40 cases of oral submucous fibrosis, 20 were male and 20 were female, their ages ranged from 40 to 66 years. A similarly aged control group was included. Amongst the cases of oral submucous fibrosis, only three patients had a history of snoring, they were also obese and subsequently diagnosed as

having hypothyroidism, (Table II). In the control group, 18 were found to snore, three were obese and two had hypothyroidism.

Thus only three patients (two male, one female) snored compared with oral submucous fibrosis while 18 people in the control group (13 male, five female).

In the control group, all persons who had a history of snoring showed all the features of a typical 'snorer's throat' such as a bulky soft palate, elongated and oedematous uvula, redundancy of mucous membrane of the posterior pharyngeal wall and lateral pharyngeal wall as revealed by vertical folds, and hypertrophy of the pharyngeal walls. They also had a bulky tongue and an abnormal projection of the base of the tongue into the oropharynx.

Discussion

The present study revealed that the patients with oral submucous fibrosis having a short and fixed palate and uvula are less likely to develop snoring than persons of a similar age group who did not have oral submucous fibrosis.

In normal individuals between 40 to 50 years of age, 40 per cent of males and 20 per cent of females snored. By the age of 60 years more than 60 per cent of males and 40 per cent of female snored (Gurr, 1995). In the present study in the age group of 40 to 50 years, 55 per cent of men and 22 per cent of women snored. By the age of 60 years or more, 66 per cent of males and 55 per cent of females develop snoring. In the cases of oral submucous fibrosis in the age range 40–50 years neither the men nor women snored. In cases of oral submucous fibrosis by the age of 60 years or more, only 11 per cent of males and no females snored.

TABLE II
AGE AND INCIDENCE OF SNORING IN PATIENTS WITH ORAL SUBMUCOUS FIBROSIS AND CONTROL GROUP

Age	Patients with oral submucous fibrosis			Control group		
	Male	Female	Total	Male	Female	Total
40–50	9	9	18	9 (5)	9 (2)	18 (7)
51–60	9 (1)	9 (1)	18 (1)	9 (5)	9 (4)	18 (10)
Above 60	2 (1)	2 (1)	4 (2)	2 (2)	2 (1)	4 (3)

*() a snorer.

Thus the above observation suggests that the short fixed uvula and soft palate produced by oral submucous fibrosis may be a guideline for management of snoring by the surgical procedure of uvulopalatopharyngoplasty. The patients with oral submucous fibrosis did not have any significant voice defect and no tendency for nasal regurgitation. Thus patients with oral submucous fibrosis are less likely to develop snoring and thus also complications of snoring such as pulmonary hypertension, cardiac arrhythmia, systemic hypertension, or obstructive sleep apnoea syndrome.

Palatal surgery either by use of a laser (Kamani, 1994) or by uvulopalatopharyngoplasty is effective if the patients are appropriately selected as those who snore at the level of the soft palate. If palatal surgery fails, a procedure aimed at displacing the tongue forwards by means of laser midline glossectomy or linguloplasty gave some encouraging results. Oral submucous fibrosis affects the palate, uvula, cheek and tongue in such a way that the majority of patients do not snore. Thus a similar procedure that induces and generates fibrosis of the palate and uvula should be attempted by laser or sclerosing local agents to cure snoring.

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Address for correspondence:

Dr N. K. Soni,
12-A Adarsh Colony,
Medical College Road,
Bikaner, 334003, Rajasthan,
India.