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Prevalence of oral mucosal lesions in patients visiting a dental school: A cross-sectional study

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Abstract

Aim: The purpose of the present study was to evaluate the prevalence of oral mucosal lesions among the patients visiting a dental school in India.

Material and Method: A total of 1190 subjects who visited the department of oral medicine and radiology for diagnosis of various oral complaints over a period of 3 months were interviewed and clinically examined for oral mucosal lesions.

Results: The result showed the presence of one or more mucosal lesions in (41.2%) of the population. Fordyce's condition was observed most frequently (6.55%) followed by frictional keratosis (5.79%), fissured tongue (5.71%), leukoedema (3.78%), smoker's palate (2.77%), recurrent aphthae, oral submucous fibrosis (2.01%), oral malignancies (1.76%), leukoplakia (1.59%), median rhomboid glossitis (1.50%), candidiasis (1.3%), lichen planus (1.20%), varices (1.17%), traumatic ulcer and oral hairy leukoplakia (1.008%), denture stomatitis, geographic tongue, betel chewer's mucosa and irritational fibroma (0.84%), herpes labialis, angular cheilitis (0.58%), and mucocele (0.16%).

Conclusion: Mucosal lesions like tobacco-related lesions (leukoplakia, smoker's palate, oral submucous fibrosis, and oral malignancies) were more prevalent among men than among women. Denture stomatitis, herpes labialis, and angular cheilitis occurred more frequently in the female population.

Keywords: dental school, oral mucosal lesions, prevalence

Introduction

Although the terms dental health and oral health are used almost synonymously when stating the goals for oral health, such statements are usually valid only for dental health. This may lead to severe underestimation of the need for total oral health care [1]. When planning measures for improving oral health, the lack of data may lead to a risk of overlooking diseases of the soft tissues in, and adjacent to, the oral cavity. Prevalence data of oral mucosal lesions are available from many countries, but the information is usually restricted to very few lesions in each survey. Only two studies [2, 3], with sufficiently large numbers of individuals, have presented data on a broad spectrum of oral mucosal lesions in a general population. Hence, the aim of the present study was to evaluate the prevalence of oral mucosal lesions in patients who visited the Department of Oral Medicine and Radiology, College of Dental Sciences India.

Materials and Methods

A total of 1170 outpatients seeking dental treatment at the Department of Oral Medicine and Radiology,

College of Dental Sciences, India, for the period of three months were included in the study. The patients

Were divided into four groups based on age: 2-20 years, 21-40 years, 41-60 years, and 61-80 years old. All the subjects were examined clinically and questioned regarding any habits like smoking, pan chewing, and alcohol intake, and the frequency and duration of the habit. Patients in whom an intraoral examination was not possible due to inadequate mouth opening were excluded from the study. History was obtained from parents or relatives for patients who were not able to communicate either due to age or disease. The patients were examined clinically by two trained examiners using artificial light, mouth mirror, gauze, etc.; the diagnosis was made based on history, clinical features, and investigations, according to the WHO guidelines and color atlas. Biopsies were advised for suspicious lesions.

Results

A total of 1190 patients (747 men and 443 women) in the age range 2-80 years represented the population in this 3-month study conducted in our department. The different age groups and the number of subjects in each was as follows: 2-20 years old (n = 243), 21-40 years old (n = 527), 41-60 years old (n = 325), 61-80 years old (n = 95). Reference to the color atlas while making the clinical examination and diagnosis resulted in a high proportion of both intra-examiner and inter-examiner agreement for the presence of lesions and their categorization. Out of 1190 subjects, 1167 were dentulous and 13 were totally edentulous (1.1%). Forty Five subjects were denture wearers. One hundred and fifteen (9.7%) were presently smokers, 22 (1.9%) were ex-smokers, and 1053 (88.4%) were nonsmokers. Among the current smokers, there was a high proportion of heavy smokers (21 or more cigarettes/day). The habit of tobacco chewing was present in 123 subjects. The frequency of tobacco chewing was more prevalent in males than in females (98 males and 25 females) and was more prevalent in the 21-40 age-group. Ex-pan chewers were 21 in number. Table 1 shows the demographic data. Tables 2 shows the prevalence of oral

mucosal variants and abnormalities according to age and gender. No mucosal abnormalities were detected in 58.8% of subjects. The most prevalent normal variant was Fordyce's granules (6.55%), followed by Þssured tongue (5.71%), Leukoedema (3.78%), and varices (1.17%).The most prevalent lesion was frictional keratosis (5.79%), followed by smoker's palate (2.77%), aphthous stomatitis (2.1%), oral submucous fibrosis (2.01%), oral malignancies (1.76%), leukoplakia (1.59%), median rhomboid glossitis (1.5%), oral candidiasis (1.3%), lichen planus (1.26%), traumatic ulcer (1.01%), denture stomatitis (0.84%), geographic tongue (0.84%), betel chewers mucosa (0.84%), irritational Þbroma (0.84%), angular cheilitis (0.58%), herpes labialis (0.58%), and mucocele (0.16%).

Table 1: Demographic data of 1190 patients

Patients	2-20 years(243)	21-40 years(527)	41-60 years(324)	61-80 years (96)	Total (1190)
Dentate Patients	M-135 F-108	M-332 F-195	M-206 F-113	M-63 F-25	1177
Totally edentulous	M-0 F-0	M-0 F-0	M-4 F-1	M-7 F-1	13
Denture wearers	M-1 F-0	M-4 F-2	M-8 F-15	M-10 F-5	45
Present smokers	M-5 F-0	M-50 F-0	M-55 F-0	M-5 F-0	115
Ex-smokers	M-0 F-0	M-5 F-0	M-10 F-0	M-7 F-0	22
Tobacco chewers	M-5 F-0	M-46 F-5	M-39 F-15	M-8 F-5	123
Ex- pan chewers	M-0 F-0	M-7 F-0	M-6 F-1	M-4 F-3	21
Alcoholics	M-1 F-0	M-10 F-0	M-9 F-0	M-0 F-0	20

Table 2: Prevalence of oral mucosal variants in 1190 patients

Mucosal Findings	Gender	2-20 years (n%)	21-40 years (n%)	41-60 years (n%)	61-80 years (n%)	Total (n%)
Fordyce's Granules	M F	3(2.2) 3(2.77)	30(9.03) 6(3.07)	28(13.3) 2(1.73)	6(8.5) 0	78(6.55)
Fissured Tongue	M F	1(0.74) 3(2.77)	11(3.37) 7(3.58)	18(8.57) 10(8.69)	14(20) 4(16)	68(5.71)
Leukoedema	M F	0 1(0.9)	7(2.10) 2(1.02)	29(13.3) 1(0.86)	4(5.7) 1(4)	45(3.78)
Varices	M F	0 0	1(0.30) 0	3(1.430 0	10(14.2) 0	14(1.17)

Discussion

Fordyce's condition was observed in 6.5% of our population and was more frequently observed on the buccal and lip mucosa. It was more prevalent in men (8.9%) than in women (2.48%). Corbet, [4] however, had reported a prevalence of 0.6%, which was very different from our finding.

Fissured tongue was seen in 5.7% of our population. This included all subjects with fissures of at least 2-mm depth on the dorsal aspect of the tongue. This prevalence is lower than that found by Darwazeh and Pillai (11.4%) [5] and also by Marija in Slovenia [6] (21.1%).In our study population, the prevalence of leukoedema was 3.7%. Males were more affected than females. It was especially prevalent in the 41-60 years age-group (5.35% and 1.1%, respectively, in males and females). The prevalence was more among smokers than nonsmokers, with an increase in age. A correlation between leukoedema and smoking, tobacco chewing, and alcoholism could be demonstrated in our study as was seen in some groups of people in the study by Karen in Thailand [7]

In our population, smoker's palate was observed only in men. The prevalence of 4.4% that we found was more than that observed in Ljubljana, Slovenia, by Marija (0.5%) and in Swedish men by Axell (2.1%) [2]. Tobacco-related white lesions (leukoplakia and smoker's palate) in our study population were more prevalent in men than in women (3.3% and 0.22%, respectively). This difference was attributable to the high tobacco consumption in men.

The presence of recurrent aphthae was 2.1%. It was most prevalent (2.6%) in the 21-40 years age-group and more frequent in men (2.27%) than in women (1.8%). However, the prevalence in a Swedish population as reported by Axell and Henricsson [8] was 17.7%. Irwin [9] conducted a study in Pennsylvania and concluded that the prevalence of recurrent aphthous stomatitis was higher in students. The prevalence of oral submucous fibrosis in our population was (2.01%); it was more among men (3.07%) than women (0.22%) and more often seen in the 41-60 years age-group. This is comparable to the prevalence found in a Cambodian population [10] (0.2%).

The prevalence of leukoplakia in our population was 1.59%. All the subjects with leukoplakia in our population were smokers and tobacco chewers. It was more prevalent in men than in women (2.27% and 0.45%, respectively). This prevalence is in agreement with the results obtained in Thailand by Reichart *et al* [7]. (1.1%) and in Hungary by Banoczy (1.3%) [11] but low when compared with the studies by Ikeda in Japan (25%) [12], Bouquot in USA (2.96%), and Axell in Sweden (3.6%) [13]. Axell found more tobacco associated leukoplakia as compared to our study. The highest prevalence of leukoplakia in our male population was in the 41-60 years age-group (4.76%). The most frequent site of involvement was the buccal mucosa, including the commissures, followed by the alveolar ridge and the retromolar region. No leukoplakia was seen in the ßoor of the mouth. All the leukoplakias were of the homogenous type. Toluidine blue staining was done and biopsy advised if there was stain uptake.

The prevalence of oral candidiasis in our population was 3.07%. Pseudomembranous candidiasis was present in 1.3% and was more frequently observed in males (1.7%) than in females (.67%) and in the older age-group (61-80 years). This is comparable to the finding by Ikeda [10] (1.4%) and more than that found by Axell in Kuala Lumpur (0.4%) [1]. Lichen planus was found in 1.26% of our population, which is comparable to that in Swedish [14] and Japanese populations [10]

(1.9% and 1.8%, respectively). In our population, lichen planus was most prevalent in the 41-60 year age-group (2.4%). It was more frequently observed among women than men (1.3 and 1.2%, respectively). This is in accordance with the results obtained by Axell and Rundquist [14]. No lesions were found in 58.8% of the population; 67.9% of them were females and 53.4% were males. The maximum number of lesion-free patients were in the 0-20 Years old

female population.

Conclusion

The result of the present study provides some information on the prevalence of oral mucosal findings in India. The results showed that tobacco-associated lesions were observed more in males than in females. Habituated patients were advised to give up smoking and other harmful habits. All patients underwent scaling and were advised about individual oral and dental needs. Although some recent curbs have been put on the manufacture and sale of gutkha, pan masala, and other established oral cancer causing tobacco products [15], further education is necessary to reduce or eliminate the use of these preparations.

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