

Clinicoepidemiological and Etiopathogenetic Profile of Oral Submucosal Fibrosis

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Abstract

Original Research Article

Background: Oral submucosal fibrosis is a chronic insidious disease of oral cavity with potential for turning into malignant condition. It is most commonly seen in gutkha chewers. **Aim:** To study the clinicoepidemiological profile and etiopathogenesis of Oral submucosal fibrosis (OSMF). **Material & Methods:** The present study was conducted on 306 cases of OSMF attending outpatient department, NIMS Medical College & hospitals, Jaipur, (Rajasthan) from June 2016 to June 2018. It was a randomized prospective tertiary hospital based study. In our study M: F ratio was 2.18:1. The oldest case was 65 years old and youngest case was 16 years old. Gutkha consumption for prolonged time was the most common culprit causing osmf. The study shows burning sensation with difficulty in opening mouth to be most common presenting complaint. Osmf was most common in heavy spice users. The duration of gutkha use for more than 10 years presented with increase in severity of osmf. **Conclusion:** This article emphasizes on day by day increase in people consuming gutkha and other product and alarming increase in oral lesions and indicates the nature of disease as relatively preventable if appropriate action is taken regarding stoppage of addiction on time.

Keywords: Chillies. Etiopathogenesis. Oral submucosal fibrosis. Gutkha. Trismus.

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INTRODUCTION

Oral Sub Mucous Fibrosis was initially described by Susruta in old indian manuscripts and main author of the compendium of Susruta, named VEDARI, where patients suffering from inability to open the mouth, burning sensation and pain.

It was described by Schwartz in 1952 as a fibrosing condition of the mouth in 5 Indian women from Kenya for which he coined the term. "Atrophica idiopathica tropica mucosae oris [1]". The epithelium overlying the fibrous condensation becomes atrophic in 90% of cases and is the site of malignant transformation in 4.5% of patients [2].

Oral submucous fibrosis (OSMF) is a premalignant condition mainly associated with the practice of chewing betel quid containing areca nut, a habit common among South Asian people. It is characterized by inflammation, increased deposition of submucosal collagen and formation of fibrotic bands in the oral and paraoral tissues, which increasingly limit mouth opening [3]. The number of Gutkha consumers is rising day by day especially in young population.

The etiology most commonly includes chili consumption, areca nut chewing, tobacco smoking and

chewing. The relationship between arecanut and OSMF is well established from epidemiological studies. The other possible etiology is considered to be spices and chilly consumption, nutritional deficiencies like fruit and vegetable consumption, collagen disorders etc.

The chemical constituents of arecanut have been identified as arecoline, arecaidine, guvacine, guvacoline, catachins and tannin in biochemical studies. These chemical constituents of betel nut can stimulate fibroblast proliferation leading to collagen synthesis.

The inflammation occurs in juxtaepithelial cells followed by hyalinization of lamina propria. The myofibrosis occurs in subepithelial and submucosal layers which progresses to stiffness of mucosa of oral cavity and thus restriction in mouth opening. This progression is cause of all signs and symptoms suffered by osmf patients.

As the disease progresses patient present with blanched mucosa, trismus, burning sensation in mouth, ulceration, vesiculations, growth in oral cavity etc. The quality of life of patients is affected and restricts their food habits.

The hallmark of the disease is submucosal fibrosis that affects most parts of the oral cavity, pharynx and upper third of the esophagus leading to dysphagia and progressive trismus due to rigid lips and cheeks.

MATERIALS & METHODS

The present study was conducted on 306 patient of OSMF attending the outpatient clinic in NIMS Medical College & Hospital, Jaipur, Rajasthan from June 2016 to June 2018 for oral lesions. The patients were selected as per their duration of chewing Gutkha and other products, the presenting complaints, type of irritant in accordance with our questionnaire.

All the patients coming to ENT OPD with complaints of oral cavity were screened and selected for the present study as per our predecided set of questions.

RESULTS & DISCUSSION

Among 306 patients included in present study the males were found to be predominant over females. The number of males included in our study were 210 as compared to 96 females with male to female ratio of 2.18:1. This was in accordance with recent studies pertaining to OSMF [4,5]. The possible reason for male preponderance could be increase in number of males with gutkha consumption and other addiction.

The cases were of age group 21-30 year more commonly i.e. 39.86 %. OSMF has been traditionally reported in middle age group i.e. second to fourth decade [6, 7]. However the youngest patient in our study was 16 years old and oldest patient was 65 years old. The younger population in present scenario starts gutkha consumption at an earlier stage.

The symptoms and signs depend on the progression of the lesions and number of affected sites [8]. The most common presenting complaint was burning sensation in oral cavity while consuming spicy food with difficulty in opening mouth in 196 patients followed by burning sensation alone in 85 cases. Ulceration was the common complaint in 25 patients. This is in accordance with previous studies [9].

About 170 (55.55 %) were heavy spice and chillies users, 85 (27.78 %) moderate spice and chillies users, 15(4.9%) with mild usage of spices and chillies, 36(11.7%) with minimal usage of spices and chillies. Oral submucous fibrosis is found mostly among Indians and other population groups who use chillies to season their food, either in raw or dried or powered form at every meal [10].

The pathogenesis of osmf is considered to be multifactorial with habit of addiction considered to be most significant. It has been suggested that consumption of chillies, nutritional deficiency, chewing

of areca nut, genetic susceptibility, altered salivary constituents, and autoimmunity and collagen disorders may be involved in the pathogenesis of this condition [11]. About 130 (42.49) % cases used gutkha alone in comparison to 111 (36.27%) case with arecanut, 35 (11.4 %) using tobacco, 17(5.56 %) using paan masala, 8 (2.61 %), smoking and 5 (1.6%) with no addiction. This might be because products available in market are concentrated; freeze dried and has higher dry weight concentration of irritants in comparison to the home made products like panmasala [12].

The duration of chewing also affected severity and initiation of OSMF. Cases who chewed tobacco for more than 10 years developed osmf earlier with more severity. (13) The patients Patient consuming gutkha and other products < 5 years were 142, for 5-10 years were 85, for 10-15 years were 58, for > 15 years were 21.

The severity of osmf was categorized into four grades, following the criteria from a study done by Ranganathan *et al.* [14]. The criteria taken was mouth opening as follows.

Grade I: Only symptoms, with no demonstrable restriction in mouth opening
Grade II: Limited mouth opening. 20 mm and above
Grade III: Mouth opening less than 20 mm.
Grade IV: OSMF advanced with limited mouth opening.

Precancerous or cancerous changes seen throughout the mucosa. Patient with grade I osmf were 140, grade II were 67, grade III were 79, grade IV were 20. The five criterias included in previous studies by pindborg [14] proves that disease is precancerous included high occurrence of OSMF in oral cancer patients, higher incidence of SCC in patients with OSMF, histological diagnosis of cancer without any clinical suspicion in OSMF, high frequency of epithelial dysplasia and higher prevalence of leukoplakia among OSMF cases.

CONCLUSION

We can prevent the disease as well as decrease its progression by taking antigutkha measures on large scale by doing campaigns, starting self help groups, helping government in its strict action against illegitimate tobacco use, educating school and college students which will ultimately cure the root cause of disease. The habit of chewing tobacco because of its easy availability and low cost is the main hinderance in stopping it completely. Hence better and firm policies need to be made for complete prevention of this disease. Patients should be instructed to avoid spicy and chilly food. Oral hygiene should be maintained and healthy diet and lifestyle should be maintained. Regular oral examination should be done.

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