

Prevalence of Oral Mucosal Lesions in Elderly Population

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ABSTRACT

The oral mucosa serves as a protective barrier against trauma, pathogens and carcinogenic agents. It can be affected by a wide variety of lesions and conditions, some of which may be harmless or with serious complications. Identification and institution of proper treatment of these lesions are an important part of total oral health care. Knowledge of clinical characteristics of oral mucosal lesions such as morphology, location, and duration helps in proper diagnosis and in identifying the type of oral mucosal lesion. The aim of the study is to determine the prevalence of oral mucosal lesions in elderly population. This is a retrospective study and the data is acquired from the patient archives of the department of Oral Medicine and Radiology. A total of 727 case histories were reviewed. Cross verification of data was done by photographic verification. Internal and external validity were verified. The required patient details were entered in the excel sheet. The data is transferred to SPSS for statistical analysis. Chi square test was used to find out association between different variables. The prevalence of oral mucosal lesions in elderly population was found to be 73.72 %. Male predilection (41.54 %) was seen for the oral lesions. The age group 50 - 55 years (30.81 %) was the most affected by the oral lesions and the lesions leukoplakia (16.09 %) and denture stomatitis (6.74 %) were the most common lesions. Educating patients about the ill effects of tobacco smoking and about proper denture maintenance can curtail the rising numbers of these lesions.

KEYWORDS

Oral mucosal lesions, Leukoplakia, Lichen planus, Denture stomatitis, Novel method, Prevalence, Geriatric patients, Elderly patients

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INTRODUCTION

Oral health is important to the quality of life of individuals of all age groups. Oral lesions can lead to interference of daily activities due to discomfort or pain that interferes with mastication, swallowing, and speech, producing additional symptoms such as halitosis, xerostomia, or oral dysesthesia, which hampers an individual's daily social activities.¹⁻³ The health of the ageing population is a great public health challenge. This challenge is further magnified in a developing economy.⁴⁻⁶ All the tissues of the human body undergo significant changes with age. This is also reflected in the oral cavity. Elderly individuals usually have a co-existing systemic disease and are more vulnerable to various diseases affecting the hard tissues and soft tissues of the oral cavity. World Health Organization defined aging as "The lifelong process of growing older at cellular, organ or whole- body level throughout the lifespan". The regressive changes related to old age make them susceptible to many chronic diseases, physical, and mental disabilities which restrict daily activities and reduction in self-care. Age-related changes predispose the oral cavity to various lesions, periodontal diseases, infections, caries and salivary gland diseases.⁷⁻⁹

Oral mucosa is an effective protective barrier and is commonly affected by lesions that may be innocuous to those that are malignant. Oral lesions impair the functioning of an individual leading to impaired speech and inability to eat.¹⁰⁻¹² The lesions may cause halitosis, dysesthesia or xerostomia. These symptoms may affect the social and everyday life of an individual. Deleterious habits, irregular or sharp teeth, ill-fitting prosthesis and poor oral hygiene are other factors that determine the occurrence of oral mucosal lesions.¹³⁻¹⁵ The oral lesions and treatment needs of the elderly patients differ according to every nation, geographic region within a country, and even in different communities. Therefore, identification of the prevalence of oral lesions in this section of the population is due to socioeconomic differences, medical and dental history, treatment expenditure, and any handicap.¹⁶⁻¹⁸

Oral mucosal lesions are more common among the elderly population. These groups of patients are at risk of developing many pathologies owing to increased occurrence of systemic diseases, age-related metabolic changes, nutritional deficiencies.^{19,20} They are also usually under long-term medications for systemic diseases. They also wear prostheses, and might have deleterious habits

like tobacco or alcohol.²¹⁻²³ Hence these patients are prone to a wide spectrum of lesions ranging from infections, neoplasms, manifestations of other systemic, hematological disorders. These lesions cause significant pain to these patients.^{21,24} Data from Oral health Surveys help in decision-making policies of the government and in developing prevention programs. These disease patterns could be altered by improving patient awareness, incorporating lifestyle changes and focusing on oral health.²⁵⁻²⁸ Hence, the present study was designed to study prevalence of oral mucosal lesions in elderly population, who are mostly negligent towards their oral health and are reluctant to consult dental professionals to treat their problems.^{29,30}

Our team has extensive knowledge and research experience that has translate into high quality publications.³¹⁻⁴⁸

MATERIALS and METHODS

Study Design

This is a retrospective study conducted in a private dental institution. The patient case records were reviewed for the necessary information by a trained examiner. In the present study the case records used were intraoral pictures of paediatric patients. Among patients who have visited the dental clinic of the institution, the records of 727 patients were inspected for the presence of oral mucosal lesions. The institutional ethical committee provided approval for the study.

Inclusion criteria

1. Adults from 50 years and older
2. Adults with oral mucosal lesions

Exclusion criteria

1. Adults less than 50 years of age
2. Children with more than one oral mucosal lesion

Sampling

A total of 727 adult patients who visited the dental institution were inspected for oral mucosal lesions. Convenient sampling method was used to select the patient for the study. The data was obtained from the archives of the Oral Medicine and Radiology department and were cross verified with patient case records.

Data Collection

All the data after thorough checking for duplicates, incomplete entries and cross verification with patient case records were entered in Microsoft excel spread sheet in order to organise the data. The variables obtained from the data included age, gender, oral mucosal lesions, types of oral mucosal lesions. Here the age and gender were the independent variables and the oral mucosal lesions were the dependent variable.

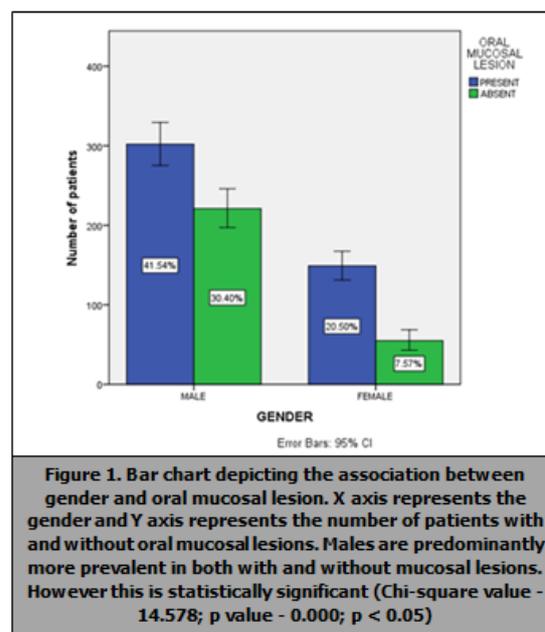
Statistics

The statistical analysis of the obtained data was performed by the SPSS software version 23.0. The data from the excel spread sheet was transferred to SPSS software for analysis. Chi square tests were employed in order to find the association between different variables and p value $< 5\%$ was considered to be statistically significant. The final results are presented in the form of graphs for further interpretation and discussion.

RESULTS AND DISCUSSION

Among the 727 patients, the total patients having oral mucosal lesions were 536 and 191 didn't have oral lesions. The prevalence of oral mucosal lesions among the elderly population was 73.72%. This value is significant and also conveys that the majority of them had oral lesions. This indicates that older individuals are certainly prone to develop oral mucosal lesions. Aging patients have a weaker immune system which makes them susceptible for acquiring various oral diseases. Hence this could be one of the reasons behind the high prevalence of oral lesions. Found a similar prevalence of 83.6% in his study.³⁰ The sample size in his study is very similar to the current and that can be the reason behind similar prevalence values.

About 41.54% were males and 20.5% were females (Figure 1). There was a male predilection in the present study for oral mucosal lesions. The association between the gender and the oral mucosal lesions were found to be statistically significant ($p < 0.05$). This high occurrence of lesions in the males might be attributed to the adverse habits such as tobacco usage associated with them. In contrast to the current study, found a female predilection (85%) in his study and in a similar study conducted by, it was found that males (64.8%) had a greater number of oral lesions than females (60.4%). These differences can be due to the differences in the sample characteristics.^{13,30}



The oral mucosal lesions were studied among different age groups (Figure 2). The age group of 50 – 55 years were found to have a greater number of oral mucosal lesions (30.81%). This was followed by 56 – 61 years (22.15%), 62 – 66 years (9.08%), 67 – 72 years (1.93%) and finally 73 – 82 years (1.38%). This shows that the oral mucosal lesions are more common in the 5th decade of life. The association between age and the oral lesions were found to be statistically not significant ($p > 0.05$). Found that patients who are 70 years and older had a greater number of oral lesions which is in contrast to the current study. This difference can be due to the ethnicity of the sample population.

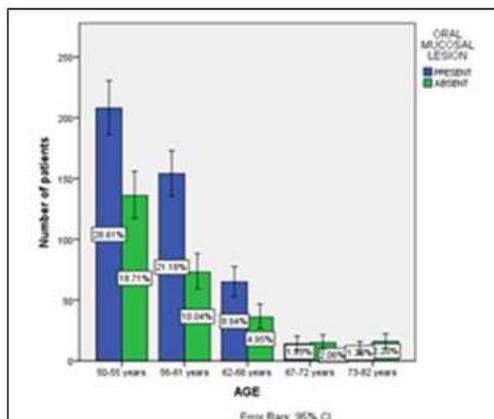


Figure 2. Bar chart depicting the association between age and oral mucosal lesion. The x-axis represents the age and the y-axis represents the number of patients with and without mucosal lesions. 50-55 years were more prevalent in patients with mucosal lesions. However, this is not statistically significant (Pearson's Chi-square value - .0909; p value - 0.334; $p > 0.05$).

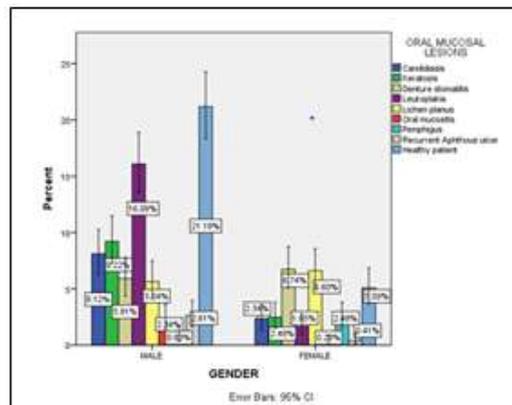


Figure 3. Bar chart depicting the association between gender and oral mucosal lesions. The x-axis represents the gender and the y-axis represents the number of patients with oral mucosal lesions. Males are predominantly more prevalent in leukoplakia (32%) and females are more prevalent in denture stomatitis (12%) followed by lichen planus (11.6%). However, this is statistically significant (Chi-square value - 122.625; p value - 0.002; $p < 0.05$).

Different types of oral mucosal lesions were studied among males and females (Figure 3). Among males, leukoplakia was the most common lesion (16.09%). This was followed by frictional keratosis (9.22%), candidiasis (8.12%), denture stomatitis (5.91%), oral lichen planus (5.64%), recurrent aphthous stomatitis (2.61%), oral mucositis (2.34%) and finally pemphigus (0.83%). Among females, denture stomatitis (6.74%) was the most common lesion followed by oral lichen planus (6.6%), frictional keratosis (2.48%), pemphigus (2.48%), candidiasis (2.34%), leukoplakia (1.65%), recurrent aphthous ulcer (0.41%) and oral mucositis (0.28%). The association between the gender and different types of oral lesions were found to be statistically significant ($p < 0.05$). A study done by Patil et al. (49) reveals that nicotine stomatitis (43%) to be the most common lesion which was followed by denture stomatitis (34%) and leukoplakia (22%). A similar result was found by who found varices (59.3%) to be the common oral mucosal lesion. These findings are in contrast to the current study and can be attributed to the sample size and geographic location respectively.³⁰

The types of oral mucosal lesions were studied among the different age groups (Figure 4). In the age groups 50 – 55 years (8.53%), 56 – 61 years (5.09%) and 67 – 72 years (1.93%) leukoplakia was found to be the commonest oral lesions and this might be due to the male predilection seen in leukoplakia. Denture stomatitis was found to be the commonest oral lesion in the age groups 62–66 years (2.34%) and 73 – 82 years (0.96%). This can be attributed to the increase in the edentulousness in these age groups and hence the propensity for denture stomatitis. The association between types of oral lesions and the age groups was found to be statistically significant ($p < 0.05$). Varices were found to be very commonly occurring in the ages 60 – 64 years (51.8%), 65 – 69 years (58.7%) and > 70 years (69.3%) and this was followed by fissured tongue. These findings are different from the current study results and might be due to the sample selection criteria and geographic location of the study done by Jainkittivong et al.

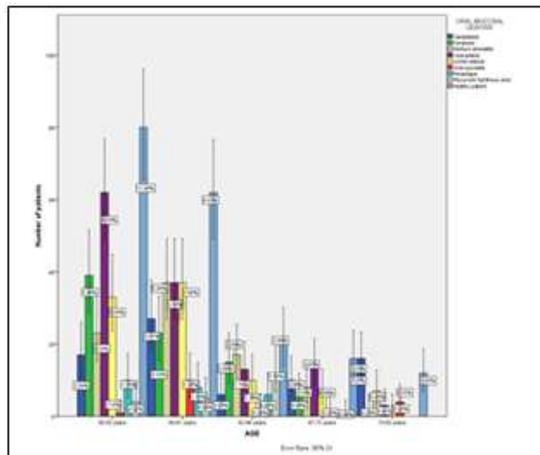


Figure 4. Bar chart depicting the association between age group and oral mucosal lesions' axis represents the age group and y axis represents the number of patients with oral mucosal lesions.50-55 yrs. of patients were more prevalent, being leukoplakia (62%) followed by keratosis (39%) followed by lichen planus (33%). However this is statistically significant (Chi-square value - 114.533; p value - 0.003; $p < 0.05$)

CONCLUSION

The increased number of elderly patients having different oral mucosal lesions is a significant observation from the current study. Leukoplakia and denture stomatitis being the commonest oral mucosal lesions also implies two things which are increased tobacco smoking and improper denture hygiene measures. Most of the patients having denture stomatitis do not remove the denture while sleeping. This practice is either due to patients ignoring the dentist's instructions or dentists not properly educating the patients about denture maintenance. Tobacco smoking is a chronic problem prevailing globally which is also one of the popular reasons for a high mortality rate. Strict measures must be taken in order to curtail the increasing number of tobacco related oral mucosal lesions.

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