

Prevalence of oral mucosal lesions in geriatric patients in a south Indian population – A cross-sectional study

¹Lisa Elizabeth Jacob, Department of Oral Medicine and Radiology, Pushpagiri College of Dental Sciences.

²Anju Mathew, Department of Oral Medicine and Radiology, Pushpagiri College of Dental Sciences.

³Anuna Laila Mathew, Department of Oral Medicine and Radiology, Pushpagiri College of Dental Sciences.

Corresponding Author: Lisa Elizabeth Jacob, Department of Oral Medicine and Radiology, Pushpagiri College of Dental Sciences.

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Abstract

As the global life expectancy is increasing steadily, a greater emphasis should be given to the oral health of geriatric patients. Oral health serves as an indicator of general systemic health. Oral health can also adversely affect systemic health and hence the early detection and timely management of oral lesions is of utmost importance. The aim of this study was to determine the prevalence of oral mucosal lesions among geriatric patients in a South Indian Population. The study involved 200 geriatric patients. The most commonly occurring oral mucosal lesions were fissured tongue, oral candidiasis, geographic tongue, depapillation and smoker’s palate.

Keywords: Geriatric, Oral Mucosal Lesions, Elderly, Oral Mucosa

Introduction

As the global life expectancy is on the rise, the elderly now make up a significantly large portion of the

population.¹ It has been estimated that by 2050, the number of elderly people in India will increase to 324 million, accounting for more than 7.7% of the population.²

The well-being and overall functioning of the individual may be adversely affected by a decline in the physical health as a result of age-related changes.³

According to WHO, individuals above the age of 60 years in developing countries are considered to be elderly.⁴ Geriatric dentistry or gerodontics is defined as the delivery of dental care to older adults involving the diagnosis, prevention and treatment of problems associated with normal ageing and age-related diseases as part of an interdisciplinary team with other health care professionals.⁵ As a part of aging, various functional and structural changes may occur affecting the oral and perioral region.⁶

The prevalence of oral lesions and the treatment needs of the geriatric population can vary according to the country, geographic location and in different communities.⁷

Hence, there exists a need to evaluate the oral manifestations in various ethnic groups. This study aims to assess the prevalence of oral mucosal lesions among Geriatric patients in a South Indian population and to assess the association of prevalence between both gender and age groups.

Materials and methods

The study was a cross-sectional study conducted in the Department of Oral Medicine and Radiology for duration of 3 months. A total of 200 geriatric patients were included in the study consisting of 100 males and 100 females. The patients were divided into 3 age groups as follows:

Group I: 60-69 years

Group II: 70-79 years

Group III: 80-89 years

All patients 60 years and above, who were willing to participate were included in the study. Patients below 60 years of age were excluded in the study. The patients were explained regarding the purpose of the study and oral examination was carried out with consent. The procedures carried out were in alignment with the Helsinki Declaration. Patients were examined on the dental chair using adequate illumination using overhead electrical lighting, mouth mirror, explorer, tweezer, tongue depressor and gauze. The mucosa was examined thoroughly and all findings were noted on the case sheet. After the detailed examination, patients with oral mucosal lesions were given the appropriate treatment. The findings were documented on an excel sheet and subjected to statistical analysis. Age was represented as mean and as standard deviation. All categorical variables were tabulated as percentage and frequency. T test was

used to compare the difference in the prevalence of oral mucosal lesions between the genders and ANOVA test to compare the prevalence of the manifestations between the age groups.

Results

A total of 200 patients were selected for the study, including 100 males and 100 female patients. There were 118 patients in group I, 68 patients in group II, and 14 in group III. The age of the patients ranged from 60-88 years with a mean age of 68.67 years and standard deviation of 6.79.

The medical history of the patients was as follows: 30% of patients had hypertension, 28% diabetes mellitus, 27% dyslipidemia, 15% thyroid diseases, 13% cardiac diseases, 6% asthma, 2.5% hypotension, 2% peptic ulcer, 2% neurological diseases, 2% hepatic diseases, 1.5% history of cancer, 1.5% renal diseases and 0.5% stroke.

With respect to habit history, 9.5% of patients were cigarette smokers, 2.5% beedi smokers, 6.5% chewed areca nut, 8% chewed tobacco or pan masala and 12% consumed alcohol.

A total of 104 (52%) patients had at least one oral mucosal lesion. With respect to gender, out of 104 patients with manifestations, 58 (55.8%) were male and 46 (44.2%) were female Graph 1 and this difference was not found to be statistically significant at p value 0.84.

With respect to age, 56 patients (53.8%) with manifestations were in group I, 40 (38.5%) in group II and 8 (7.7%) in group III and this difference was found to be statistically significant at p value <0.00001.

The most commonly occurring manifestation was fissured tongue at 13.5% and the least common were hematoma and pemphigus vulgarus at 1%. All oral manifestations in order of frequency are given in Table 1.

Discussion

Oral mucosal lesions have been found to have a higher prevalence in geriatric patients compared to younger age groups. This may be primarily due to aging, various systemic illnesses, drug related manifestations and oral and denture hygiene.^{6,7}

The distribution of lesions can vary among different populations. These differences may be due to ethnic variations, clinical definition of lesions, level of education and the exposure to tobacco products etc.⁸

Our study included 200 geriatric patients. Out of which, a total of 104 (52%) patients had oral mucosal lesions. This is comparable to a study conducted by Fatma et al on an Indonesian population where the prevalence was reported to be 50.81%.⁹

A study by Shet et al on an Indian population revealed the prevalence of oral manifestations among geriatric patients to be 48%.⁴ Santosh et al reported that 64% of geriatric patients had oral manifestations.⁷

With respect to gender, out of 104 patients with manifestations, 58 (55.8%) were male and 46 (44.2%) were female and this difference was not found to be statistically significant at p value 0.84. Similar findings were obtained by Santosh Patil et al where the geriatric male patients had more manifestations than the female patients. These gender differences may be attributed to the usage of cigarette, tobacco, areca nut, alcohol use among men in our study.⁷

The most commonly occurring manifestation was fissured tongue at 13.5%. Fissured tongue is a commonly encountered lesion of the tongue and is considered to be a normal variant. It is a benign condition and possibly genetically determined.^{10,11}

A study conducted by Sadeq et al also revealed that the most prevalent lesion in the elderly population in Yemen was fissured tongue at 34.2%.¹² Cesar et al reported the

prevalence of fissured tongue to be 6.3% in a Chilean elderly population.¹³

Oral Candidiasis is an opportunistic infection and has been found to occur commonly in the elderly population. There are several predisposing factors including dentures, poor oral health, hyposalivation, drugs, diabetes, malnutrition, malignancies, immunosuppression etc.^{14,15}

Oral Candidiasis had a prevalence of 13% in our present study. Patil reported a prevalence of 15% in a geriatric Indian population.⁷

Geographic tongue is a benign condition of the tongue characterized by chronic recurring inflammation of unknown cause. It is also called as erythema migrans, benign migratory glossitis and wandering rash of the tongue.¹⁶

Geographic tongue had a prevalence of 11% in the current study. Geographic tongue had a prevalence of 14.29% in a study by Fatma et al in-geriatric patients.⁹

Depapillation of the tongue is characterized by atrophy of the papilla. It may be due to mechanical, chemical or physical stimuli, alcohol abuse, nutritional deficiencies or systemic illnesses.¹⁷ Depapillation of the tongue was present in 10% of the geriatric patients. A similar prevalence of 15.4% was noted by Sami et al in the geriatric population.¹⁸

With respect to habit related lesions, smoker's palate had a prevalence of 9%, smoker's melanosis at 7.5%, leukoplakia at 6%, leukoedema at 4%, tobacco pouch keratosis at 3%, chewer's mucositis at 2%, erythroplakia at 1% and oral submucous fibrosis at 1% and were exclusively seen in male patients in our study.

Lichen planus is a chronic, autoimmune, inflammatory disease which affects the skin, oral and genital mucosa, nails and scalp.¹⁹ Oral lichen planus had a prevalence of 5%. Minic et al and Sadeq et al reported a prevalence of 3.3%, and 1.6% respectively.^{6,12}

Several local, systemic and denture associated characteristics are risk factors for the development of denture associated mucosal lesions in the geriatric population.²⁰ Denture associated lesions such as denture stomatitis and epulis fissuratum had a prevalence of 4% and 1% in our current study. This is similar to the study by Sadeq et al and Rohini et al, where the prevalence of denture stomatitis was found to be 2.9% and 2.66% respectively.^{12, 21}

With respect to ulcerative lesions, traumatic ulcers had a prevalence of 3.5% and aphthous ulcers at 1.5%. The prevalence of traumatic ulcers was reported to be 3.3% and 1.33% by Minic et al and Rohini et al.^{6, 21}

Other less commonly encountered lesions in our study among geriatric patients included, fibroma (3.5%), frictional keratosis (3%), median rhomboid glossitis (3%), Fordyce's granules (2.5%), melanotic macule (2%), thermal burns (1%), hematoma (0.5%) and pemphigus at 0.5%.

Conclusion

As the proportion of elderly individuals is increasing in the world population, increased emphasis must be placed on the early detection and timely management of oral conditions in geriatric patients. Regular dental visits must be encouraged. Oral health can also adversely affect systemic health and hence oral and general healthcare must go hand in hand. Oral health can also serve as an indicator of systemic health and hence a multidisciplinary approach should be considered in the management of geriatric patients.

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Legend Graphs and tables

Graph 1: Distribution of Oral Manifestations among Male and Female, Patients.

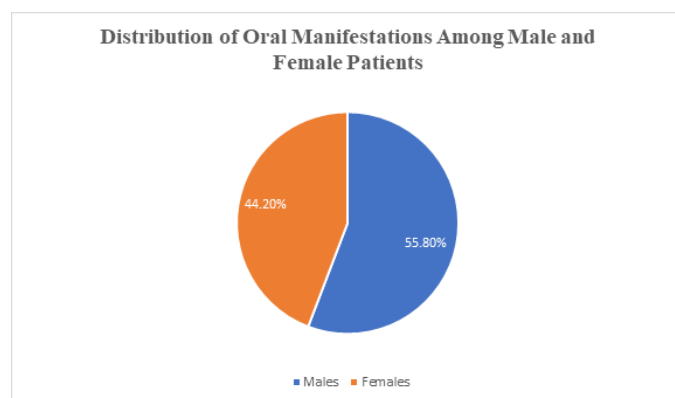


Table 1: Oral Manifestations Present with their Frequency expressed as percentage and distribution among the age groups.

Sn.	Name of manifestation	Total number (n)	Total percentage (%)	Prevalence in age groups		
				Group I N (%)	Group II N (%)	Group III N (%)
1	Fissured tongue	27	13.5%	11 (40.7%)	10 (37%)	6 (22.3%)
2	Candidiasis	26	13%	12 (46.2%)	12 (46.2%)	2 (7.6%)
3	Geographic tongue	22	11%	10 (45.5%)	10 (45.5%)	2 (9%)
4	Depapillation	20	10%	7 (35%)	13 (65%)	0 (0%)
5	Smoker's palate	18	9%	12 (66.7%)	6 (33.3%)	0 (0%)
6	Smoker's melanosis	15	7.5%	11 (73.3%)	4 (26.7%)	0 (0%)
7	Leukoplakia	12	6%	10 (83.3%)	2 (16.7%)	0 (0%)
8	Oral lichen planus	10	5%	2 (20%)	8 (80%)	0 (0%)
9	Angular cheilitis	9	4.5%	1 (11.2%)	4 (44.4%)	4 (44.4%)
10	Denture stomatitis	8	4%	0 (0%)	4 (50%)	4 (50%)
11	Leukoedema	8	4%	4 (50%)	4 (50%)	0 (0%)
12	Traumatic ulcer	7	3.5%	6 (85.7%)	1 (14.3%)	0 (0%)
13	Fibroma	7	3.5%	4 (57.1%)	2 (28.6%)	1 (14.3%)
14	Frictional keratosis	6	3%	4 (66.7%)	2 (33.3%)	0 (0%)
15	Median rhomboid glossitis	6	3%	0 (0%)	6 (100%)	0 (0%)
16	Tobacco pouch keratosis	6	3%	0 (0%)	6 (100%)	0 (0%)
17	Fordyce's granules	5	2.5%	2 (40%)	3 (60%)	0 (0%)
18	Melanotic macule	4	2%	4 (100%)	0 (0%)	0 (0%)
19	Chewer's mucositis	4	2%	0 (0%)	4 (100%)	0 (0%)
20	Aphthous ulcers	3	1.5%	0 (0%)	1 (33.3%)	2 (66.7%)
21	Thermal burns	2	1%	2 (100%)	0 (0%)	0 (0%)
22	Erythroplakia	2	1%	2 (100%)	0 (0%)	0 (0%)
23	Oral submucous fibrosis	2	1%	1 (50%)	1 (50%)	0 (0%)
24	Epulis Fissuratum	2	1%	2 (100%)	0 (0%)	0 (0%)
25	Hematoma	1	0.5%	1 (100%)	0 (0%)	0 (0%)
26	Pemphigus	1	0.5%	1 (100%)	0 (0%)	0 (0%)