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Oral mucosal lesions in geriatric population - A clinico-epidemiological study

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Abstract

Background: Oral health is important to individuals of all age groups. Oral mucosal lesions and its normal anatomical variations are very common in all age group. The oral mucosa performs essential protective functions that plays an important role in the general health status of an individual. Any decline in the protective functions of the oral mucosa could expose the aging individual to a variety of pathogens and chemicals. During aging, oral epithelium becomes thinner and collagen synthesis also decreases, which leads to decreased tissue regeneration and disease resistance. The oral mucosa becomes permeable to toxic substances and more vulnerable to external carcinogens.

Objectives: To study the clinical pattern and the types of oral mucosal lesions in geriatric population.

To study the distribution and possible etiological factors of oral mucosal lesions in geriatric population.

Material and methods: The study was carried out from September 2016 to September 2019. All patients above 60 years of age, reporting to Dermatology OPD at GITAM institute of Medical sciences & Research, Visakhapatnam, Andhra Pradesh were examined and evaluated for oral mucosal lesions. A detailed medical history including demographic data, chief complaints related to skin, presence of oral mucosal lesions, medical disorders, medications used, and habits (smoking, alcohol consumption, chewing of betel nut, other forms of tobacco use, prosthetic or other appliances use) taken and detailed general physical examination was made to see any associated lesions elsewhere in the body. The clinical diagnosis was established and classified. Correlation, if any, with etiological factor was assessed. In relevant cases, necessary investigations were done with a written consent from the patient, to establish the definitive diagnosis.

The final definitive diagnosis was based on histopathological examination given by pathologists and its clinical correlation. The data collected was documented in the prescribed proforma and further validated by the consultants.

Results: A total of 130 cases fulfilling above 60 years with oral mucosal lesions who presented to Dermatology OPD were enrolled in this clinical study. In the present study, majority of the patients, were in the age group of 60-69 years (71%), followed by the age group of 70-79 years (24%), least were the age group of 60-69 year (5%) and there was no cases above 90 years. Males (56.2%) were affected marginally more than females (43.8%). Buccal mucosa was the most frequently involved site in 58% of the study population. In the present study, common risk factors associated with oral mucosal lesions observed were smoking (40%), alcohol (17.7%), other forms of tobacco use (46.2%), betel nut chewing (52.3%), dentures (12.3%) and stress (13.8%). A total 130 conditions, classified into 8 various etiological categories. Malignancy (25.4%) was the most common etiology, followed by dermatological etiology (19.2%) and then premalignant and infective etiologies (16.9%). Other miscellaneous conditions (13.8%), inflammatory (4.6%), developmental (2.3%) and systemic etiologies (0.8%) were the uncommon observed etiologies. Amongst malignancy, squamous cell carcinoma was the common clinical type. The second most frequently observed condition was oral candidiasis (12.4%). Amongst dermatological conditions, most common was oral lichen planus 8%, followed by vitiligo 6%, pemphigus 3% and psoriasis (2%). The least conditions were Steven Johnson syndrome, systemic lupus erythematosus and discoid lupus erythematosus. Leukoplakia (8.5%) was the most common premalignant conditions, followed by oral submucous fibrosis (7.7%).

Conclusion: The present study brings to light various oral mucosal lesions in geriatric population, which also highlights the importance of early diagnosis of oral precancerous lesions before it develops into malignancy.

Keywords: oral lesions, candidiasis, carcinoma, lichen planus

Introduction

Oral health is important to all individuals as the oral mucosa performs essential protective functions that plays an important role in the general health status of an individual^[1]. As per

WHO definition, a population aging more than 60 years old should be considered to be an elderly population [2].

In the aging individual, the systemic comorbidities and concurrent medications can cause decline in the protective function which could expose the oral mucosa to a variety of pathogens and chemicals. Aging can cause atrophic changes like thinning of oral epithelium and reduction in collagen synthesis which leads to impaired tissue regeneration and disease resistance [2].

Various oral carcinogens including smoking, alcohol, other forms of tobacco and habits of chewing betel quid or areca nut have been found as etiological factors for oral precancerous and cancerous lesions [2, 3]. Cancers are the increasing cause of mortality in patients with oral mucosal lesions. It can be seen on the lip, buccal mucosa, floor of the mouth, palate as well as on the tongue. Oral cancer is one among the top three types of cancers in India [3].

Reduced salivary gland function in aging, can predispose to infections of oral mucosa, commonly oral candidiasis [2, 3]. Dermatologic diseases have got special attention in oral medicine as oral mucosal lesion (OML) can be the primary clinical feature or sometimes the only sign for various mucocutaneous diseases [4].

Since there is a paucity of literature in various studies about oral mucosal lesions in the Indian geriatric population, the present study aimed to document the clinical types of oral mucosal lesions in geriatric population and also to study their distribution with possible etiological factors which will be valuable in planning future oral health studies.

Aims and objectives

- To study the clinical pattern and the types of oral mucosal lesions in geriatric population.
- To study the distribution and possible etiological factors of oral mucosal lesions in geriatric population.

Material and methods

The study was carried out from September 2016 to September 2019. All patients above 60 years of age, reporting to Dermatology OPD at GITAM institute of Medical sciences & Research, Visakhapatnam, Andhra Pradesh were examined and evaluated for oral mucosal lesions. A detailed medical history including demographic data, chief complaints related to skin, presence of oral mucosal lesions, medical disorders, medications used, and habits (smoking, alcohol consumption, chewing of betel nut, other forms of tobacco use, prosthetic or other appliances use) taken and detailed general physical examination was made to see any associated lesions elsewhere in the body. The clinical diagnosis was established and classified. Correlation, if any, with etiological factor was assessed. In relevant cases, necessary investigations were done with a written consent from the patient, to establish the definitive diagnosis.

The final definitive diagnosis was based on histopathological examination given by pathologists and its clinical correlation. The data collected was documented in

the prescribed proforma and further validated by the consultants.

Criteria for selection

a. Inclusion criteria

All patients above 60 years having oral mucosal lesions. Irrespective of treatment taken

b. Exclusion criteria

Patients with medical emergencies like toxic epidermal necrolysis, burns, corrosive lesions and trismus grade 3. The collected data were analyzed by the SPSS 22 version software. Chisquare test was used as test of significance for qualitative data.

Results

In our study after screening 5257 patients above 60years, 130 patients with oral mucosal lesions were enrolled for the study, showing a prevalence of 2.47%.

Age distribution

Majority of the patients, 93 (71%) were in the age group of 60-69 years, followed by 31 (24%) cases in the age group of 70-79 years, 6 (5%) cases in the age group of 80-89 years and there was no cases above 90 years.

Table 1: Age distribution of the study population.

Age Distribution		
	Number	Percentage
60 to 69 years	92	70.8%
70 to 79 years	32	24.6%
80 years and above	6	4.6%

Gender distribution

In the study 43.8% were females and 56.2% were males.

Table 2: Gender wise distribution of the study population

Gender distribution		
	Number	Percentage
Male	73	56%
Female	57	44%
Total	130	100

Site of involvement

In the present study, the commonest site affected was the buccal mucosa in 75 cases (58%), next being involved in patients were tongue in 38 cases(29%), labial mucosa in 19(15%), lips in 15(12%) and hard palate in 11(8%).

Table 3: Distribution of oral mucosal lesions.

Site* of involvement	Number	Percentage
Buccal mucosa	75	58%
Tongue	38	29%
Labial mucosa	19	15%
Lips	15	12%
Hard palate	11	8%

*more than one site may be involved.

Table 4: Risk factors associated with oral mucosal lesions.

		Number	Percentage
Betel quid	No	62	47.7%
	Yes	68	52.3%
Tobacco	No	70	53.8%
	Yes	60	46.2%
Smoking	No	78	60.0%
	Yes	52	40.0%
Alcohol	No	107	82.3%
	Yes	23	17.7%
Stress	No	112	86.2%
	Yes	18	13.8%
Dentures	No	114	87.7%
	Yes	16	12.3%

Clinical types of oral mucosal lesions

Each etiological conditions were subdivided as following clinical types and their subtypes based on clinical and histopathological evaluation.

Table 5: Clinical types of oral mucosal lesions in the study population.

Clinical types	Number	Percentage
Oral Carcinoma 33(25.4%)		
Squamous cell carcinoma	32	97%
Adenoid cystic carcinoma	1	3%
Oral Candidiasis 16 (12.4%)		
Hypertrophic type	12	75%
Atrophic type	4	25%
Leukoplakia 11 (8.5%)		
Homogenous	8	73%
Speckled	3	27%
Oral Lichen Planus 10 (7.7%)		
Reticular type	7	70%
Atrophic type	2	20%
Actinic type	1	10%
Vitiligo 8 (6.2%)		
Vitiligo vulgaris	2	25%
Mucosal vitiligo	6	75%
Apthous Ulcer 8 (6.2%)		
Minor apthous ulcer	6	75%
Major apthous ulcer	2	25%
Herpes Simplex 7 (5.4%)		
Herpes labialis	7	100%
Pemphigus 4 (3.1%)		
Pemphigus vulgaris	3	75%
Pemphigus foliaceus	1	25%
Cheilitis 2 (1.5%)		
Granulomatous cheilitis	1	50%
Actinic cheilitis	1	50%
Others		
Oral Submucous Fibrosis	10	7.7%
Drug Induced Mucositis	6	4.6%
Smoker's Melanosis	4	3.1%
Fissured Tongue	3	2.3%
Fordyce Spot	2	1.5%
Geographic Tongue	2	1.5%
Angina bullosa haemorrhagica	1	0.8%
Melanoplakia	1	0.8%
Discooid Lupus Erythematosus	1	0.8%
Steven Johnson Syndrome	1	0.8%
Systemic Lupus Erythematosus	1	0.8%
Erythroplakia	1	0.8%

Oral carcinoma

The most common clinical diagnosis the present study is

oral carcinoma.

Age range of our study population was more than 60 years, with the highest prevalence seen in the age group of 60-69 years with 23 cases (70%).

- Oral carcinoma was frequently observed in males 19 (58%) cases in comparison to females with 15 (42%) cases.
- The buccal mucosa was predominantly involved in 28 (85%) cases. Followed by tongue in 4 (12%) cases and lips in 1 case (3%) respectively.
- Predominant risk factors associated with oral carcinoma were smoking in males with 17 cases, whereas in females use of other forms of tobacco with 9 cases (45%), followed by betel and areca nut chewing in 8(42%).



Fig 1: Ulceroproliferative Squamous Cell Carcinoma of buccal mucosa

Oral candidiasis

Oral candidiasis was the second most common clinical diagnosis the present study.

In present study, oral candidiasis was more frequently observed in males with 12 (75%) cases than in females with 4 (25%) cases.

- Age group of 60-69 years showed 11 (70%) cases followed by 70-79 years with 5 (31%).
- Hypertrophic type candidiasis was the most common subtype in 12 (75%) cases, followed by atrophic type 4 cases (25%).
- Tongue was the most common site affected in all 16 cases.
- Medical illness (75%) was the common underlying predisposing factor for oral candidiasis.

Oral lichen planus

In the present study, oral lichen planus was more frequently observed in males with 6 (60%) cases than in females with 4 (40%) cases. Age group of 60-69 years showed 5 (50%) cases followed by 70-79 years with 3 (30%).

- Reticular type of oral lichen planus was the predominant subtype in 7 (70%) cases, followed by atrophic type 2 cases (20%).
- Buccal mucosa was the most common site affected in 9 cases.
- Medical illness like diabetic mellitus (70%) was the common predisposing factor for oral lichen planus. Other frequently observed risk factors were betel nut chewing, use of other forms of tobacco and use of dentures.



Fig 2: Reticular lichen planus on buccal mucosa

Others

Aphthous ulcer (n=8, 6%), herpes infection (5%), drug induced mucositis (5%), smokers melanosis (n=4, 3%), geographic tongue (2%), Fordyce spot (2%), cheilitis (2%), melanoplakia (2%), angina bullosa hemorrhagica (n=1, 1%).

Discussion

Oral mucosal lesions are common findings representing a wide spectrum of conditions, ranging from benign physiological entities to dysplasia and squamous cell carcinoma.

Though the prevalence of oral lesions in general population has been documented based on clinical evaluation in other parts of the world like Turkey and Yemen limited information is available in rural or semi-urban population of India^[1, 2].

The present study includes a total of 130 clinically diagnosed cases of oral mucosal lesions.

In our study after screening 5257 patients above 60years, 130 patients with oral mucosal lesions were enrolled for the study. In our study, the prevalence of oral mucosal lesions was 2.47% which was consistent to the prevalence in Turkish population (2.2%)^[4]. The prevalence rates of oral mucosal lesions varies with different geographical, risk habits, genetic factors and sociodemographic characteristics of the study populations^[3].

Similar to few other studies^[1, 2] in the present study mean age of study population was 65.64 ± 6.1 years. Majority of subjects were in the age group 60- 69 years (70.8%), followed by 70- 79 years (24.6%). This can be because most of the individuals in their advancing age quit their addictions due to other medical reasons, as a result the incidence of oral mucosal lesions will also decrease significantly. However above 70 age group (52%) showed the highest incidence in Bahia study^[5].

In concordance with various other studies^[1, 2] a male preponderance of 56.2% was seen in our study whereas similar study in elderly Venezuelan population^[4] females were commonly affected than males. Sex differences in the occurrence of oral mucosal lesions might be attributed to the higher prevalence of deleterious oral habits among males in our study population^[6].

In the present study, the predominant risk factors were betel quid chewers (52.3%), closely followed by use of other forms of tobacco (46.2%), smoking (40%) and alcohol (17.7%). Less common risk factors were ill fitting dentures (12.3%) and stress (13.8%). This is consistent with data

reported by other studies^[1, 2]. Most of the patients had more than one risk factors for the development of oral mucosal lesions. Smoking was the most common risk factor in males. Followed by use of other forms of tobacco and betel nut chewing. However in females, betel and areca nut chewing followed by other forms of tobacco usage and stress were the commonly associated risk factors elicited. A significant difference in smoking and alcohol as risk factors between males and females observed was consistent with other studies^[6].

The present study showed bidi smoking was significant indicator for oral mucosal lesions such as oral carcinoma (59%), leukoplakia (54%), oral submucous fibrosis (36%) and smokers melanosis (4%) with duration and magnitude of habits had a significant effect in the development of oral lesions which is supported by other studies^[7].

Females were addicted to chewing habits more than smoking. Habitual betel and areca nut chewers had more prevalence (46%) of oral submucous fibrosis compared to others. During betel nut chewing, endothelial damage may be induced by areca nut components and leading to the pathogenesis of OSF, periodontitis, and endothelial dysplasia which was supported by the studies done in Chennai³ and China.⁸ 60% females gave the history of eating supari (plain areca nut) and 49% females gave the history of using other forms of tobacco. Women in many rural areas believe that tobacco has many medicinal properties in keeping the mouth clean, getting rid of a foul smell, curing toothache, controlling morning sickness.¹⁴³

In the present study, among various etiologies encountered, 25.4% had malignant lesions, 19.2% had dermatological lesions, 16.9% were infective lesions and premalignant lesions, 13.8% had other lesions, 4.6% had inflammatory lesions, 2.3% had development lesions and 0.8% had systemic lesions^[9].

Oral candidiasis, the second most common diagnosis in our study population and the common infective condition in elderly population. This can be because of their reduced salivary secretion, concurrent comorbidities like diabetics and immunosuppression caused by other medications^[2, 3].

Out of total 22 cases of premalignant conditions, leukoplakia was the most common etiology followed by oral submucous fibrosis. In our study, premalignant conditions showed significant association with smoking and other forms of tobacco with male preponderance. This result was supported by few other studies^[8, 10].

Conclusion

- The present study brings to light various oral mucosal lesions in geriatric population, which also highlights the importance of early diagnosis of oral precancerous lesions before it develops into malignancy.
- The present study reveals the clinical types of oral mucosal lesions in geriatric population and also their distribution with possible etiological factors which will be valuable in planning future oral health studies.

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