

## Original Research

### Prevalence of Oral Mucosal Lesions in Sriganganagar, Rajasthan

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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 main aim of our study was to assess the prevalence and distribution of oral mucosal lesions in population of Sri Ganganagar, Rajasthan. **Materials and Method:** Total of 453 patients aged 18 and above reporting to the outpatient department of Oral Medicine and Radiology of Maharaja Ganga Singh Dental College & Research Centre, Sri Ganganagar were selected for the prospective study. The diagnosis of Oral mucosa lesions 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 453 participants, 100 subjects showed various oral mucosal lesions. Out of 100 participants oral submucous fibrosis was more prevalent (21%) followed by coated tongue (16%), aphthous ulcerations (13%), leukoedema (9%), candida lesions (8%), leukoplakia (6%), geographic/fissured tongue (5%), lichen lesions (4%) and mucocele (4%). Lesion location was more frequent at buccal mucosa (46%) followed labial mucosa (17%), vestibular region (15%), and tongue (13%). There was higher prevalence of OSMF in males (15%) compared to females (6%). There was no statistically significant difference between males and females for other lesion in the present study. **Conclusion:** The results of this study provide an important update on the prevalence and distribution of oral mucosal lesions in patients seeking dental treatment. This study provides a basis for future research on the prevalence of oral mucosal lesions in the general population.

**Keywords:** Prevalence, Oral Mucosal Lesions, Aphthous, OSMF.

Received: 21 October, 2024

Accepted: 17 November, 2024

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**This article may be cited as:** Singh A, Yadav S, Kumar R, Mehta R, Mutneja S. Prevalence of Oral Mucosal Lesions in Sriganganagar, Rajasthan. J Adv Med Dent Scie Res 2024; 12(11):62-65.

#### INTRODUCTION

The orofacial region is affected by various oral mucosal lesions (OMLs). Oral mucosa is explicitly affected by seven oral potentially malignant disorders. Various other OMLs include several types of cysts, benign and malignant tumours, inflammatory lesions, lesions associated with tobacco, areca nut, betel nut chewing, and others; immune-mediated lesions like recurrent aphthous stomatitis (RAS) and oral pemphigus, which pose a challenge in the management and may become life-threatening if early diagnosis fails. These lesions cause disturbance in day-to-day activities as they interfere with the consumption of food, causing pain, burning sensation, facial asymmetry, and others. In contrast, other normal variants of oral mucosa do not cause harm but can be misdiagnosed as a potentially life-threatening condition. This makes it necessary for us to have the

proper knowledge about oral lesions (OLs) and the normal variants for proper management.[1]

Mucosal lesions may be identified during regular dental examinations and they develop 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.[2] 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 common premalignant oral lesion.[3]

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.[4] Various oral premalignant lesions have risk for transferring into cancer. Conversely, all potentially malignant epithelial oral lesions should be diagnosed through microscopic examination because of apparent differences between clinical and histological diagnosis.[5] Hence there is a need of early identification of oral lesions and prompt treatment.

The aim of this study was to assess the prevalence and distribution of oral mucosal lesions, and location of lesion among patients aged 18 years and above, visiting to OPD Department of Oral Medicine and Radiology of Maharaja Ganga Singh Dental College & Research Centre, Sri Ganganagar

#### 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 October 2023 and September 2024. 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 three 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.[6]

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 453 participants, 100 had various oral mucosal lesions. The prevalence of different oral mucosal lesions in the present study was 22.07%. Table 1 indicates prevalence and distribution of oral mucosal lesions among the participants. Graph 1 shows mean age of different oral mucosal lesions. Among the reported oral mucosal lesions in the present study, Oral sub-mucous fibrosis was more prevalent (21%) followed by coated tongue (16%), aphthous ulcerations (13%), leukoedema (9%), candida lesions (8%), leukoplakia (6%), geographic/fissured tongue (5%), lichen lesions (4%), mucocele (4%), herpes lesions (3%), chewers mucosa (3%), radiation mucositis (2%), irritational fibroma (2%), malignancy (2%), linea alba (1%), 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%) compared to females (6%). There is not statistically significant difference between males and females for other lesion in the present study.

Table 2 and Graph 2 shows the location of various oral mucosal lesions. Lesion location was more frequent at buccal mucosa (46%) followed labial mucosa (17%), vestibular region (15%), tongue (13%), gingival (4%), palate (3%) and floor of mouth (2%).

**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	6 (6%)	42.3	4 (4%)	2 (2%)
Coated tongue	16(16%)	38.6	9 (9%)	7(7%)
Chewers mucosa	3(3%)	41.3	2 (2%)	1(1%)
Herpes lesions	3(3%)	38.5	1 (1%)	2(2%)
OSMF	21(21%)	39.7	15(15%)	6(6%)
Aphthous ulcerations	13(13%)	32.4	6(6%)	7(7%)
Leukoedema	9(9%)	43.7	6(6%)	3(3%)
Candida lesions	8(8%)	43.2	5(5%)	3(3%)
Radiation mucositis	2(2%)	62.1	1(1%)	1(1%)
Lichen lesions	4(4%)	45.3	2 (2%)	2(2%)
Malignancy	2(2%)	58.3	1(1%)	1(1%)
Irritational fibroma	2(2%)	38.5	1 (1%)	1(1%)
Linea alba	1(1%)	28.5	0(0)	1(1%)
Smokers palate	1(1%)	56.5	1(1%)	0(0)
Geographic/fissured tongue	5(5%)	28.2	2 (2%)	3(3%)
Mucocele	4(4%)	21.2	2(2%)	2(2%)
Total	100		58 (58%)	42(42%)

**Table 2: Oral mucosal lesions distribution according to location.**

Location of the lesion	Frequency (N) and Percentage
Buccal mucosa	46 (46%)
Vestibular region	15 (15%)
Tongue	13 (13%)
Lip/labial mucosa	17 (17%)
Floor of mouth	2 (2%)
Palate	3(3%)
Gingival	4(4%)
Total	100 (100%)

## DISCUSSION

Prevalence and distribution of oral mucosal lesions vary between 10.8% and 61.6% in different individuals. [7] Oral health is important for all people to live a good life. Oral diseases can affect swallowing, speaking, chewing, and symptoms such as bad breath, dry mouth, or halitosis can affect daily relationships among affected patients. Appropriate treatment of patients with oral mucosal lesions begins with a correct diagnosis. Examination of the soft tissues of the mouth is very important and should be done appropriately. Epidemiological studies provide important information to understand the prevalence, incidence, and severity of oral diseases in a particular ethnic group.[5]

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.[8] 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.[3] 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.[4]

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 are main factors for higher prevalence of premalignant lesions.[2] These findings are similar to our results. Bokor-Bratiæ 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.[9] Ambika et al found oral mucosal lesions in more than half of the participating children.[10] Kamble et al found 39.1% of prevalence of Oral lesions.[5]

Mathew et al assessed the prevalence of oral mucosal lesions and they found most commonly Fordyce's granules (6.55%) followed by frictional keratosis (5.79%), fissured tongue (5.71%), and leukoedema.[11] 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, dysplastic changes, an increase in the size of the basal cell nuclei.[12] 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.[7] 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.[13] 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. [14] Saraswathi et al found OSF as prevalent oral lesions amongst who chewed pan-masala or gutkha or betel quid with or without tobacco. [15]

Toum et al from their study concluded that there is a need of adequate awareness about management of oral mucosal lesions.[16] Gambhir et al concluded from their study that there is need of community based awareness program for management of oral mucosal lesions.[17]

Ferreira et al concluded that the prevalence of Oral potentially malignant disorders (OPMDs) was 29.6%. Rural workers showed high vulnerability to the presence of OPMDs, as estimated prevalence exhibited was high.[18]

Current study showed prevalence and distribution of different oral mucosal lesions was 22.07%. Oral submucous fibrosis was most 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 OSMF in males (15%) compared to females (6%). Epidemiological survey can help in early diagnosis and prompt management of various oral mucosal and premalignant lesions. There is need to create awareness among the public about various Oral mucosal lesions and various serious consequences of these lesions.

The only shortcoming of this study was smaller sample size and limited use of microscopy to confirm precancerous lesions. Long term studies with larger

samples and more microscopic observations are needed.

## CONCLUSION

The results of this study provide an important update on the prevalence and distribution of oral mucosal lesions in patients seeking dental treatment. This study provides a basis for future research on the prevalence and distribution of oral mucosal lesions in the general population.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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