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To determine the Prevalence of Oral mucosal lesions and their association with Pattern of tobacco

Dr. Jaskirat Sidhu

Associate professor, Department of Periodontics Maharaja Ganga Singh Dental College, Sriganganagar

Dr. Sandeep Sidhu

Associate professor, Department of Oral Pathology & Microbiology Maharaja Ganga Singh Dental College, Sriganganagar,
Email: dr.sandeepsidhu30@gmail.com

Dr. Navneet Singh Kathuria *

Associate professor, Department of Oral Pathology & Microbiology Maharaja Ganga Singh Dental College, Sriganganagar
dr.navneetsingh@ymail.com

Dr. Gagandeep Kaur Sidhu

Associate professor, Department of Oral Pathology & Microbiology Maharaja Ganga Singh Dental College, Sriganganagar

Dr. Vandana katoch,

Reader Department of Oral Pathology and Microbiology, Institute of Dental Sciences, Jammu, Email: vandanakatoch1@gmail.com

Dr. Bela Mahajan

Professor & HOD. Departement of oral pathology and microbiology, Institute of Dental Sciences, Jammu

Abstract---Aim: To determine the Prevalence of Oral mucosal lesions and their association with Pattern of tobacco. Methods: Following ethical approval, a descriptive, cross sectional research with 200 participants was done at the department of oral pathology. Individuals aged 16 and up who visited the research location and were consulted for wilful involvement in the study were included. Personal interviews were used to collect demographic information as well as tobacco use status utilising a selfdesigned proforma. Tobacco consumption habits were broadly classified into four categories based on the following criteria: smokers were those who reported daily or less than daily use

of smoked form of tobacco without use of smokeless tobacco, whereas smokeless tobacco users were those who reported daily or less than daily use of smokeless tobacco without use of smoked form of tobacco. Individuals who used both forms throughout the research were classified as dual users, whereas those who never used tobacco or had a history of quitting one or both kinds were classified as nontobacco users. Results: The study population consisted of 100 people, 70 percent of whom were men and 30 percent of whom were females, with a mean age of 47.41 10.52 years. Out of 200 people, 100 (100%) did not have any form of tobacco habit, whereas 8% claimed a prior smoking habit and 6% indicated a past smokeless tobacco use habit. On the other hand, 25% of persons reported using smokeless tobacco, 20% smoked tobacco, and 6% consumed both varieties, resulting in a tobacco consumption prevalence of 50%. A total of 36% of people were diagnosed with at least one OML. Smokeless tobacco users had a greater prevalence rate than smoked tobacco users (22 percent vs. 10%), whereas dual users had a prevalence rate of 2%. There was also a 0.5 percent frequency of OMLs among extobacco users (smoked and smokeless tobacco form). The most common lesions were recurrent aphthous ulcer (15%), followed by oral submucous fibrosis, leukoplakia, and leukokeratosis nicotina palatini (5%, 4%, and 4%, respectively). Erythroplakia was found to be less common than leukoplakia, which appeared in 2% of participants, and lichen planus, a precancerous disease, which appeared in 3% of people. In the whole study population, the prevalence of oral cancer was 1%. The distribution of various OMLs in connection to tobacco use frequency showed that there was a significant increase in the prevalence of all OMLs with increased tobacco use frequency ($P < 0.05$). Conclusion: The report also emphasises the importance of implementing effective cigarette cessation programmes as well as screening programmes concentrating on OMLs. Counseling, as well as correct referral and treatment processes, should be prioritised for habit cessation. Educational initiatives should be led by health experts, including dentists, health workers, anganwadi workers, and allied medical science specialists who can be educated to detect OMLs and educate people about the hazardous effects of tobacco use.

Keywords---Oral mucosal lesions, tobacco, association.

Introduction

Because it serves as a doorway to our digestive system, the oral mucous membrane is thought to be a mirror of both oral and overall health. ¹ Oral mucosal lesions (OMLs) are precursors of oral cancer, which is the sixth most frequent cancer worldwide. These OMLs may be the consequence of complicated bacterial and viral interactions in a confined environment, metabolic or immunologic changes producing systemic illnesses, pharmacological responses, or even harmful lifestyle behaviours such as tobacco, betel quid, and alcohol usage. ^{1,2}

These OMLs not only cause pain and discomfort, but they can also impair speech and mastication. Furthermore, they may interfere with day-to-day social interactions by causing symptoms such as xerostomia, halitosis, or oral dysesthesia. ¹ An oral premalignant lesion is analogous to a smoking volcano that is repressed or disguised and, if not identified early, has devastating repercussions. ^{1,3-5}

Tobacco use, both smoked and smokeless, is widespread in India, and particularly prominent in Chhattisgarh. The second Global Adult Tobacco Survey GATS-2 India (2016–17), conducted among 15-year-olds, indicates a 6% decline in tobacco usage prevalence compared to GATS-1 (2009–10), i.e. a drop from 34.6 percent to 28.6 percent. According to the GATS-2 data sheet India 2016-17, 10.7 percent of all adults now use smoked tobacco, while 21.4 percent use smokeless tobacco. ^{6,7}

Several studies on the incidence of OMLs in various areas of India have been conducted, but relatively few have been conducted in Central India, notably in states such as Madhya Pradesh and Chhattisgarh. Aside from the GATS survey, just one research done in Madhya Pradesh's Vidisha area found that 21 percent and 42 percent of individuals used smoked and smokeless tobacco, respectively. The survey also found that 11% of individuals used both smoked and smokeless tobacco products. The prevalence of clinically serious oral lesions has been found to be 8.4%. ²

Material and Methods

Following ethical approval, a descriptive, cross-sectional research with 200 participants was done at the department of oral pathology. Individuals aged 16 and up who visited the research location and were consulted for wilful involvement in the study were included. Individuals with a reluctance to participate, those with a long-term systemic or mental illness, and those undergoing radiation were excluded from the research.

All persons who decided to participate in the study and were qualified to do so were asked to provide written informed consent. Participants were properly informed about the study's goal and nature, and they were asked to give honest information while being assured of anonymity.

Personal interviews were used to collect demographic information as well as tobacco use status utilising a self designed proforma. Tobacco consumption habits were broadly classified into four categories based on the following criteria: smokers were those who reported daily or less than daily use of smoked form of tobacco without use of smokeless tobacco, whereas smokeless tobacco users were those who reported daily or less than daily use of smokeless tobacco without use of smoked form of tobacco. Individuals who used both forms throughout the research were classified as dual users, whereas those who never used tobacco or had a history of quitting one or both kinds were classified as nontobacco users.

Clinical and laboratory research

A single trained and calibrated examiner performed a Type III clinical examination of the oral mucosa with patients well seated on a dental chair to determine the type, location, quantity, and size of OMLs. Before gaining written informed permission, all participants were given a brief explanation of the study's goals and objectives, as well as the methodology. Clinical criteria, assessment, and cross examination by specialists were used to confirm the final diagnosis. To validate the clinical results, cytological and histological examinations were also carried out. The WHO Assessment Form for Oral Mucosal Diseases was used to document the clinical examination results.^{8,9}

Results

The study population consisted of 100 people, 70 percent of whom were men and 30 percent of whom were females, with a mean age of 47.41 10.52 years [Table 1]. Out of 200 people, 100 (100%) did not have any form of tobacco habit, whereas 8% claimed a prior smoking habit and 6% indicated a past smokeless tobacco use habit. On the other hand, 25% of persons reported using smokeless tobacco, 20% smoked tobacco, and 6% consumed both varieties, resulting in a tobacco consumption prevalence of 50% [Table 2].

It was fascinating to note that 70 percent of males smoked, which was nearly double the 30 percent of girls [Table 1]. A total of 36% of people were diagnosed with at least one OML. Smokeless tobacco users had a greater prevalence rate than smoked tobacco users (22 percent vs. 10%), whereas dual users had a prevalence rate of 2%. There was also a 0.5 percent frequency of OMLs among ex tobacco users (smoked and smokeless tobacco form). The most common lesions were recurrent aphthous ulcer (15%), followed by oral submucous fibrosis, leukoplakia, and leukokeratosis nicotina palatini (5%, 4%, and 4%, respectively). Erythroplakia was found to be less common than leukoplakia, which appeared in 2% of participants, and lichen planus, a precancerous disease, which appeared in 3% of people. In the whole study population, the prevalence of oral cancer was 1%. [Tables 2 & 3]

The distribution of various OMLs in connection to tobacco use frequency showed that there was a significant increase in the prevalence of all OMLs with increased tobacco use frequency (P 0.05). Surprisingly, there was a substantial reduction in the likelihood of recurrent aphthous ulcers occurring as the frequency of cigarette usage increased (P = 0.001) [Table 3].

Table 1
Gender distribution

	Number of patients	Tobacco consumption
Male	140	66
Female	60	34
Total	200	100

Table 2
The prevalence of oral mucosal ulcers varies according to the kind of tobacco used

Type	Distribution of participants according to tobacco use habit (%)	Frequency of OMLs according to the type of tobacco use
Smokeless	50 (25)	44 (22)
Smoked	40 (20)	20(10)
Dual users	12 (6)	4 (2)
Ex-tobacco user (current nonusers)		
Ex-ST user*	16 (8)	1 (0.5)
Ex-SLT user#	12(6)	1 (0.5)
None tobacco user	70 (35)	2 (1)

Table 3
In the study population, the prevalence of various oral mucosal lesions was determined

Type of OMLs	Overall frequency of OMLs (%)	Frequency OMLs according to tobacco use pattern (%)			P value
		<5 times	5-10 times	<10 times	
Leukoplakia	8 (4)	0	1	1	0.001**
Erythroplakia	4 (2)	0	1	3	0.001**
Lichen planus	6 (3)	1	3	2	0.020*
Oral submucous fibrosis	10(5)	2	5	3	0.040*
Candidiasis	4 (2)	0	1	3	0.007*
Leukokeratosis nicotina palatini	8 (4)	0	2	6	0.011*
Herpetic gingivostomatitis	0 (0.00)	0	0	0	-
Cancrum oris	0 (0.00)	0	0	0	-
Recurrent aphthous ulcer	30 (15)	14	9	7	0.001**
Oral cancer	2 (1)	0	0	2	0.521

Discussion

The oral mucous membrane is the most vulnerable to many diseases, but surprisingly, very little information is known on oral mucosa abnormalities, particularly among the rural or semiurban population of India, where tobacco smoking is most frequent and a significant source of chaos.^{10,11} In this study, the prevalence of OMLs was determined to be 36%. Tobacco use patterns in India vary greatly depending on geography and community cultural views. When data from the current study is compared to data from GATSIndia, i.e. GATS 1 and 2, it

is shown that usage of tobacco in our city is highly high for handmade smoked and smokeless tobacco products when accounted for jointly, i.e., 50 percent.

This demonstrates that the prevalence of tobacco use in our city is still substantially higher than the GATS 1 and 2 estimates of 35% and 29%, respectively. This significant usage of handmade tobacco products, along with a lack of information about the detrimental consequences of altering tobacco content and mixing, may have resulted in the high prevalence of OMLs shown in our study. Further disparities in participants, circumstances, examination procedures, and laboratory confirmation of diagnosis, which was our study's key strength.¹²

The most common OML discovered in our study was aphthous ulcer (15%), which is consistent with studies performed in the Indian population, which revealed aphthous ulcers in 47.4 percent and 44.5 percent of patients, respectively.^{13,14} The high prevalence of aphthous ulcers may be related to the fact that Indian cuisine uses a variety of herbs and spices, and the majority of Indians consume spicy food, which may damage oral mucosa or result in acidic regurgitation, leading to aphthous ulcers. Aphthous ulcers can be caused by stress and a vitamin shortage in the diet. All of these variables may have contributed to the increased frequency of aphthous ulcers.^{13,14}

The high incidence of tobacco usage in this research may be attributable to the ease of access to cheaper handmade tobacco products. Because of the changing mixing and content, which is not controlled, the easy availability of these DIY items has negative health impacts.¹⁵⁻¹⁷

The majority of rural people use Gudhaku (a paste type of smokeless tobacco) as an oral hygiene tool to clean their teeth, oblivious to its harmful consequences on the oral cavity. The measurement of tobacco usage in this study is dependent on self-reports, which may be biased. The study's strength, however, is the crossconfirmation of clinical diagnosis by laboratory examination, which greatly improves the accuracy of the diagnosis.

The findings of this study add to the growing body of data showing there is an urgent need for tobacco cessation treatment therapies, as well as public awareness campaigns on the detrimental effects of tobacco use, particularly in Gudhaku. Furthermore, these data, when combined with those from the GATS1 (2009–2010) study for Chhattisgarh, can aid in the identification of numerous critical targets for tobacco cessation treatments.¹⁵⁻¹⁷

Conclusion

The report also emphasises the importance of implementing effective cigarette cessation programmes as well as screening programmes concentrating on OMLs. Counseling, as well as correct referral and treatment processes, should be prioritised for habit cessation. Educational initiatives should be led by health experts, including dentists, health workers, anganwadi workers, and allied medical science specialists who can be educated to detect OMLs and educate people about the hazardous effects of tobacco use. This study concludes with the

goal that the findings will serve as a platform for statebased tobacco research, as well as a statewide screening programme for the diagnosis and treatment of many tobaccoassociated OMLs.

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