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Original Article

Assessment of prevalence of tobacco related lesions among subjects of known population: An observational study

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ABSTRACT

Background: Tobacco use including both the smoking and non-smoking forms are common in India. Tobacco in any form, either smoked or smokeless, can cause a wide spectrum of oral mucosal alterations or lesions including oral pre-cancer and oral cancer. Hence; we planned the present study to assess the frequency of occurrence of different tobacco related oral lesions. **Materials & methods**: A total of 25 patients with tobacco positive history and presence of tobacco associated lesions were included in the present study. Complete demographic details of all the patients were obtained. Frequency of occurrence of different type of tobacco associated lesions was noted. **Results**: Commonly seen tobacco associated lesions were Palatal erythema, Tobacco pouch keratosis, Leukoplakia, Smoker's palate and Palatal changes associated with reverse smoking. **Conclusion:** Oral leukoplakia was the most commonly observed tobacco related lesion in the present study.

Key words: Prevalence, Tobacco.

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INTRODUCTION

Tobacco use including both the smoking and non-smoking forms are common in India. Tobacco in any form, either smoked or smokeless, can cause a wide spectrum of oral mucosal alterations or lesions including oral pre-cancer and oral cancer. The type and location of the alteration/lesion varies with the type of tobacco used, the way it is used, and the frequency and duration of use.[1- 3]

Tobacco-associated lesions include tooth stains, abrasions, smoker's melanosis, acute necrotizing ulcerative gingivitis and other periodontal conditions, burns and keratotic patches, black hairy tongue, nicotinic stomatitis, palatal erosions, leukoplakia, epithelial dysplasia and squamous-cell carcinoma.[4- 6]

India is next to China in both tobacco production and consumption in the world. In India tobacco is mainly used either in smoking form like cigarette, beedi, hookah, and other pipes like chillum, chutta, dhumti, cherrot and cigar or in smokeless form like chewing plain tobacco, khaini, zarda, kiwam, bajjar/tapkheer (dry snuff), masheri/mishri, and gutka. Products containing tobacco and areca nut are also used in some parts of the country. Among all the most commonly used one is chutta with cigarette next to it.[7- 9] Hence; we planned the present study to assess the frequency of occurrence of different tobacco related oral lesions.

MATERIALS & METHODS

The present study was conducted for assessing the prevalence of tobacco related lesions among subjects of known population. A total of 25 patients with tobacco positive history and presence of tobacco associated lesions were included in the present study. Complete demographic details of all the patients were obtained. Frequency of occurrence of different type of tobacco associated lesions was noted. All the results were collected and summarized in Microsoft excel sheet and were assessed by SPSS software.

RESULTS

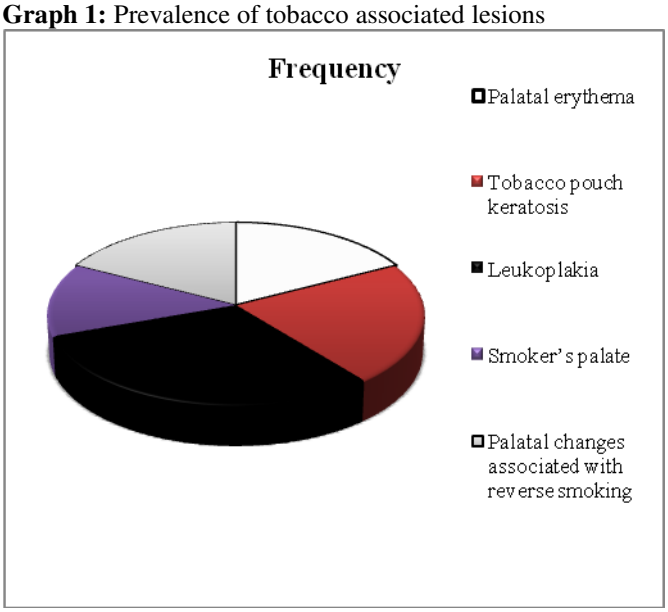
A total of 25 patients were studied in the present study. Mean age of the patients of the present study was 40.5 years. Among these 45 patients, 20 were females while the remaining 25 were males. Commonly seen tobacco

associated lesions were Palatal erythema, Tobacco pouch keratosis, Leukoplakia, Smoker's palate and Palatal changes associated with reverse smoking. Leukoplakia was the most commonly seen tobacco associated oral lesion found to be present in 28 percent of the patient's population. Tobacco pouch keratosis was found to be present in 20 percent of the patient population. Palatal erythema was found to be present in 16 percent of the patient population.

Table 1: Prevalence of tobacco associated lesions

Tobacco associated lesions	Number of patients	Frequency
Palatal erythema	4	16
Tobacco pouch keratosis	5	20
Leukoplakia	7	28
Smoker's palate	3	12
Palatal changes associated with reverse smoking	4	16
Others	2	8
Total	25	100

Graph 1: Prevalence of tobacco associated lesions



DISCUSSION

In the present study, a total of 25 patients were studied in the present study. Mean age of the patients of the present study was 40.5 years. Among these 45 patients, 20 were females while the remaining 25 were males. Joshi M et al conducted a study to rule out association of smoking and smokeless tobacco with occurrence of tobacco-associated lesions (TALs) and its dose-response relationship. Total of 60,018 patients attending the Department of Oral Medicine and Radiology from January 2013 to December 2014 with different oral and dental symptoms were screened. Of these, 4795 patients satisfying inclusion and exclusion criteria formed the cohort of the present study. All the patients were informed regarding the study and an informed verbal consent was obtained, following which they were interviewed for tobacco-related habits and examined by the trained dental professionals for the presence of any lesion. Along with patients' demographic details, information regarding the type of habit, duration, and frequency was recorded. The overall study population showed maximum cases having habit of smokeless tobacco (37.9%) and smoking tobacco (36.5%). The overall prevalence of TALs was found to be 7.98%. Their study found strong relation of duration and frequency of habit with respect to occurrence of the lesions. TALs are often subtle and asymptomatic.[9]Behura SS et al determined the association of oral mucosal lesions in a group of Chennai population aged 15 years and above with smoking and chewing habits. The study was undertaken with 450 subjects with smoking and/or chewing habits aged 15 years and over gathered through random selection in Chennai, India. Subjects with alcohol intake were excluded from the study. Based on the habits the study group was categorized into smokers, chewers and mixed (smoking+chewing). One hundred and fifty subjects diagnosed with oral mucosal lesions designated as "cases" and 300 lesion-free "controls", frequency matched for age, sex, habit and family income were assessed during the study. The study protocol included a visual oral soft tissue examination and a questionnaire-based interview. In addition, those requiring further examination, scalpel biopsies were performed to establish a definitive diagnosis. Irrespective of the type of habit, 78% of cases smoked and/or chewed for more than 10 years as compared to 37.4% of the control group. Similarly, 71.3% of cases smoked and/or chewed more than 5 times per day as compared to 25.6% of the control group. Eleven habits related mucosal lesions of the oral cavity were encountered. Smoker's melanosis was the most common oral mucosal lesion followed by Oral submucous fibrosis and Leukoplakia. Dose-response relationships were observed for both duration and frequency of habits on the risk of oral mucosal lesions. The result of their study provided information on the association of oral mucosal lesions in smokers, chewers and patients with mixed habits.[10]

In the present study, commonly seen tobacco associated lesions were Palatal erythema, Tobacco pouch keratosis, Leukoplakia, Smoker's palate and Palatal changes associated with reverse smoking. Leukoplakia was the most commonly seen tobacco associated oral lesion found to be present in 28 percent of the patient's population. Tobacco pouch keratosis was found to be present in 20 percent of the patient population. Palatal erythema was found to be present in 16 percent of the patient population. Desai R et al examined the effect of pure tobacco on oral mucosa. One thousand three hundred and fifty-seven subjects were screened in two phases. In the first phase, habits and oral lesions were identified and photographed. The photographs were remotely diagnosed by an oral medicine specialist and those subjects requiring biopsy were recalled for phase II. Cytology and biopsy were performed in phase II. The predominant habit was smokeless tobacco (SLT), in 582

subjects. The most commonly encountered lesion was tobacco pouch keratosis seen in 397 subjects. Biopsy was performed for 71 subjects, most cases showed hyperkeratosis and mild dysplasia. One subject had moderate dysplasia. There was minimal alteration of tissues in our study subjects, which can be considered as low-risk. Use of mHealth empowered frontline healthcare workers to identify subjects with lesions and enabled remote diagnosis by specialist in resource-constrained settings. Use of mHealth enabled us have an electronic record of subject details.[11]

CONCLUSION

Oral leukoplakia was the most commonly observed tobacco related lesion in the present study. However; further studies are recommended.

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