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ORIGINAL RESEARCH

Evaluation of demographic profile, risk factors and clinical presentation of oral submucous fibrosis in patients attending ENT OPD

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ABSTRACT

Background: Oral Submucous Fibrosis (OSMF) is one of the potentially premalignant disorder which is irreversible in nature. Primary etiology seems to be areca nut and gutkha chewing. The main concern in this is the management of trismus and burning sensation of the oral mucosa. **Aims:** Assessment of demographic profile, risk factors and clinical presentation of OSMF in central Indian patients attending ENT OPD. **Material and Methods:** This cross sectional observational study was carried out in the ENT department**.** A total of 150 attending our OPD were enrolled**.** Patient's clinico-demographic data, details of chewing habits, including frequency and duration of chewing habits was collected. Clinical staging was done on the basis of palpable fibrous bands. Functional staging was accomplished by measuring mouth opening. **Result:** The Majority (66.6%) of the OSMF cases were 21-40 years age group, predominantly males (74.7%). Most of the OSMF cases (46.7%) had a low socioeconomic status and half of them were under graduate There was a statistically significant increase for areca nut chewing, gutkha chewing, tobacco chewing, smoking habits and alcohol ($P < 0.05$) in males when compared with females. Burning sensation in mouth and reduced mouth opening were the most common clinical finding of OSMF. The maximum patients were seen in stage II (37%) followed by stage III (34%), Severity of OSMF was more in subjects who had the habits for longer duration. **Conclusion:** Patient's education, socioeconomic status and chewing habit variables (duration & frequency) had significantly correlated with the clinical features and severity of the OSMF.

Keywords: OSMF, Risk factors; Areca nut, demographic profile, clinical grading.

INTRODUCTION

Oral submucous fibrosis (OSMF) is a chronic progressive inflammatory premalignant condition that primarily affects the oral mucosal epithelium and lamina propria [1] It leads to inflammatory reaction followed by fibro elastic change of the lamina propria, with epithelial atrophy leading to stiffness of the oral mucosa and causing trismus and inability to eat [2]. OSMF is most prevalent in 20-40 years old age group with male predilection [3]. The main causative agents for OSMF can be divided into initiators and promoters, where initiators include areca nut and to some extent chilies, while the promoters are anemia (iron deficiency), vitamin deficiencies (B complex and folate) and immunologic derangements. Areca nut-chewing, in any formulation, has been considered the main etiological agent even though multifactorial etiopathogenesis has been reported. The disease has shown predominance towards Asian population and more exclusively in Indian population which could be attributed to the areca nut chewing habit in these regions [4, 5]. Clinical presentation of OSMF are burning of oral mucosa with frequent ulcerations, which progresses to blanching, progressive reduction of mouth opening, reduced tongue movement, blanching and leathery texture of the oral mucosa, depapillation of the tongue, and shrunken uvula [6,7]. 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 rural population [8]. The premalignant lesions caused by gutkha, areca nut, tobacco and related products can

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be reversed by quitting the habits at an earlier stage and by early diagnosis and proper treatment [9]. The role of critical components of a habit such as duration, frequency, and chewing time in the clinical grading of OSMF and its gender specificity is lacking in the present scenario of evidence-based dentistry [10].

Thus, this study was carried out to evaluate demographic factors, habit factors in addition to its clinical profile of OSMF patients in central India.

MATERIAL AND METHODS

This cross sectional observational study of 150 patients with a clinically diagnosed OSMF was carried out in the Department of ENT.

Inclusion criteria

- Patients with a clinical diagnosis of OSMF
- Patient age group of 18 - 80 years, with both genders
- Patients who provided written informed consent for the study

Exclusion criteria

- Patients with known history of systemic disorders causing limitation of mouth opening like anemia and scleroderma
- Patients with a history of previous treatment for OSMF
- Patients who not provide consent for the study

After obtaining consent, demographic data including, age, gender, socioeconomic conditions and literacy rate was recorded, followed by detailed history of areca nut consumption, sites of lesion, signs and symptoms, clinical grading were collected

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 [11].

Statistical analysis

The data was analysed by performed using version 22 software. A value of $P < 0.05$ was considered statistically significant

RESULT

In the present study out of 150 patients, males were predominant 112 (74.7%). Majority of the OSMF cases (66.6%) belonged to 21-40 years of age group. The mean age of the patient in the study was 33.5 years. Most of the OSMF cases (46.7%) had a low socioeconomic status and half of them were under graduate [Table: 1].

Table 1: Socio-demographics features of OSMF patients

Socio-demographics variables		Frequency	Percentage
Age groups (In years)	≤20	10	6.7%
	21-30	60	40%
	31-40	40	26.6%
	41-50	25	16.7%
	>50	15	10%
Gender	Male	112	74.7%
	Female	38	25.3%
Education	Illiterate	25	16.7%
	Under-Graduate	75	50%
	Graduate	34	22.7%
	Postgraduate	16	10.6%
Socio Economic Status	Lower	70	46.7%
	Middle	50	33.3%
	Upper	30	20%

OSMF patients had multiple risk habits. There was a statistically significant predilection for areca nut chewing, gutkha chewing, tobacco chewing, smoking habits and alcohol ($P < 0.05$) in males when compared with females.

Table 2: Sex wise risk distribution with multiple risk factors of OSMF

Risk Factors		Male (N=112)	Female (38)	P value
Areca nut	Yes	66 (58.9%)	32 (84.2%)	0.004
	No	46 (41.1%)	6 (15.8%)	
Guthka	Yes	87 (77.7%)	7 (18.4%)	<0.001
	No	25 (22.3%)	31 (81.6%)	
Tobacco (Non smoked)	Yes	65 (58%)	30 (79%)	0.020
	No	47 (42%)	8 (21%)	
Smoking	Yes	59 (52.7%)	5 (13.2%)	0.001

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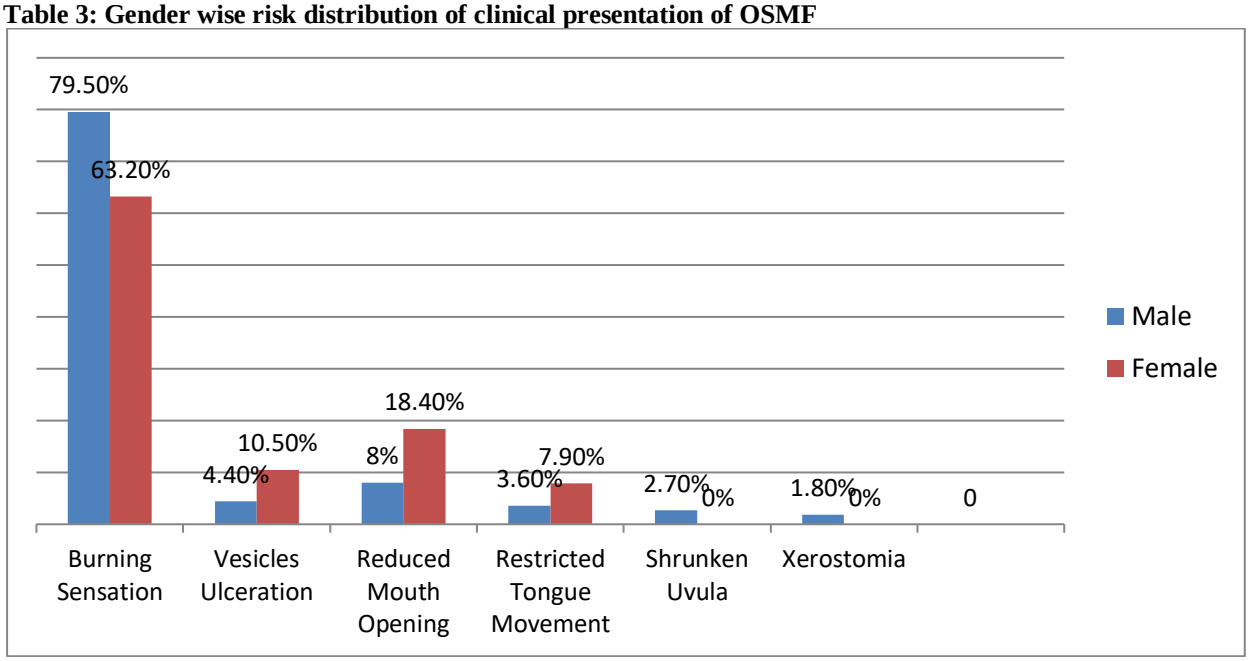
Alcohol	No	53 (47.3%)	33 (86.8%)	0.001
	Yes	36 (32.1%)	1(2.6%)	
	No	76 (67.9%)	37 (97.4%)	

Clinical presentation of OSMF like burning sensation, shrunken uvula and xerostomia were significantly more in male then female, whereas vesicle ulceration, reduced mouth opening and restricted tongue movement were found to be significantly more prevalent in females when compared with males.

Table 3: Gender wise risk distribution of clinical presentation of OSMF



Majority of the OSMF patients (37%) having stage II followed by 34% cases had stage III. OSMF was more (41.4%) in group II (age >50 years). The stage I OSMF was more prevalent in group I patients and stage II OSMF was more prevalent in group V (above 50 years) patients. Significant association was found between age group and clinical staging of OSMF ($P < 0.05$).

Table 3; Association between age groups and clinical grading of OSMF

Stage	Age Groups (in years)					Total
	Group I ≤20	Group II 21-30	Group III 31-40	Group IV 41-50	Group V >50	
I	28.3%	20.1%	17.7%	16.3%	14.5%	18.7%
II	35.4%	34.4%	38.5%	38.9%	41.4%	37.0%
III	30.3%	36.4%	33.5%	30.4%	32.8%	34.0%
IV A	5%	8.6%	8.3%	10.6%	10.8%	8.8%
IV B	1%	0.5%	2%	3.8%	0.5%	1.5%

A higher prevalence of OSMF was recorded in up to 5 years chewing habit followed by 6-10 years habit group. Duration of risk factors habit was statically significantly associated with the clinical staging of OSMF ($P < 0.05$).

Table 4: Association between duration of habit and clinical grading of OSMF

Stage	Duration of the habits					Total
	Upto 5 years	6-10 years	11-15 years	16-20 years	> 20 years	
I	13	5	3	2	2	25
II	23	13	8	5	7	56
III	23	13	6	4	5	51
IV A	5	3	2	3	2	15
IV B	1	1	1	0	0	3
Total	65	35	20	14	16	150

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DISCUSSION

Oral submucous fibrosis (OSMF) is a potentially malignant disorder that primarily affects any part of the oral cavity and sometimes the pharynx. The disease is chronic, insidious, and progressive in nature.

In our study, the majority of the OSMF cases belonged to 21-40 years of age group with mean age was 33.5; findings are similar with the earlier studies by Ranganathan K, et al [12] and Yang YH, et al [13]. This may be due to the arrival of attractive and convenient packaging in the forms of sachet, beguiling advertisements linking it to the social status and most importantly easy availability has led to an increase in consumption of gutkha and pan masala among the younger population.

The present study showed that the prevalence of OSMF was significantly higher in males then female, consistent to the many other studies: Biradar et al [14], Gaur SK, et al [15] and Kumar S, et al [16]. The higher involvement of males in all studies reflects their easy access to the abusive habits when compared with females.

We have fund that the most of the OSMF patients belonged to lower-middle socioeconomic class, in agreement with the Shapoo MI et al [17] and Srivastava R, et al [18]. The reason might be attributed to poor nutritional quality of food with low vitamins, iron and use of more spices and chillies to make the food tasty, coupled with lack of health consciousness.

In present study, areca nut chewing and the use of tobacco for teeth cleaning were proportionately higher in females which are attributable primarily to the local cultural practices and easy availability of areca nut and tobacco. Inversely, gutkha chewing and tobacco smoking was more prevalent in males, accordance to the Nigam NK, et al [19]. This explains the synergistic effect of tobacco with areca nut showing greater number of patients presenting with OSMF.

In the present study burning sensation of oral mucosa and inability to open the mouth wide due to fibrotic bands were the chief complaints; our results were comparable with the Reddy V, et al [20].

As far as role of education with use of areca nut and tobacco is concerned, maximum of OSMF patients presenting with history of risk habits were illiterate or had primary education, constant findings are according to study by S Rashid et al [21] and Memon et al [22].

In our study duration and frequency of chewing habit was significantly associated with the severity of OSMF, these result correlate with the studies done by previous researchers [23-24].

The majority of OSMF cases were in grade II followed by grade III in current study, concordant to the Das M, et al [25].

CONCLUSION

In conclusion, Young adult's males had the highest prevalence for OSMF. Low economic status and minimal education were predictors for increased incidence of OSMF. Areca nut and gutkha chewing habit variables in the form of duration and frequency had significance correlation to severity of clinical grading of OSMF. 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.

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