

Prevalence of Oral Soft Tissue Lesions in Assam – India

Dr. Sanjib Kumar Khataniar

MDS (Oral Medicine and Radiology), Reader and Head, Department of Oral Medicine & Radiology,
Regional Dental College, Guwahati-32. Assam, India

Abstract: ***Background:** The purpose of this study was to determine the prevalence of oral soft tissue lesions in patients who attended the outpatient department of Regional Dental College, Guwahati, Assam (India) during a period from August 2013 to February 2015. About 9224 subjects belonging to urban, semi-urban and rural areas of Assam in North eastern region of India were screened. Out of these about 143 cases showed soft tissue lesions. Statistical analysis was done using the SPSS software. **Findings:** 1.55 percent of the population studied had one or more oral lesions associated with prosthetic use, trauma and tobacco consumption etc. 143 patients were found to have significant mucosal lesions. 35.70% had Oral lichen planus, 16.80% had oral submucous fibrosis, 11.9% had oral leukoplakia, 14 had both leukoplakia, 9.80% had oral candidiasis, 7% had oral squamous cell carcinoma, 5.6% had oral traumatic ulcer, 3.5% had geographic tongue, 2.8% had fissured tongue and chemical burn and 1.4% each had erythroplakia, fibroma and oral pemphigus. **Conclusions:** Cross-sectional studies are important entity in evaluating the prevalence of a disease in the general population. The regional databases and review data from various regions give an understanding of the national scenario. The findings in the present study reveal a high prevalence of oral soft tissue lesions in the community. Close follow up and systematic evaluation is required in this population.*

Keywords: Oral soft tissue lesions, Oral lichen planus, oral submucous fibrosis, leukoplakia, oral squamous cell carcinoma.

Abbreviations: Oral lichen planus- OLP, Oral Submucous fibrosis-OSMF, Squamous cell carcinoma- SCC.

1. Background

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 are harmless, while others may have serious complications.^{1,2} There are different types of oral soft tissue lesions. Some lesions causes discomfort to the patient for which patient desire for treatment and some lesions without any discomfort are unnoticed or discovered during normal dental checkup.

A broad range of oral mucosal lesions has received interest for epidemiologic studies worldwide, but few studies have documented the entire range of possible lesions. Although in 1980, the World Health Organization (WHO)'s "Guide to epidemiology and diagnosis of oral mucosal disease and conditions" provided a systemic approach of data collection, the epidemiologic literature on oral mucosal diseases is somewhat scanty in this country.^{3,4}

Oral soft tissue lesions could be due to local trauma or irritation, systemic diseases and related to lifestyle factors such as usage of tobacco, areca nut, betel quid or alcohol. These lesions may range from a single minute ulcer to a large malignant lesion. Identifying the lesions at premalignant stage and rendering treatment could prevent their malignant transformation. Studying the prevalence of oral lesions at the community level helps in understanding the magnitude of problem of particular region.

Oral cancer is the 6th most common cancer in the world. 2/3rd cases are contributed by the developing countries. India alone accounts for 1/3rd of the world's oral cancer and has a high rate of pre-malignant lesions. Most common predisposing factors are smoking, smokeless tobacco, betel

nut in quid form (pan), alcohol, spicy food, sharp broken tooth. These lesions and conditions are considered suitable for screening as they have potential to change to cancer.⁵ India had a vast geographic area, divided into states, which differ with regard to their socioeconomic, educational, cultural and behavioral traditions. Thus regional databases and review data from various regions give an understanding of the national scenario. The present study was undertaken in patients reporting to out-patient department of Regional Dental College, Guwahati, Assam (India). The purpose of the study was to evaluate the prevalence of oral soft tissue lesions.

2. Materials and Methods

Nine thousand two hundred and twenty four (9224) patients from different urban, semi urban and rural areas of Assam, who attended the out-patient department of Regional Dental College, Guwahati, Assam, India during a period from August 2013 to February 2015 formed our study group. The patients visiting the Department of Oral Medicine with different age and sex groups were screened. Data was collected using a combination of clinical oral examination and standardized questionnaire. Information on demographic parameters, habits etc were acquired using standardized interviewer based questionnaire. Ethical permission for the study was obtained from institutional ethical committee and patients gave their consent for the study. Patients were asked to rinse their mouth thoroughly with water and then examined under an incandescent light source. In clinical examination the following elements were analyzed: features of the lesion, anatomical location, extension, etiological factors or related factors, dental status, alcohol, tobacco, trauma, use of prosthesis etc. In addition, in those cases requiring further examination, biopsies were performed to establish a definitive diagnosis. The age group

between 15 to 75 Years and patients who are willing to take part in the study are included in the study. Severely injured patients, patients suffering from acute dental pain and the normal variations of oral mucosa are excluded in the study.

3. Statistical analysis

Data was collected and the variables were analyzed on all patients, using the SPSS software (11.0).

4. Results

This project was undertaken to study the prevalence and correlation of oral mucosal lesions with different habits in patients reporting at Regional Dental College, Guwahati, Assam. Data was collected from the outpatient department of Regional Dental College from February 2013 to August 2014. A total 9224 (Nine thousand two hundred twenty four) patients belonging to urban, semi-urban and rural areas of Assam, India with different age and sex were examined clinically and evaluated for different oral soft tissue lesions and different oral habits. After clinical examination it was found that a total of 143 patients were having oral soft tissue lesions, which was 1.55% of the total study populations.

Maximum numbers of patients were recorded with oral soft tissue lesion in the age group 31 years to 45 years (43.35%) and minimum were recorded in 61 to 75 years (4.1%). Present study showed that a maximum number of 90 male populations effected with oral tissue lesion is in the age group 31-45 years age and a minimum was observed in the age group of 15-30 years (29). Oral soft tissue lesions were also common among the female with a maximum of 43 in the age group of 31-45 years and 46-60 years. (Graph-1)

Out of 143 positive patients studied, the commonest involvement site was the buccal mucosa (44.80%) followed by tongue (14.70%) and least in gingiva (6.30%). Study showed that the buccal mucosal lesion was maximum amongst male during 31-45 years and amongst the female also it was maximum during the same age group. (Graph-2).

Out of 143 patients, 93 (65%) were males and 50 (35%) were females. Hence, male to female ratio was found to be 1.86:1 (Graph-3)

1.55 percent of the population studied had one or more oral lesions associated with prosthetic use, trauma and tobacco consumption etc. 143 patients were found to have significant mucosal lesions. 35.70% had OLP, 16.80% had oral OSMF, 11.9% had oral leukoplakia, 14 had both both leukoplakia, 9.80% had oral candidiasis, 7% had oral SCC, 5.6% had oral traumatic ulcer, 3.5% had geographic tongue, 2.8% had fissured tongue and chemical burn and 1.4% each had erythroplakia, fibroma and oral pemphigus. The result showed that the most commonly affected age group is 31-45 years. It was observed that OLP, erythroplakia and candidiasis was most common amongst the female then male. But chemical burn and traumatic ulcer is least common among female of the study populations (Graph-4)

5. Discussion

Cross-sectional studies are important entity in evaluating the prevalence of a disease in the general population. These studies help in identifying the high-risk individuals.³ There are few isolated studies reported in Indian literature with limited information on oral mucosal lesions in rural and semi-urban population of India,^{6,7,8,9,10} whereas the world literature search reveals many studies about prevalence of oral mucosal lesions in countries like USA¹¹, Argentina¹², Chile¹³, Brazil¹⁴ and Colombia¹⁵.

In our study, after clinical examination it was found that a total of 143 patients were having oral soft tissue lesions, which was 1.55% of the total study population with the prevalence being higher in males than females. This was lower compared to previous studies carried out in Chennai (4.1%)⁸ and Vidisha (8.4%)⁶.

The occurrence rate of OLP (35.70%) OSMF (16.80%) and leukoplakia (11.90%) in our study population was similar to those found in other studies. OLP is the most common premalignant lesion. Philip B Sugerman, MDS, PhD (2012) in a review article described OLP was a chronic inflammatory disease where internationally affects approximately 1-2% of the general adult population, considering the race, age and sex the author reviews that OLP affects all racial groups, the male -to- female ratio for OLP is 1:1.4 and OLP predominantly occurs in adults older than 40 years, although younger adults¹⁶. The OSMF is a premalignant disorder associated with the chewing of areca nut. The habit is prevalent in South Asian populations, but has been recognized now days in other country. It transforms to SCC and cause mortality. The occurrence rate of OSMF in our study was 16.80%. The OSMF was observed to be maximum in 31-45 years amongst male and female which might be due to pan & betel nut chewing habit in the young generation. Gupta *et.al.* reported that Gujarat has shown that the prevalence of OSMF is increasing – from 0.16% (1967) to 10.9% (1998). About 85% of patients were younger than 35 years¹⁷. Byakodi *et.al.*, 2011 reported that OSMF is emerging as a new epidemic mainly among youth (persons below 35 years) with a prevalence rate of 0.62%¹⁸. Prevalence of leukoplakia varies among scientific studies. A comprehensive global review points at a prevalence of 2.6%. In India the prevalence of leukoplakia varies from 0.2 to 5.2%.¹⁹ In our study the occurrence rate of leukoplakia was 11.9%.

Annually, over 3,00,000 new cases of oral cancer are diagnosed all over the world where the majority are diagnosed in the advanced stages III or IV. Highest rates are reported in South Asian countries such as India and Sri Lanka. The Indian sub-continent accounts for one-third of the world burden. Annually 130,000 people succumb to oral cancer in India which translates into approximately 14 deaths per hour. The reason for high prevalence of oral cancer in India is primarily because tobacco is consumed in the form of gutka, quid, snuff or misri. Rising tobacco use in India, where 40 per cent of the world's smokers live has contributed to this trend²⁰. India has one of the highest incidences of oral cancer in the world, with estimated incidence of 12.48 cases per 1, 00,000 population in males and 5.52 per 1,00,000 populations in females.²¹ In our study the occurrence of oral cancer was 7%. This suggests that the

rural population may not seek the medical care until the lesions become symptomatic and attend a reasonably big size. Low literacy rate and ignorance on the part of the patients are considered as additional factors for seeking late medical attention.

Erythroplakia, candidiasis, geographic tongue, fissured tongue, pemphigus, fibroma and chemical burn were the other oral mucosal lesions which were noted in our study. These lesions were due to prosthetic use or trauma or unknown etiology. These lesions were treated appropriately and patients are kept under follow up. The patients with a diagnosis of premalignant conditions like OLP, leukoplakia and OSMF were advised abstinence from tobacco and a regular visit for the treatment and those with oral cancer were advised surgery at Regional Dental College Hospital, Guwahati.

All data were collected as a chair side procedure, which involved history and clinical oral examination. Since the history was taken for information like medical history, lifestyle and habit there could be information bias. In our study detailed information could not be gathered on other predictors of oral lesions such as nutritional status and body mass index; a more detailed and case control study is required to better understand the oral lesions and habits association in this population.

6. Conclusion

Cross-sectional studies are important entity in evaluating the prevalence of a disease in the general population. Thus regional databases and review data from various regions give an understanding of the national scenario. The findings in the present study reveal a high prevalence of oral soft tissue lesions and a rampant misuse of variety of addictive substances in the community. Effective utilization of existing infrastructure and manpower through involvement of medical and dental colleges, district hospital in the areas can also help in screening and early diagnosis of oral soft tissue lesions. There is an urgent need for awareness programs involving the community health workers, dentists and allied medical professionals.

7. Disclaimers

None

8. Grants

None

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