Research Article

Oral Manifestations With Tissue Alterations of Nas or Pan Consumption: A Case Study in Bandar Abbas (Iran) in 2018

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Abstract

Background: Smokeless tobacco (ST) refers to tobacco products that are used by a means other than smoking such as snuff, chewing tobacco, nas, and betel quid (pan). There is little understanding of the oral manifestations with tissue alterations of nas or pan consumption. Therefore, this study aimed to investigate the oral manifestations in nas and pan consumers in Bandar Abbas, Iran, to raise the awareness of individuals and predict the associated risks and treatment strategies.

Methods: This is a cross-sectional study carried out on 160 patients who referred to the dental clinic of the dentistry school at Hormozgan University of Medical Sciences in the winter of 2018. Clinical examination was performed using periodontal sound, periodontal probe, mirror, wooden tongue blade, and sterilized gauze under standard unit light. A checklist was prepared and utilized to gather the demographic statistics and other data from the contributors. Data were analyzed using SPSS software version 23, and the significance level was considered 0.05.

Results: The participants comprised 145 (90.69%) males and 15 (9.37%) females. The average age of participants was 37.28 ± 12.05, of which 60 patients (37.5%) had tissue alterations due to substance use. The majority of those with tissue alterations (68.33%) had superficial lesions with a color analogous to the surrounding mucosa with negligible wrinkling and without apparent thickening. Further, individuals with lower income had greater oral lesions significantly ($P=0.016$). The mean age of individuals with tissue changes was higher than those without tissue changes, but this difference was not significant ($P=0.114$).

Conclusion: Tissue alterations in men were greater than those in women, but this difference was not significant. Lower income was significantly related to greater oral lesions. This might be due to various factors such as a lack of oral health literacy or a lack of access to financial resources for taking care of their oral health.

Keywords: Tobacco, Smokeless tobacco, Addiction, Iran, Oral manifestations

Background

Smokeless Tobacco (ST) refers to tobacco products that are used by means other than smoking. Consuming ST causes various health issues for people (1). The World Health Organization (WHO) declared in 2015 that ST-related diseases lead to the deaths of 6 million people per year worldwide. This number is more than the number of deaths caused by acquired immunodeficiency syndrome (AIDS), tuberculosis, and malaria. It is predicted that death rates will increase to 8 million every year by 2030. Without taking effective action, billions of people may die in the current century (2).

Nicotine is one of the most addictive and stimulating drugs and affects all body organs, but it mainly binds to a receptor in the central nervous system, increasing dopamine levels in the brain and turning it into an addictive agent. Although nicotine is an addictive agent, the health consequences of using ST are caused by other materials (3) such as snuff, chewing tobacco, and pan or betel quid. Each of these materials is consumed differently.

For example, snuff is consumed alongside other additives via mouth or nose. It is also inhaled through the nose or chewed or placed in the mouth, and chewing tobacco is placed between the cheek and gum (4).

The most common side effects of tobacco use include cardiovascular and respiratory diseases, oral and lung cancer, gastrointestinal diseases, and arthritis. In addition, the most common oral complications include leukoplakia, candidiasis leukoplakia, nicotine stomatitis, melanosis of smokers, and hairy tongue. The most common dental complications include discoloration of teeth, dental caries, and periodontal disease (5-7).

Objectives

The illegal import of this type of tobacco and its easy availability have led to an increase in consumption; accordingly, we will observe the spread of various systemic and oral diseases in the near future. This study aimed to investigate the oral manifestations with tissue alterations in nas or pan consumers to raise the awareness of individuals and predict the associated risks and treatment strategies.

Material and Methods

This was a cross-sectional study carried out in Bandar Abbas in Hormozgan province, a southern state in Iran. All individuals who visited the clinics in the winter of 2018 and met the required criteria were included in the study, and samples were collected by available sampling. Patients (N = 160) with a consumption background of at least two years were included in the study. All participants were informed about the study objectives, and written consent was obtained. The data collection method was a clinical examination and checklist. Clinical examination was performed using periodontal sound, periodontal probe, mirror, wooden tongue blade, and sterilized gauze under standard unit light. This assessment included an examination of the buccal mucosa, gums, vestibules, palate, and tongue mucosa. The checklist was completed by the study participants and contained two sections: the first section included demographic information (age and gender). The second section included questions about the type of substance used, the number of uses of substance per day, education (whether patients had any university degree or not), and income (low, moderate, and high). All stages of the study were performed under the supervision of an oral and maxillofacial specialist.

The data were first imported to SPSS version 23 and then analyzed by using descriptive statistics (i.e., mean and standard deviation), chi-square, t-test, and correlation. The significance level was adjusted to 0.05.

Results

The participants consisted of 145 (90.69%) males and 15 (9.37%) females. The average age of participants was 37.28 ± 12.05. The youngest and oldest participants were 17 and 75 years old, respectively. Results indicated that 60 (37.5%) participants experience mucosal alterations due to substance use. Table 1 presents information about mucosal alterations in the study participants according to Axéll and colleagues' classification (8): "Grade 1: A superficial lesion with a color analogous to surrounding mucosa with negligible wrinkling and without apparent thickening. Grade 2: A superficial white or red lesion with moderate wrinkling and without apparent thickening. Grade 3: A red or white lesion with intervening grooves of normal mucosal color, apparent thickening and wrinkling".

The tissue alterations in the 60 participants were also classified according to their physical appearance in terms of color, contour, and texture (see Table 2).

As Table 3 indicates, the average age of participants with tissue alterations was greater than that of participants without tissue alterations; however, this difference was not significant (P-value = 0.114). Further, most participants with tissue alterations were men, but

Table 1. The Frequency of Mucosal Alterations

		Number	Percent
Mucosal alterations	Degree 1	41	68.33
	Degree 2	16	26.66
Yes	Degree 3	3	5
	Total	60	37.5
No	Total	100	62.5

Table 2. Characteristics of Tissue Alterations in Terms of Color, Contour, and Texture in 60 Patients With Mucosal Alterations

Characteristics		No. (%)
Texture	Smooth	16 (26.66)
	Granular	27 (45)
	Corrugated	17 (28.33)
Contour	Raised	26 (43.33)
	Flat	32 (53.33)
	Cratered	2 (3.3)
Color	White	41 (68)
	Red	12 (20)
	Red and white	7 (12)

Table 3. Demographic and Behavioral Characteristics of Patients With Tissue Alterations

Characteristics	Mucosal Alterations		P Value
	Yes	No	
Age	39.23 ± 12.18	36.12 ± 11.88	0.114
Gender (male/female)	57/3	88/18	0.141
Number of uses	11.08 ± 9.47	9.19 ± 8.41	0.191
Education (yes/no)	28/32	53/47	0.438
Income (low/moderate/high)	52/8/0	67/29/4	0.016

the gender difference was not significant. Moreover, no significant difference was observed between the time of use and education, but patients with tissue alterations significantly had a lower economic status.

Discussion

Of the 160 patients who had a background in nas and pan consumption, 60 people (37.5%) had tissue alterations, which were much lower than those in the study by Sujatha et al, indicating that 52% of participants had tissue alterations (9). The studies by Greer et al and Sinusas et al revealed that 42% and 39% of patients with a history of tobacco had tissue alterations, respectively (10,11). In the present study, the majority of tissue alterations (68.33%) were observed in category one (see Table 1) which was in line with the study by Greer et al (10). However, other studies such as Sinusas et al showed that the majority of patients were in category two (11).

We also classified tissue alterations in terms of color (see Table 2) and indicated that most oral lesions were white (68%) followed by red (20%) and red/white (12%). Greer et al (10) found that among lesions caused by smokeless tobacco, 81% were white, followed by red and red/white colors (9.5%). Moreover, the average age of people with tissue alterations was greater than those without tissue alterations in this study. This was in line with previous studies such as the study by Mansour Ghanaei et al and El Toum et al (12,13).

In the present study, the tissue alterations in men were greater than in women (see Table 3) which is in line with the findings of Patil et al (14) and Greer et al (10). This difference can be due to the greater number of male participants in this study. Other studies such as Sujatha et al (9) have indicated that female patients exhibit greater tissue alterations.

In the current study, people with lower income had greater oral lesions which can be due to a lack of oral health literacy, lack of awareness of the consequences of nas and pan consumption, and lack of access to financial resources for taking care of their oral health. Giordano et al (15) investigated the impact of social capital on changes in smoking behavior and noted that good job status and income can lead to smoking cessation. One of the limitations of this study is its low sample size; accordingly, it is suggested that this issue be studied in a larger population in future studies.

Conclusion

Over time, with constant use of tobacco substances, the lesions will turn into dangerous and fatal degrees such as squamous cell carcinoma; therefore, it is recommended to implement legal restrictions on access to these substances and increase people's knowledge and awareness of the effects of these substances.

Competing Interests
The authors declare that they have no conflict of interests.

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