ISSN (Online): 2393-915X; (Print): 2454-7379 IJCMR

ORIGINAL RESEARCH

Oral Submucous Fibrosis: A Prospective Clinical Profiling

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ABSTRACT

Introduction: Oral submucous fibrosis is a peculiar disease which is considered to be a precancerous condition**.** Clinical findings are largely dependent on the severity and staging of the disease. The objectives of the present study were to evaluate the complaints, clinical presentation and grading of OSMF.

Materials and methods: Study included 50 Patients above 15 years and who were diagnosed as OSMF based on history and clinical features. Patients below 15 years and without any deleterious habits were excluded from the study. The collected data was entered and analyzed by SPSS statistic software version 20. Descriptive statistics was calculated for the variables

Results: Primarily complaints of patients were burning sensation, decreased mouth opening and both. Most of the Patients presented with bilateral presentation involving both right and left buccal mucosa and 32% with unilateral distribution presented as blanching and palpable fibrous bands.

Conclusion: Study showed that OSMF is becoming a disease of younger adults with a slight male predilection and increase in incidence on the rise with the popularity of commercially available betel nut products. Advancement in various diagnostic aids is required to diagnose the disease in earlier stages, along with these awareness campaigns must be carried out to educate the peoples about the deleterious habits.

Keywords: OSMF, Blanching, fibrosis

How to cite this article: Deepak Chandrakant Kelgandre, Pawani Donempudi, Roshan Chandwani, Priya Uppalwar, Saurabh Sabnis. Oral submucous fibrosis: a prospective clinical profiling. International Journal of Contemporary Medical Research 2015;2(5):1107-1110

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Source of Support: Nil

Conflict of Interest: None

INTRODUCTION

Oral submucous fibrosis is a peculiar disease which is considered to be a precancerous condition**.**Schwartz was the first to describe it in 1952 in five Indian women from Kenya and he termed it "atrophiaidiopathica mucosa oris."[1] Joshi subsequently coined the term "OSMF" a year later.[2] It has been reported mainly from India, but has also been diagnosed in Srilanka, Malaysia, Nepal, South Vietnam,and Thailand.

Worldwide, estimates of OSMF shows a more number of cases in indian population as compared to the other part of world. Prevalence rate in india is approximately 0.2% to 0.5%.Theaetiology of oral submucous fibrosis is considered to bemulti-factorial which includesbetel quid chewing, excessive use of chillies and spices,poor nutrition and vitamin and iron deficiency have been suggestedas causative agents.[5] Among these OSMF is mainly associated with the chewing ofareca nut, an ingredient of betel quid,and is prevalent in South Asian populations.Areca nuts contain alkaloids, of which arecoline seems to be a primary etiologic factor.[6] The precise mode of action of the various chemical constituents of areca nut on mucosal tissue is still unclear, it has been suggested that these constituents interfere with the processes of deposition or of breakdown of collagen or both.[7]

Itcauses significant morbidity (in terms of lossof mouth function as tissues become rigid andmouth opening becomes difficult) and mortality (when transformation into squamous-cell carcinoma occurs). The introduction ofchewing tobacco containing areca nut intothe market has been associated with a sharpincrease in the frequency of OSF.[8]

There are various signs and symptoms of this condition like burning sensation during eating the spicy food in early stages while in advanced stage burning sensation occurs during the normal food also. Patiens may complains of restricted mouth opening and change in the voice and difficulity in hearing. In early stages patients has a generalized stomatitis, vesicles over the mucosa some may have the ulceration and xerostomaia also. In advanced stages there is restricted movements of the tongue and depapillation also observed.

Diagnosis of OSMF should be based on the history and clinical examination and confirmed by histopathologicalexamination.There is increasing incidence of the OSMF and subsequent malignant transformation. Hence the article focuses to review the etiology and clinical features of OSMF.

MATERIALS AND METHODS

This is a prospective study conducted in the department

of oral medicine diagnosis and radiology, Y.C.M.M and R.D.F'S Dental CollegeAhmednagar. The study included 50 oral submucous fibrosis patients diagnosed based on history, clinical features and confirmed by histopathological examination. The demographic data including age, gender, employment status and Clinical data including the site and presentation of the lesion along with the associated features including mouth opening, burning sensation were evaluated in a specially designed proforma for the study.

Inclusion criteria

Patients above 15 years and who were diagnosed as OSMF based on clinical features and confirmed by histopathological examination. 50 patients are divided into 4 groups based on classification given by Khanna JN and Andrade NN in 1995.

Exclusion criteria

Patients below 15 years and without any deleterious habits.

Statistical analysis

The collected data was entered and analyzed by SPSS statistic software version 20. Descriptive statistics was calculated for the variables.

RESULTS

The present study included 96% (n=48) were males and 4% (n=2)were females suggesting higher incidence in males. All OSMF patients were divided into 4 groups according to age. The highest incidence was recorded in the age group of 15-25 which was about 50% (n=25) followed by 32% (n=16) in age group of 26-35, 12% (n=6) in the age group of 36-45 and 6% (n=3) in the age group of greater than 45 (table 1).

The complaints of patients were evaluated which included only burning sensation in 16% (n=8), only decreased mouth opening in 12% (n=6), both burning sensation and decreased mouth opening in 46% (n=23) and other complaints in26% (n=13).

Clinical features were evaluated which included the area affected and mouth opening (table 2).

Most of the Patients presented with bilateral presentation involving both right and left buccal mucosa which included 64 % (n=32) and 32 % (n=16) with unilateral distribution presented as blanching and palpable fibrous bands. Next common site involved in the study was soft palate and uvula 78% (n=39). Soft palate was presented with blanching giving a marble like appearance. Uvula was presented as shrunken in 60% (n=30) of patients and hockeystick appearance in 18% (n=9). Labial mucosa was involved in 40% (n=20) of patients presented with blanching and fibrous bands in which 8% (n=4) showed involvement of lower labial mucosa, 6% (n=3) involved upper labial mucosa and circum oral involvement in 26% (n=13).

Tongue was involved in 6% (n=3) of patients presented as restricted movements and depapillation of tongue. Faucial pillars were involved in 10% (n=5) of patients and Floor of the mouth in 2% (n=1) of patients presented as blanching (fig 1).

Among 50 OSMF patients 8% (n=4) of them were associated with other premalignant lesions and conditions which included leukoplakia and oral lichen planus respectively (fig 2).

In the present study there are about 8% of patients with grade I, 36% grade II, 50% grade III and 6% grade IV.

DISCUSSION

OSMF is a slow, progressive fibrotic disease causing fibroelastic change and inflammation in the oral mucosa, leading to inability to open the mouth, swallow or speak.[7,8] This is because of the deposition of excess collagen bundles by active fibroblast in the connective tissue stroma with degeneration of muscle fibers. Most common prevalence was found among the Indians, ranging from 0.2% to 1.2%. A survey revealed an overall prevalence of up to 4% in kerala.[9] Amongst the reported cases 0.5% was found to be in women.[15] The reason for the rapid increase of the disease is reported to be due to an upsurge in the popularity of commercially available areca nut in south asia.[10]

Various studies shows that areca nut is the predominant

Age in years	Number of patients (n)	Percentage
15-25	25	50%
26-35	16	32%
36-45	6	12%
>45	3	6%

Table-1: Incidence of OSMF in different age groups of patients

Area involved	Number of patients(n)	%
Only Buccal mucosa	4	8
Buccal mucosa and labial mucosa	2	4
Buccal mucosa soft palate and uvula	35	70
Buccal mucosa with tongue	3	6
Buccal mucosa with faucial pillars	5	10
Buccal mucosa with floor of the mouth	1	2
Total	50	100

Table-2: Affected areas of the oral cavity

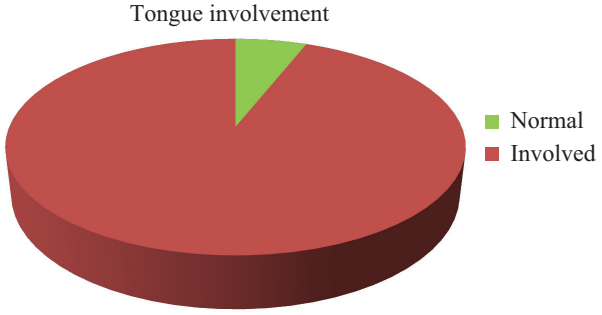

Figure-1: Pie diagram showing percentage of patients with tongue involvement.

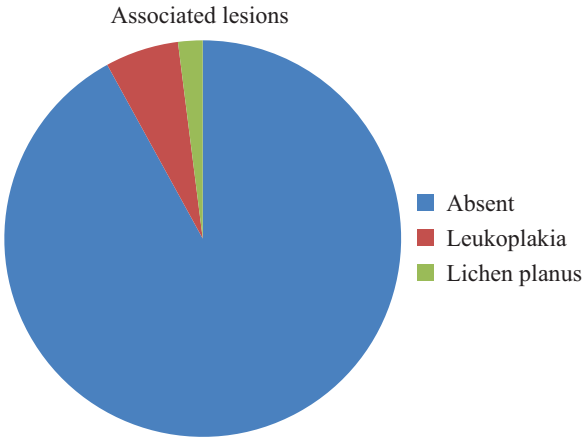

Figure-2: Pie diagram showing percentage of patients associated with other premalignant lesions and conditions

Figure-3: Clinical presentation of OSMF patient with deviated Uvula, restricted mouth opening, blanching of soft palate and atrophic uvula

causatic factor for this condition.

The data reveals that the disease is commonly found in younger age group i.e. from 11-20 years of age which was similar to the present study i.e about 50% (n=25).

The male-to-female ratio tends to vary widely from region to region. A study performed in Durban, South Africa pegged the male-to-female ratio at 1:13. Another study in Pakistan reported a ratio of 1:2.3. Two recent Indian studies done in Chennai and Patna however reveal a figure of 9.9:1 and 2.7:1 respectively.[11] In The present study male to female ratio is 24:1.

A study done in 1992 revealed that burning sensation in the mouth is the most common clinical presentation in OSMF.[12] In the present study also complaints of patients were evaluated in which only burning sensation was accounted in 16% (n=8), only decreased mouth opening in 12% (n=6), both burning sensation and decreased mouth opening accounted was more of about 46% (n=23) and other complaints in 26% (n=13). The results relates with previous studies of Shiau and Morawetz et al. who also concluded that majority of OSMF patients complaint of burning sensation followed by difficulty in mouth opening.[13,14]

Stomatitis can continue till all stages of OSMF with the advancement of disease, fibrous bands appear in the mucosa which gradually becomes palpable. The severity of OSMF depends upon the number of oral sites involved and the amount of thickness and rigidity of mucosa.[15]

In the present study clinical features were evaluated which included stomatitis, blanching, fibrosis of mucosa affecting various parts of the oral cavity.

According to SyedaArshiyaAra et al Out of 80 OSMF patients, 17 (21.2%) had faucial bands, 47 (58.8%) had buccal and faucial bands, 16 (20%) had buccal, faucial and labial bands and they were staged into stage I, stage II, and stage III respectively.[16] In the present study out of 50 patients Only Buccal mucosa was involved in 8% (n=4), Buccal mucosa and labial mucosa in 4% (n=2), Buccal mucosa with tongue in 6% (n=3), 70% (n=35) had shown involvement of Buccal mucosa soft palate and uvula, Buccal mucosa with faucial pillars in 10% (n=5) and Buccal mucosa with floor of the mouth in 2% (n=1).

Buccal mucosa is most commonly involved in the present study similar to study by SyedaArshiyaAra et al. In the present study there was bilateral presentation involving both right and left buccalmucosa which included 64% (n=32) and 32% (n=16) with unilateral distribution. Soft palate and uvula were the next common sites involved with marble like presentation of soft palate in few patients. Uvula was presented with different appearances which included shrunken, hockeystick appearance, among which shrunken appearance was most common.

Reduced mouth opening is an important clinical feature based on which OSMF is divided into four grades according to khanna et al. The severity of OSMF depends upon the number of oral sites involved and the amount of thickness and rigidity of mucosa. An important criterion in diagnosing the progression of the disease is by determining the interincisal mouth opening. Majority of the cases of OSMF reports with an increased severity. Mouth opening was measured as distance between mesio-incisaledge of maxillary central incisor to mesio-incisal edge of mandibular central incisor. In the present study there are about 8% of patients with grade I, 36% grade II, 50% grade III and 6% grade IV. Majority of patients were with grade III in which interincisal distance was 15-25mm. According to Noor-ul-Wahab et al majority of patients around 57% (n=40) were recorded with grade 3 mouth opening followed by 36% (n=25) of patients with grade 2 inter incisal distance.[17] However, only 7% (n=5) of patients presented with grade 1 mouth opening, which were similar to the present study. According to SyedaArshiyaAra et al., Functional staging was done according to the mouth opening. There were 60 (75%) patients in Stage A, 15 (18.8%) in Stage B and 5 (6.2%) in Stage C (N) which is contrary to the present study.

CONCLUSION

Study showed that OSMF is becoming a disease of younger

adults with a slight male predilection and increase in incidence on the rise with the popularity of commercially available betel nut products. Most of the patients presents with a progressive and advanced form of disease.

The condition is predominantly characterized by burning sensation and restricted mouth opening. The majority of patients present with an increased severity of disease with advanced stages which suggests lack of awareness among patients or delayed diagnosis of the cases. In this study, it was found that with increase in the duration and frequency of the habit the severity of the disease increased. Advancement in various diagnostic aids is required to diagnose the disease in earlier stages, along with these awareness campaigns must be carried out to educate the peoples about the deleterious habits. Since the present study was based on a relatively less sample size, it would be beneficial to conduct a like study with a larger sample size.

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