

Prevalence of Oral Mucosal Lesions: A Prospective Study

Research Article

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Abstract

Introduction: Various oral premalignant lesions have risk for transferring into cancer. Hence there is a need of early identification of oral lesions and prompt treatment

Aims: The purpose of this study was to assess the prevalence and distribution of oral mucosal lesion (OML)

Materials and Method: Total 826 patients aged 18 and above reporting to the outpatient department of oral medicine were recruited for the prospective study. The diagnosis of OML was done in line with WHO criteria. Evaluation of type of oral mucosal lesion, its prevalence and site of lesion was evaluated.

Results: Out of 826 participants, 200 subjects showed various oral mucosal lesions. Out of 200 participants oral submucous fibrosis was more prevalent (21%) followed by coated tongue (16%), aphthous ulcerations (12.5%), leukoedema (9%), candida lesions (8%), leukoplakia (6%), geographic/fissured tongue (5%), lichen lesions (4.5%), and mucocele (4%). Lesion location was more frequent at buccal mucosa (46%) followed labial mucosa (17.5%), vestibular region (15%), and tongue (13%). There was higher prevalence of OSMF in males (15.5%) compared to females (5.5%). There was no statistically significant difference between males and females for other lesion in the present study.

Conclusion: The results of this study deliver important update about the prevalence of oral mucosal lesions among patients in search of dental care. This study delivers baseline data for future studies about the prevalence of oral lesions in the general population.

Keywords: Mucosal Lesions; Oral; OSMF; Prevalence.

Introduction

Oral cavity is reflected as a mirror of general health. Throughout the world, oral mucosal lesions (OMLs) are commonly seen in many populations. Mucosal lesions may be identified during regular dental examinations and they diverge depending on age, gender and/or race. There are very limited studies pertaining to oral mucosal lesions as compared to periodontal diseases and dental caries. Smoking and drinking are positively associated with oral lesions such as oral submucous fibrosis (OSMF), leukoplakia, and oral lichen planus, which have the potential for malignant transformation.[1] The World Health Organization considered as potentially malignant lesions or disorders with the following conditions: leukoplakia, erythroplakia, lichen planus, actinic cheilitis, and oral submucous fibrosis. Oral leukoplakia is the most com-

mon premalignant oral lesion.[2]

Leukoplakia is the one of the most communal potentially malignant lesion occurred in the oral cavity. They are usually diagnosed at middle age and are commonly found in males due to smoking habit. Leukoplakia can be classified based on clinical presentation as homogeneous or non-homogenous. Homogenous lesions, which are usually thin, flat, asymptomatic, whereas non-homogenous are usually symptomatic with nodular, verrucous. Tobacco and areca nut use is the main risk factor for leukoplakia and OSMF. Leukoplakia can remain stable, or may progress to carcinoma. Oral leukoplakia needs to be differentiated from other white keratotic lesions including frictional keratosis and stomatitis nicotina, which do not have malignant potential.[3] Various oral premalignant lesions have risk for transferring into cancer. Conversely, all potentially malignant epithelial oral lesions should be

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diagnosed through microscopic examination because of apparent differences between clinical and histological diagnosis.[4] Hence there is a need of early identification of oral lesions and prompt treatment.

The aim of this study was to evaluate the prevalence of oral mucosal lesions, and location of lesion among participants aged 18 years and above, visiting to OPD department of Oral medicine and Radiology.

Materials and Method

This cross-sectional study was done to evaluate the prevalence of oral mucosal lesions and site preference for lesions. The study was carried out between March 2016 and August 2017. The study participants were consisting of patients visiting to the OPD department of Oral medicine and Radiology. Ethical clearance was obtained from institutional ethics committee and informed consent was attained from all the participants.

The World Health Organization (WHO) Oral Health Assessment Form was adopted for clinical evaluation and the findings were

recorded in the proforma. All subjects underwent a comprehensive type III clinical examination of the oral mucosa performed by two trained investigators. Demographic profile of all the participants was recorded including, gender, cigarette smoking, alcohol habits. The diagnosis of OML was performed in accordance with WHO criteria.[5]

The obtained data was tabulated and statistically evaluated using IBM SPSS statistical software version 18, Chicago, and frequency and distribution tables of oral mucosal lesions was obtained.

Result

Among total 826 participants, 200 had various oral mucosal lesions. The prevalence of different oral mucosal lesions in the present study was 24.2 %. Tables 1 indicates prevalence and distribution of oral mucosal lesions among the participants. Among the reported oral mucosal lesions in the present study, Oral submucous fibrosis was more prevalent (21%) followed by coated tongue (16%), aphthous ulcerations (12.5%), leukoedema (9%), candida lesions (8%), leukoplakia (6%), geographic/fissured tongue (5%), lichen lesions (4.5%), mucocele (4%), herpes lesions

Table 1. Prevalence and distribution of oral mucosal lesions among the participants.

| Lesion type (n=200) | Prevalence of lesion | Mean age (years) (%) | Male (%) | Female (%) |
|----------------------------|----------------------|----------------------|-----------|------------|
| Leukoplakia | 12 (6%) | 42.3 | 8 (4%) | 4(2%) |
| Coated tongue | 32(16%) | 38.6 | 18 (9%) | 14(7%) |
| Chewers mucosa | 5(2.5%) | 41.3 | 3 (1.5%) | 2(1%) |
| Herpes lesions | 6(3%) | 38.5 | 2 (1%) | 4(2%) |
| OSMF | 42(21%) | 39.7 | 31(15.5%) | 11(5.5%) |
| Apthous ulcerations | 25(12.5%) | 32.4 | 12(6%) | 13(6.5%) |
| Leukoedema | 18(9%) | 43.7 | 12(6%) | 6(3%) |
| Candida lesions | 16(8%) | 43.2 | 10(5%) | 6(3%) |
| Radiation mucositis | 5(2.5%) | 62.1 | 3(1.5%) | 2(1%) |
| Lichen lesions | 9(4.5%) | 45.3 | 5 (2.5%) | 4(2%) |
| Malignancy | 3(1.5%) | 58.3 | 2(1%) | 1(0.5%) |
| Irritational fibroma | 4(2%) | 38.5 | 2 (1%) | 2(1%) |
| Linea alba | 3(1.5%) | 28.5 | 1(0.5%) | 2(1%) |
| Smokers palate | 2(1%) | 56.5 | 2(1%) | 0(0) |
| Geographic/fissured tongue | 10(5%) | 28.2 | 4 (2%) | 6(3%) |
| Mucocele | 8(4%) | 21.2 | 3(1.5%) | 5(2.5%) |
| Total | 200 | | 118 (59%) | 82(41%) |

Table 2: Oral mucosal lesions distribution according to location.

| Location of the lesion | Frequency (N) and Percentage |
|------------------------|------------------------------|
| Buccal mucosa | 92 (46%) |
| Vestibular region | 30 (15%) |
| Tongue | 26 (13%) |
| Lip/labial mucosa | 35 (17.5%) |
| Floor of mouth | 4 (2%) |
| Palate | 6 (3%) |
| Gingival | 7 (3.5%) |
| Total | 200 (100) |

(3%), chewers mucosa (2.5%), radiation mucositis (2.5%), irritational fibroma (2%), malignancy (1.5%), linea alba (1.5%), and smoker's palate (1%). The mean age for most of the lesion was above 40 years and 28.5 years for Linea alba and Geographic/fissured tongue. There was higher prevalence of OSMF in males (15.5%) compared to females (5.5%). There is not statistically significant difference between males and females for other lesion in the present study.

Table 2 indicates the location of various oral mucosal lesions. Lesion location was more frequent at buccal mucosa (46%) followed labial mucosa (17.5%), vestibular region (15%), tongue (13%), gingival (3.5%), palate (3%) and floor of mouth (2%).

Discussion

The prevalence of oral mucosal ranges from 10.8 to 61.6% in several peoples. [6] Oral health is significant to the quality of life of all individuals. Oral lesions can interfere with daily social activities in affected patients through impact on swallowing and speech, mastication, and symptoms such as halitosis, xerostomia, or dysesthesia. Suitable management of a patient with an oral lesion begins with an correct diagnosis. Oral soft tissue evaluation is critical and should be done in a systematic means. Epidemiologic studies provide important information to understand the prevalence, incidence, and severity of oral disease in a specific population. [4]

Mehta and Pindborg conducted a survey on leukoplakia and oral cancer on 50,915 participants and found 0.2 to 4.9% prevalence for Leukoplakia and 3.0% to 12.4% prevalence for epithelial atypia. They stated that hookli smoking and reverse smoking were related with leukoplakia. [7] Vlad et al, evaluated the prevalence of oral leukoplakia and correlated it with age, gender, age, alcohol and smoking habit. Prevalence of 3.32% for homogenous leukoplakia and it was commonly found on cheek, lip and tongue and commonly in males. [2] Feller and Lemmer from their review stated that, leukoplakia is considered as precancerous lesion and there is a link between human papillomavirus (HPV) with oral leukoplakia. [3]

Kumar et al evaluated the prevalence, distribution and associated risk factors of oral mucosal lesion on 1048 patients. They found 18.89% prevalence of oral mucosal lesions and 5.63% premalignant lesions. They concluded that smoking, chewing habits, and alcohol use as main factor for higher prevalence of premalignant lesions. [1] These findings are similar to our results. Bokor-Bratić evaluated the prevalence of precancerous oral lesions on 2385 participants. In this majority of cases was homogeneous type as compared to non-homogeneous type. They found leukoplakia above 40 years of age. [8] Ambika et al found oral mucosal lesions in more than half of the participating children. [9] Kamble et al found 39.1% of prevalence of Oral lesions. [4]

Mathew et al assessed the prevalence of oral mucosal lesions and they found most commonly Fordyce's conditions (6.55%) followed by frictional keratosis (5.79%), fissured tongue (5.71%), and leukoedema. [10] Rooban et al evaluated the prevalence of various oral mucosal lesions. They concluded that subjects who misuse alcohol have poor oral hygiene and are at risk for the development of periodontal disease. It has been reported that, chronic alcohol exposure in rats causes oral mucosal atrophy, dys-

plastic changes, an increase in the size of the basal cell nuclei. [11] Oivio UM et al assessed the prevalence of oral mucosal lesions on 12,068 participants and they found various oral mucosal lesions in 81.8% of participants. Among that oral lichen planus was most common. [6] Pontes et al from their study found higher prevalence rates (21%) of OML. Nicotine stomatitis (33%) and leukoplakia (19%) were common oral lesions reported. Prevalence was more among males compared to females. [12] Sharma et al from their study found hyperkeratosis followed by leukoplakia and smoker's melanosis as a common oral lesions and cigarette/bidi and gutkha could be common cause for the oral lesions. [13] Saraswathi et al found OSF as prevalent oral lesions amongst who chewed pan-masala or gutkha or betel quid with or without tobacco. [14]

Toum et al from their study concluded that there is a need of adequate awareness about management of oral mucosal lesions. [15] Gambhir et al concluded from their study that there is need of community based awareness program for management of oral mucosal lesions. [16]

In the present study prevalence of different oral mucosal lesions was 24.2%. Oral submucous fibrosis was more prevalent (21%) which is similar to previous studies. [1, 12] In the present study due to smoking and tobacco chewing habit among males. There was higher prevalence of SMF in males (15.5%) compared to females (5.5%). Epidemiological survey can help in early diagnosis and management of various oral mucosal and premalignant lesions. There is need to create awareness among the public about various OML.

The drawback of the present study was smaller sample size and study didn't use microscopic examination for confirmation of premalignant lesions. Further long term studies are required on larger sample size with microscopic confirmation.

Conclusion

The results of this study convey significant information about the prevalence of oral mucosal lesions amongst patients pursuing dental care. The study offers baseline data for forthcoming studies about the prevalence of oral lesions in the general public.

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