

ORIGINAL RESEARCH

Prevalence of Common Oral Mucosal Lesions in the North Indian population: Single Centre Clinical Observation Study

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ABSTRACT

Background: Although oral mucosal lesions (OMLs) are not morbid, occurrence of this often affects routine work, social appearance and mastication and swallowing. Region-wise prevalence studies helps to estimate the various strategies to prevent this condition. **Objective:** To determine the prevalence and distribution of OMLs of patients visited for oral and dental problems. **Methods:** All patients visiting to outpatient department were evaluated for oral problems and those with OMLs are selected for further investigations. Demographic characteristics were evaluated for these patients and were grouped based on age. Oral examination was performed using the Color Atlas of Common Oral Diseases and based on the history and clinical appearance; the OMLs were grouped in different categories. **Results:** Among 1600 patients, 625 (39.06%) were identified to have OMLs. We found male predominance 69.12% vs 30.88% in the OMLs. Patients with age >41 years (40.96%) are more susceptible for the development of these lesions and it is gradually decreases as age groups (36-41 years, 19.68%; 30-35 years, 13.76%; 24-29 years, 15.04% and 18-23 years, 10.56%). Most common OMLs were tobacco related lesions (n=222, 36.09%) followed by tongue lesions (n=116, 18.86%). **Conclusion:** The prevalence of oral mucosal lesions was more in the males and age more than 41 years. Tobacco consumption was found be another factor for the development of OMLs. The high prevalence of OMLs necessitates adequate awareness and management of these lesions in the general population. General practitioners and dental clinicians need to be more aware to conduct such studies to help developing strategies for future prevention.

Keywords: Oral mucosal lesions, Prevalence, Risk factors, Awareness and management, North Indian regions.

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INTRODUCTION

Oral health is as important as viability of other organs of the body. Unhygienic behaviour, carelessness and dietary habits leads to number of manageable as well as deleterious consequences related to mouth. The oral mucosa serves as a protective barrier against trauma, pathogens, and carcinogenic agents with the help of salivary components [1]. Among, oral mucosal lesions (OMLs) are common in many populations around the world. OMLs can interfere with daily personal as well as social activities in patients as it impacts on mastication, swallowing and speech, and symptoms such as xerostomia, halitosis, or dysesthesia [2]. Acute OMLs do not cause any kind of morbidity or mortality, however, early diagnosis of the wide variety of lesions in the oral cavity can prevent its chronic hazards to the patients. Proper clinical management of a patient with an oral

lesion starts with an accurate diagnosis. Oral soft tissue examination is crucial and should be done in a systematic manner to include all parts of the oral cavity [3].

Considering differences in the eating habits, methods of routine oral care and its awareness different geographical regions shows variable prevalence of oral diseases including OMLs. Basic information of prevalence studies of OMLs is essential to provide guidance to the proper initiative by healthcare administrations.

Knowing the prevalence and finding on the plausible causes can be used to prevent future occurrence and contribute toward the understanding of the natural history of a disease. With diversified culture variability is also significant in India. Epidemiological studies of OMLs in different geographical regions are very few as compared to

reports on dental caries or periodontal diseases. Accurate estimates of the epidemiology of oral lesions and a better understanding of the factors associated with their occurrence are essential for the establishment of adequate preventive and health promotion measures.

MATERIALS AND METHODS

The present study was conducted among 1600 new patients from suburban and rural areas who visited to outpatients unit of department of ENT Government Medical College, Budaun, Uttar Pradesh (India). Study duration was April 2019 to March 2020. Patients in whom an intraoral examination was not possible due to inadequate mouth opening, medically compromised patients were excluded from the study.

CLINICAL EXAMINATIONS

Patients were examined by single experienced practitioner from the department. For the ease of analysis, the selected patients were divided into four groups based on age: 18–23 years, 24–29 years, 30–35 years, and 36–41 years and >41 years old. Patient's demographic details were noted and were clinically examined using mouth mirrors under artificial light.

As a guide for diagnosis, clinical oral examination was performed using the Color Atlas of Common Oral Diseases [4].

Based on the history and clinical appearance, the oral mucosal lesions were grouped in 7 categories as normal variants, tobacco related, tongue lesions, potentially malignant disorders (PMD) and oral malignancies, reactive lesions, inflammatory and pigmented lesions. The collected data was entered into the computer, and frequency and distribution tables of OMLs were generated.

RESULTS

Total 1600 outpatients visited to the department of ENT during the study period. Among these, 625 (39.06 %) patients were diagnosed with OMLs (Table 1).

Among patients who are diagnosed with OMLs, 432 (69.12%) were males and 215 (30.88%) were females. The age of the participants ranged from 18 to 76 years (mean age, 36.56 years). Of the total sample, the most commonly affected age group was >41 years (40.96%), followed by 36–41 years (19.68%), 30–35 years (13.76%), 24–29 years (15.04%) and 18–23 years (10.56%) (Table 2).

Table 1: Prevalence of oral mucosal lesions as per clinical presentation

Oral Mucosal lesions	No of patients	%
Normal variants		
Leukoedema	16	1
Fordyce granules	30	1.875
Linea alba	9	0.5625
Tongue lesions		
Coated tongue	56	3.5
Hairy tongue	7	0.4375
Fissured tongue	18	1.125
Geographic tongue	30	1.875
Others	5	0.3125
Tobacco-related lesions		
Tobacco pouch keratosis	167	10.4375
Smokers palate	20	1.25
Tobacco induced pigmentation	23	1.4375
Lichenoid reactions	12	0.75
Malignant Lesions		
Leukoplakia	24	1.5
Lichen planus	21	1.3125
OSMF	17	1.0625
Squamous cell carcinoma	14	0.875
Inflammatory lesions		
Aphthous ulcer	22	1.375
Herpes labialis	26	1.625
Burns	4	0.25
Denture stomatitis	13	0.8125
Angular cheilitis	19	1.1875
Candidiasis	9	0.5625
Reactive lesions		
Pyogenic granuloma	5	0.3125
Traumatic ulcer	13	0.8125

Frictional keratosis	7	0.4375
Irritational fibroma	4	0.25
Mucocele	3	0.1875
Papilloma	3	0.1875
Pigmented lesions		
Melanotic macule	9	0.5625
Hemangioma	8	0.5
Nevus	11	0.6875
Total	625	39.06

Table 2: Distribution of oral mucosal lesions according to gender and age

Tobacco related lesions	Gender	Age range (Years)					Total
		18-23	24-29	30-35	36-41	>41	
Normal variants (n=55)	Male	7	6	6	6	10	35
	Female	1	2	4	5	8	20
Tongue lesions (n=116)	Male	14	12	10	16	24	76
	Female	6	7	5	8	14	40
Tobacco-related lesions (n=222)	Male	10	21	23	43	69	166
	Female	4	6	8	6	32	56
Malignant Lesions (n=76)	Male	3	7	6	12	24	52
	Female	2	7	4	3	8	24
Inflammatory lesions (n=93)	Male	9	10	8	10	27	64
	Female	3	5	4	6	11	29
Reactive lesions (n=35)	Male	3	2	4	3	11	23
	Female	1	4	1	1	5	12
Pigmented lesions (n=28)	Male	2	4	3	0	7	16
	Female	1	1	0	4	6	12

DISCUSSION

OML is any abnormal kind of swelling, alteration in color, surface aspect, or loss of integrity of the inner oral mucosal surface. Most of the oral lesions are benign in nature and many times require no active treatment, but just a care. Some of the lesions are associated with significant pathology and needs immediate treatment, which otherwise often leads to a significant health problem with considerable morbidity. The prevalence studies are helpful for deciding about the strategies for the prevention of this common problem in the common citizens or vulnerable population.

In the present study we have evaluated the prevalence of different oral lesions in the north Indian regions. The prevalence of OMLs in our study was 39.06%. Similar range of prevalence was found in previous studies focused on Indian population such as Kamble et al., (39.1%) in population in western Maharashtra, Mathew et al. (41.2%) in south India and Sandeepa et al. (42.2%) in Kodava population in Coorg District [5-7]. Lower prevalence of OMLs was also reported at 11.33% by Shivakumar et al. in Bangalore [8] and 16.8% in north Indian population by Bhatnagar et al., [9]. On the other hand, higher

prevalence is also found in a tobacco users and denture wearers in the North Indian population (61.8%) [10] and geriatric Indian population (64%) [11].

When we further evaluated the gender prevalence of OMLs, we found male predominance (n=432, 69.12%) versus females (n=193, 30.88%). Similar pattern of male predominance was also reported in a geriatric Indian population [11]. However, majority of the studies have not confirmed differences in prevalence of the lesions. In the present study, occurrence of higher rate of OMLs in males may be due to the higher number examined (985 males vs. 615 females) and the higher prevalence of tobacco use by males. In the present study we have found that among 985 males 460 (46.7%) were regular consumers of tobacco or related products. On contrast, only 14.47% (89/615) accepted for their habit of tobacco consumption. The most frequent OMLs in the present study were tobacco-related lesions (36.09%). Total 166 (27%) males were affected with oral lesions due to tobacco consumption vs only 56 (9%) females. Smokeless tobacco use is very common in India. Tobacco or tobacco-containing products are chewed or sucked as a quid,

or applied to gums, or inhaled. Since spit tobacco being habitually placed in the mucobuccal fold in the mandibular anterior or buccal regions it has higher chance to cause tobacco pouch keratosis. Much tobacco related factors are responsible for the development of such lesions. These are early onset, frequency, type and substandard quality of tobacco, amount of daily usage, and number of sites routinely used for tobacco placement[12].

The most commonly affected age group in our study was >41 years (40.96%). Prevalence studies focused on geriatric population have also supported our findings with higher prevalence of OMLs in older patients than in younger individuals [10]. Higher prevalence may be attributed to the causative factors such as oral mucosal disorders and aging which are susceptible to the infections, nutritional factors, metabolic changes, medication, prosthetic use, habits of alcohol or tobacco [10,13].

Prevalence of tongue lesions (18.86%) was the second most common OMLs in the present study. Tongue lesions include coated tongue (3.5%), hairy tongue (0.4%), fissured tongue (1.12%), geographic tongue (1.87%) and others (0.31%).

CONCLUSION

Our findings provide important information about the prevalence of oral mucosal lesions among patients from north Indian regions. Our study indicated the deleterious role of habit of tobacco consumption and aging in the development of oral lesions. More studies are warranted comprising more cohorts and large population. That will surely help to improve oral health in this country.

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