

Determinants of Oral Submucous Fibrosis among Oral & Dental Surgery Patients at Bahawal Victoria Hospital and Quaid-e-Azam Medical College, Bahawalpur

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ABSTRACT

Aim: To determine the prevalence and factors associated for oral submucous fibrosis

Methods: This study was conducted among routine oral & dental surgery patients attending dental outdoor and some referrals from ENT outdoor for the last six months from June 2015 to 31 December, 2015. The prevalence of oral submucous fibrosis and the factors associated were based on the clinical sign and symptoms of the disease condition by administering structured questionnaire.

Results: This study presents the hospital based prevalence of the oral submucous fibrosis calculated from the total 23560 subjects visiting the only tertiary care hospital at our city along with the factors associated for it. Oral submucous fibrosis was most prevalent among the younger age group of 24–33 years 0.66% along with important clinical signs and symptoms of trismus, white buccal band, thickness of oral mucosa and the factors responsible were areca nut chewing in the form of sipari, chalia, gutakha, paan masala and smokeless tobacco.

Conclusion: The over all prevalence of the oral submucous fibrosis was to be 1.45% and the younger groups of 24-33 years with its important factors responsible in our setting were sipari, chalia, gutakha, paan masala and smokeless tobacco.

Keywords: Prevalence, Oral Submucous Fibrosis, Determinants

INTRODUCTION

Oral Submucous Fibrosis (OSMF) is considered to be the disabling disease condition of the oral cavity mucosa by resulting in stiffness of the deeper soft spongy oral sub-mucosal tissue layer progressively, which ultimately limits patient mouth opening, characterized by burning sensation, difficulty in eating normal food, chewing, swallowing and even some times difficulty in speaking as well¹. This crippling disease condition is more common in subcontinent in almost all the countries of South East Asia with its predominance among some ethnic groups.² Although OSMF is well recognized, but still of unknown aetiology with its predisposition for increased risk of oral mucosal cancer as well from the results of the epidemiological studies^{2,3}. WHO define it as mucosal pathological generalized change as the oral precancerous condition³. It was first examined and reported by Schwartz in 1952 among Indian women in Kenya and described as the atrophy of oral mucosa layer which was later on described by Joshi et al in Mumbai as oral submucous fibrosis⁴.

From the literature search the frequent use of areca nut chewing has been pointed out to be responsible for OSMF which chemically contains arecoline thought to be responsible for change in the oral mucosa to make it stiff and hard. Data about the prevalence of oral submucous fibrosis from the last 2 to 3 decades gives us different estimates ranging from less than 2% to hardly 2.5% from different part of the Southeast Asia.^{2,5} The graph of oral submucous fibrosis is on the rise particularly in the urban areas and city slums due frequent availability of different forms of areca nut as commercially packs of sipari, guthaka also used as paan masala which further contain slack lime and tobacco a local irritating factor for oral mucosa⁶. The early signs of the disease are burning sensation of oral mucosa with spicy food, which later on becomes thick due to stiff collagen fibers bundles, sometimes ulceration of mucosa with fibrous band on buccal mucosa responsible for oral mucosal rigidity that leads to difficulty in mouth opening called trismus and ultimately inability to eat properly⁷.

The rationale of our study was to come up with prevalence of the oral submucous fibrosis among general population draining to the only primary to tertiary care level health facility in our setting and to determine the factors responsible for this important oral mucosal disease condition as the base line data

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from Southern Punjab, Pakistan as there is mix up of the ethnic group population in Bahawalpur with frequent use of the commercially available risk factors responsible for this oral mucosal change and to put forward suggestion for awareness among general population about the known risk factors and early diagnosis of the disease condition on side of healthcare providers and the stake holder and policy makers as well for better treatment and prognosis of this crippling disease which has potential for carcinogenic changes if not treated well in time.⁸

PATIENTS AND METHODS

This study has been conducted using a hospital base cross sectional study design among the routine outdoor patients draining to our institution, the only primary to tertiary healthcare facility available in this part of the Southern Punjab Pakistan, at the Dept of Oral & Dental Surgery, Bahawal Victoria Hospital attached with Quaid-e-Azam Medical College, Bahawalpur. Our study subjects were all the adult patients coming to dental out-door directly and some referral from the ENT outdoor as well for their dental problems regardless of age and gender. A pretested structured questionnaire was used as data collection tool for study subjects data record keeping, who were enrolled as per their verbal inform consent to be part of the study after explaining them the aim and objective of the study as formal ethical approval was already obtained from the ethical review committee of the institution. Our normal daily turnover at the Dept of Oral & Dental Surgery is more than 150 patients and all these patients have to be attended at our diagnostic department before undergoing any further routine dental surgery procedure.

All the consecutive patients coming to dental OPD were screened for the diagnosis of the oral submucous fibrosis based on the standard protocol developed through structured questionnaire to rollout based on the sign and symptoms of the disease condition like presence of white buccal band on oral mucosa, burning sensation, trismus i.e., difficulty in opening mouth and protruding the tongue etc. A sterile diagnostic kit containing mouth mirror, tongue depressor, probe, tweezer with cotton swab were used under dental unit head light illumination for this diagnostic procedure. Data was collected and analyzed on SPSS 20.0 for various important variables of interest like age, gender, area of residence, socioeconomic status, ethnicity, education level, history of illness with use of areca nuts chewing, paan masala, sipaari, challia, gutkha, smokeless tobacco etc to look for an association as risk factor.

RESULTS

The study results have been presented in tabulated form with observed numbers and the corresponding percentages as shown below for various important variables of interest for the prevalence of oral submucous fibrosis and the factors responsible for it from our study data set. It is quite evident that overall prevalence of OSMF was 1.45% out of total 23560 study subjects examined. It was further determined that among the younger age groups of 13 – 23 years, it was 27.44% of the study subject examined for prevalence of oral submucous fibrosis. There were 137 subjects with OSMF that determine to be 0.58% with the disease condition. Similarly, there were maximum number of the subject to be examined for the disease as observed number 29.51% in the age group 24-33 with prevalence of disease 0.66% and there was gradual decrease in the number of disease condition in age group 34-43 hardly 0.17% and then only 0.04% in the age group 44-53 and above 54 years there were no study subjects observed with the OSMF. The male subjects were more observed to be with oral submucous fibrosis 0.77% as compared to the females 0.68% (Table 1).

Table 1: Distribution of age and gender for oral submucous fibrosis

Variable	Study subjects examined (n=23560)		Prevalence of OSMF (23500)	
	No.	%	No.	%
Age (years)				
13 – 23	6465	27.44	137	
24 – 33	6954	29.51	156	0.56
34 – 43	3534	15.01	42	0.66
44 – 53	4015	17.04	9	0.17
54 above	2592	11.00	-	-
Gender				
Males	12487	53.01		0.77
Females	11073	46.99		0.68

This study showed that oral submucous fibrosis is to be more prevalent among the study subject from city slum areas 0.38% and 0.33% in the urban areas, while 0.29% from the rural study subjects. With respect to socioeconomic condition it was most prevalent in the middle class study subjects 0.38% while least prevalent among the well-off study participants. It is moderately prevalent in the lower and upper middle class families (Table 2). Among the ethnic groups OSMF was more prevalent 0.60% in the Urdu speaking migrant populations of our data set, while least prevalent 0.25% in the native Saraiki speaking population of while moderate degree prevalence 0.43% among the Punjabi ethnicity (Table 3). Among the risk factors responsible for the oral submucous fibrosis the most significant factor 0.52% was the use of areca nuts with smokeless tobacco in the form of paan and challia etc, while the use of

challia alone in the form of commercially available sipari, challia it was 0.37% and the use of smokeless tobacco alone was responsible for 0.22% only from our data set (Table 4).

Table 2: Distribution of area of residence and income status for OSMF

Variable	Study subjects examined (n= 3560)		Prevalence of OSMF (n=23500)	
	No.	%	No.	%
Residence				
Urban area	6775	28.75	123	0.52
Rural area	9010	38.24	56	0.23
Slum area	7775	33.01	165	0.70
Socioeconomic Status				
Lower middle class	6570	27.88	65	0.27
Middle class	8910	37.81	89	0.37
Upper middle class	4253	18.05	145	0.62
Well-off class	3827	16.24	45	0.19

Table 3: Distribution subjects with ethnicity for oral submucous fibrosis

Mother Tongue (Ethnicity)	Study subjects examined (n=23560)		Prevalence of OSMF (n=23500)	
	No.	%	No.	%
Urdu speaking	9334	27.88	142	0.60
Native Saraki	10580	37.81	60	0.25
Punjabi speaking	5253	48.05	101	0.43
Pushto & Baluchies	1607	16.24	41	0.17

Table 4: Association of various risk factors with prevalence of oral submucous fibrosis

Variable	Study subjects examined (n=23560)		Prevalence of OSMF (n=23500)	
	No.	%	No.	%
Use of Sipari challia (areca nuts only)	6341	26.91	89	0.37
Use of Gutkha	6404	27.18	78	0.34
Use of areca nuts with tobacco (paan + challia etc)	7561	32.09	123	0.52
Use of smokeless tobacco	3254	13.81	54	0.22

DISCUSSION

From our study results the hospital based prevalence of oral submucous fibrosis among dental and ENT patients is 1.45% out of total 23560 study subjects examined in six months which relatively low as compared to the community base studies at Karachi and some parts of India which is around 2–3 percent.^{9,10} This increasing trend in the prevalence of OSMF is because of the increase in the commercially available main risk factor like areca nuts in the form of sipari, challia, paan masala and gutkha along with smokeless tobacco as well.¹¹ It is quite evident from the our study results the above mentioned areca nuts based products and use of smokeless tobacco is more common among the urban and city slum area

population as compare the rural areas of Southern Punjab, Pakistan.^{9,12} This finding is in consistent to many studies from other parts of the Southeast Asia and middle east as well.¹³

The crippling disease condition of oral submucous fibrosis has been determined to be more prevalent among the two younger age groups of 13-23 years 0.58% and 24-43 years .66% as compared to the other older age groups this findings is also inconsistent with the results of other studies from many parts of world as the use of its main risk factors are thought to be addictive and more as psychoactive use of such commercially available products in our study settings as well.^{9,14,15} It is also more prevalent among the males as compared to females as the male population have more easy access to the risk factors with more chances of their easily availability.¹⁵ It is also more evident the male population is more indulge in the habit of alcohol, cigarette smoking and frequent use smokeless tobacco as well.¹⁶

Among the important risk factors for the prevalence of OSMF the history of gutkha along with other common forms of area nuts came out to be statistically significant factor responsible from the results of our study, which is quite similar to the findings of Goes S et al in 2010 at Rajasthan and by the study results of Ahmad MS et al in 2006 at Patna Bihar India as the socio-demographic characteristics and other living conditions are also very much to similar to these two areas of Southeast Asia to our study settings at Southern Punjab, Pakistan.^{17, 18}

CONCLUSION

The overall prevalence of oral submucous fibrosis from the dental and ENT patients from this hospital base study is 1.45% from total 23560 study subjects in six month time period in Southern Punjab, Pakistan. It was more prevalent among the younger age group of 13-23 and 24-34 years of age with marked prevalence of the most significant risk factors like use of areca nuts in the form of commercially available products like sipari, challia, paan masal and gutkha etc along with the habit of smokeless tobacco intake as well.

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