Subjective Analysis of Oral Mucosal Tissue Lesions.
Oral mucosal Assessment Among the NCC Cadets of Bhopal Group

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ABSTRACT -The Oral Mucosal lesions is one of the most frequently occurring complications observed among the NCC cadets. Assessing various clinical findings, it is found that, the use of tobacco and alcohol is very common among the younger generation of the NCC cadets.

A structured, validated questionnaire was employed for oral mucosal lesions assessment including demographic and qualitative methods. An online platform was employed for data collection.After assessing the cases clinically it is found that the lesions like leukoplakia, OSMF, Candidiasis, etc, are very common in this young generation. It is well recognized that treatment outcome evaluation should primarily be based on the clinical data, This study will be providing an overview of the current state of the research on the use of humanoid AI for the diagnosis of oral mucosal lesions of the population, including the methods, advantages, limitations, and future prospects of this technology.

Keywords— OSMF(Oral submucous fibrosis), Leukoplakia, Candidiasis, Humanoid AI, Oral mucosal lesions, Machine learning.National Cadet Corps(NCC)

I.   INTRODUCTION

Schwartz in 1952 first described Oral Submucous Fibrosis (OSMF) as "Atropicaidiopathica mucosae oris" while Jens J. Pindborg in 1966 described it as "an insidious, chronic disease that affects any part of the oral cavity and sometimes the pharynx. Although occasionally preceded by, or associated with, the formation of vesicles, it is always associated with a juxtaepithelial inflammatory reaction followed by fibroelastic change of the lamina propria and epithelial atrophy that leads to stiffness of the oral mucosa and causes trismus and an inability to eat".1 Along with the features mentioned above, OSMF, a potentially malignant disorder (PMD) is also characterized by clinical features such as progressive reduction of mouth opening, reduced tongue movement, blanching and leathery texture of the oral mucosa, depapillation of the tongue, and shrunken uvula.[2'3]Areca nut-chewing and smoking along with liquor, in any formulation, has been considered the main etiological agent even though multifactorial etiopathogenesis has been reported.1 The disease has shown predominance towards the young generation of NCC Cadets which could be attributed to the areca nut chewing and smoking(passive smoking including) habit in these regions. Prevalence of OSMF in NCC has been reported ranging up to -------.[4]Illiteracy, lack of awareness of ill effects of various habits, lower socioeconomic status and peer-pressure plays an important role in development of OSMF in young generation population. The premalignant lesions caused by gutkha, areca nut, tobacco and related products can be reversed by quitting the habits at an earlier stage and by early diagnosis and proper treatment. Thus, it proves the importance of identifying the high-risk group and educating them about ill-effect of areca nut, tobacco, along with early diagnosis, treatment and prevention of debilitating diseases caused by these habits. These observations justified our surge for the present study to assess the risk factors and clinical presentations of OSMF in the young NCC cadets. The role of critical components of a habit such as duration, frequency, and chewing time in the clinical grading of OSMF along with gender specificity in the present scenario of evidence-based dentistry.5,6 Thus, this study was also carried out to correlate these habit factors to the clinical grading of OSMF.

II. MATERIALS AND METHOD

An Observational Descriptive questionnaire study of 209Cadets from 7-8 different college's of OSMF was carried out in the Department of Public healthdentistry, after approval from institutional ethical committee. The data was collected for a period of 10 days and formed the detailed case records of these Cadetswith a provisional diagnosis of OSMF, in the age group of 15 to 24 years were selected. Cadets with known history of systemic disorders causing limitation of mouth opening like anemia and scleroderma and patients with a history of previous treatment for OSMF were excluded from the study. Data was collected in the context of details of demographics, involved habits, sites of lesion, signs and symptoms, clinical grading etc.

The suspected OSMF cadets were divided in categories based on age groups and duration of the habit and into according to their frequencies of habits (per day). The different types of habits such as chewing of Gutkha, Areca nut, Pan masala, Betel quid, Smokeless tobacco, Smoking and Alcohol were recorded in detail in terms of duration and frequency. The patients were divided into single & multiple habits. The clinical grading into four stages according to their clinical presentation of the disease was done using Khanna and Andrade (1995) classification.The data was collected and recorded in tabulated format in excel sheet. All statistical analyses were performed using Google Forms. Descriptive measures like mean values and standard deviations for continuous variables and percentage for categorical variables were calculated. The OSMF cases were classified by gender for comparison purposes.

III. RESULTS

Demographics

In the present study males were predominant, out of 209cadets,119 (56.9%) were male. The youngest patient was 21 years of age whereas the oldest patient was 24 years old. Majority (20-30%) of the OSMF cases belonged to 19-21 years of age group. The average age of the patient in the study was 20.4 years. The mean age for males (n = 119) was 21 ± 19 (range 19-25) years and for females (n = 90) it was 21.5 ± 19.4 (range 19-25) years. Thus, occurrence of OSMF in younger age group.(21 years) was significantly higher in males as compared to percentage of females.

IV. DISCUSSION

Apart from areca-nut chewing being considered as the main causative agent, other contributory risk factors for etiopathogenesis of OSMF includes chewing of smokeless tobacco, high intake of chillies, toxic levels of copper in foodstuffs, vitamin deficiencies, malnutrition resulting in low levels of serum proteins, anaemia and genetic predisposition.[8] Areca-nut consumption is estimated to be by 10-20% of World's population in different forms.[8] Areca-nut chewing in its various forms is widely prevalent in the India, giving rise to an increased prevalence of OSMF, from an estimated 2,50,000 cases in 1980 to an estimated 5 million people in 2002.[5]

A marked increase in incidence has been observed after the widespread marketing of commercial products known as Gutkha (mixture of tobacco and areca-nut), sold in single-use packets. Especially including the movie stars who are motivating these young cadets under just the influence of playing a role in **KHAKEE or in ARMY UNIFORM to start a habit like smoking and alcohol consumption.**

Malignant transformation of OSMF

Patients with OSMF have been reported with higher risk of developing oral squamous cell carcinoma (OSCC), compared to other PMDs.A recent study from India has reported malignant transformation in 25.77% of OSMF cases indicating the alarming malignant potential of OSMF.We can conclude from the present study that habit variables in the form of duration, frequency, have increased significance in correlation to severity of clinical grading of OSMF. It was also found that there is a marked difference in the habits, their frequency and duration, signs and symptoms and disease severity in females when compared with males seeking dental care for OSMF at tertiary level, in the Western Indian rural population. Limitations of the present study includes that since it was a questionnaire study, control group was not there and there were a smaller number of females in the study. Also amount/quantity of gutkha/areca nut, its duration in the mouth, style of chewing gutkha-swallowing/spitting and association of prevalence and severity of OSMF with different types of habits were not included. Hence, a well-designed, large, metacentric, prospective study including matched control groups is recommended. In conclusion, primary prevention for a potentially malignant disorder such as OSMF needs to be improved at national, state, and individual levels and should involve education of the public regarding the ill effects of areca nut and tobacco along with harsher laws and punishments to restrict the sale of gutkha and similar products. More focus should be on

early diagnosis since many patients come so late to diagnosis that interventions are of limited efficacy and despite the efforts taken cure is almost impossible. Further, having multiple habits such as chewing tobacco or areca-nut products, imbibing unhealthy amounts of alcohol, abusing other drugs and often having dietary deficiencies increases the risk of co-morbidities such as metabolic syndromes, respiratory,gastrointestinal/liver and cardiovascular diseases. Depending on their dominant symptoms, patients may seek consultation/treatment by either a primary care physicians (PCP) or an oral physicians/dentists. Thus an interdisciplinary approach that may help in early diagnosis of OSMF/potentially malignant disorders and OSCC, with integrated management of both oral and systemic symptoms, improving long term prognosis, reducing suffering and improving quality of life is crucial. Hence all health care professions must work together as a team with the primary goal of prevention.

Another approach what NCC can do is that take help from military hospitals and the Army dental corps to help and eradicate these problems among these young generation of the NCC cadets.

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