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Practice, attitude, and knowledge of dental practitioners towards oral submucous fibrosis: A clinical study

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Abstract---OSMF (Oral submucous fibrosis) is seen in the oral cavity and depicts a precancerous condition marked by progressive submucosal tissue fibrosis with inflammatory components leading to trismus and rigidity in the oral cavity. OSMF remains a quandary for oral clinicians owing to less-defined classification criteria and evasive

pathogenesis. The present clinical study was conducted to assess the practice, attitude, and knowledge of dental practitioners towards oral submucous fibrosis and its management. The present questionnaire-based clinical study included 520 participants who were assessed using the self-administered questionnaire given and explained to them. The questions in the questionnaire were formulated to assess the practice, attitude, and knowledge of dental practitioners towards oral submucous fibrosis. The collected data were assessed and the results were formed. The study results showed that among all the study participants, the majority of the participants were aware of betel quid being the most common etiology associated with OSMF and the commonly seen oral feature in OSMF subjects is blanching of the oral mucosa. Within its limitations, the present study concludes that oral health care practitioners have good knowledge concerning clinical features and diagnosis of OSMF. However, the knowledge among dental students about the OSMF management strategies was moderate.

Keywords--betel quid, blanching mucosa, malignancy, a precancerous condition, oral submucous fibrosis.

Introduction

OSMF (Oral submucous fibrosis) is seen in the oral cavity and depicts a precancerous condition marked by progressive submucosal tissue fibrosis with inflammatory components leading to trismus and rigidity in the oral cavity. OSMF remains a quandary for oral clinicians owing to less-defined classification criteria and evasive pathogenesis. OSMF is defined as an insidious chronic disease affecting any part of the oral cavity and occasionally extending to the pharynx, esophagus although occasionally preceded by and/or associated with Vesicle formation as defined by the Pindborg. Stiffness, rigidity, difficulty in eating and trismus seen in subjects with OSMF are attributed to the epithelial atrophy secondary to fibroelastic changes in the lamina propria after fibroelastic changes in oral mucosa following the juxta-epithelial inflammatory reactions.¹

The prevalence of OSMF is increasing globally including India posing a high burden on the healthcare sector. In India, the prevalence of OSMF has increased in the recent past to nearly 6.5% with a high prevalence in Southern parts of India. OSMF has more gender predilection towards the male gender and is commonly seen in the age range of 20-40 years. The commonly involved oral sites are the floor of the mouth, soft palate, retromolar pads, labial mucosa, and buccal mucosa. Initially, OSMF presents itself as a marble-like appearance and blanching of mucosa along with xerostomia, hypersalivation, and burning sensation. In later stages, the mucosa becomes inelastic and leathery with fibrous bands which are palpable leading to limited mouth opening. Progressively, OSMF results in difficulty in speech and swallowing with restricted movements of the tongue. OSMF is a potentially malignant disorder representing the early changes in tissue owing to various habits including stress, chewing, and smoking tobacco.²

The aetiopathogenesis of OSMF is a dilemma and is complex as OSMF is a potentially malignant disorder primarily attributed to chewing of areca nut or betel quid. Other main etiologic factors associated with OSMF are environmental factors, genetics, autoimmune disease, iron deficiency, vitamin deficiency, and excessive consumption of chilies. Areca nut being the primary etiologic factor, it is found to have flavonoids including copper, catechin, and tannins along with alkaloids like guvacoline, guvacine, arecaidine, and arecoline. Excessive collagen production by fibroblasts is seen following stimulation by alkaloids, whereas, collagen structure stabilization is seen by tannins and catechin. In addition to areca nuts, pan masala, mawa, and gutkha chewing have also led to OSMF rapidly as areca nut is the main ingredient in these products, or it can also be attributed to the synergism of nicotine and arecoline. Also, gutkha contain both areca nuts and SLT.³

The ideal therapy goal for OSMF being a potentially malignant disorder include relieving from the symptoms like a limited mouth opening and burning sensation along with preventing the malignant transformation and disease progression. No clinical data to date reported complete resolution of OSMF and still, research is being conducted to find a complete cure for OSMF being at high risk of malignant transformation. As malignancy is associated with metastasis, invasiveness, and anaplasia, management of OSMF includes physiotherapy, surgical therapy, and drug therapy. Drugs used for managing OSMF include antioxidants, anti-inflammatory, and antifibrotic drugs. However, incomplete remission and unpredictable results have been seen with all these therapies. Among these drugs, none has shown their efficacy in permanent regression of OSMF making the use of a combination of drugs as treatment of OSMF.⁴ The present clinical study was conducted to assess the practice, attitude, and knowledge of dental practitioners towards oral submucous fibrosis and its management.

Materials and Methods

The present questionnaire-based clinical study was conducted to assess the practice, attitude, and knowledge of dental practitioners towards oral submucous fibrosis and its management. The study participants were students from the Institution. After explaining the detailed study design, informed consent was taken from all the participants in both written and verbal form. The study was carried out at the Department of Oral Medicine and Radiology of the Institute. The study included a total of 520 participants from both genders within the age range of 20-28 years and the mean age of 23.2 ± 2.46 years. The subjects were given a performed and structured questionnaire to be answered. For the study, self-administered questions were used which were to be answered by the participants on the spot itself. The questionnaire language was English, also, the questions were explained to the participants in a language understood to them.

The questions in the questionnaire were formed to assess the practical approach, attitude, and knowledge of the study participants towards diagnosis and treatment of the Oral submucous fibrosis who were assessed, diagnosed, and managed at the Institution. The study questionnaire included 13 questions assessing the approach towards OSMF in the study participants. The collected data were subjected to the statistical evaluation using SPSS software version 21

(Chicago, IL, USA) and one-way ANOVA and t-test for results formulation. The data were expressed in percentage and number, and mean and standard deviation. The level of significance was kept at $p < 0.05$.

Results

The present questionnaire-based clinical study was conducted to assess the practice, attitude, and knowledge of dental practitioners towards oral submucous fibrosis and its management. The study was carried out at the Department of Oral Medicine and Radiology of the Institute. The study included a total of 520 participants from both genders within the age range of 20-28 years and the mean age of 23.2 ± 2.46 years. The demographic characteristics of the study subjects are listed in Table 1. There were 50.76% ($n=264$) males and 49.23% ($n=256$) females in the present study. 27.88% ($n=145$) participants were final year BDS students, 15.19% ($n=79$) were third-year BDS students, 41.15% ($n=214$) participants were interns, and 15.76% ($n=82$) participants were BDS tutors as shown in Table 1.

On assessing the awareness and knowledge of the study participants concerning the etiologic factors associated with OSMF, the majority of the study participants were aware that betel quid/areca nut chewing was the main etiologic factor behind OSMF as marked by 51.92% ($n=270$) study subjects. This was followed by the chewing of gutkha or pan masala as marked by 26.15% ($n=136$) of study subjects. For tobacco chewing, 20.96% ($n=109$) participants were aware of tobacco chewing being the etiologic factor for oral submucous fibrosis. The least study participants were aware of mawa chewing being the etiology for OSMF as suggested by 0.96% ($n=5$) study subjects as summarized in Table 2. Concerning the assessment of awareness among dental practitioners for management techniques for subjects with OSMF, it was seen that use of pentoxifylline for treating OSMF was known to 34.03% ($n=177$) study participants, 60% ($n=312$) subjects about the use of lycopene and were aware that lycopene is an antioxidant which was in maximum subjects, this was followed by combined use of hyaluronidase and placental extracts known to 58.07% ($n=302$) study subjects. The use of corticosteroids to manage OSMF was known to 47.88% ($n=249$) of study subjects, hyaluronidase use to 51.92% ($n=270$) of study subjects. Treating OSMF by intralesional injections was known to 52.88% ($n=275$) of study subjects. Use of physiotherapy exercise for the treatment of OSMF was responded by 55.19% ($n=287$) study participants as shown in Table 3.

Discussion

The present questionnaire-based clinical study was conducted to assess the practice, attitude, and knowledge of dental practitioners towards oral submucous fibrosis and its management. The study was carried out at the Department of Oral Medicine and Radiology of the Institute. The study included a total of 520 participants from both genders within the age range of 20-28 years and the mean age of 23.2 ± 2.46 years. There were 50.76% ($n=264$) males and 49.23% ($n=256$) females in the present study. 27.88% ($n=145$) participants were final year BDS students, 15.19% ($n=79$) were third-year BDS students, 41.15% ($n=214$) participants were interns, and 15.76% ($n=82$) participants were BDS tutors. These demographics were comparable to the characteristics of the study by Yadav

M et al⁵ in 2014 and Warnakulasuriya S et al⁶ in 2018 where authors assessed subjects with similar demographic characteristics as in the present study.

For the assessment of the awareness and knowledge of the study participants concerning the etiologic factors associated with OSMF, the majority of the study participants were aware that betel quid/areca nut chewing was the main etiologic factor behind OSMF as marked by 51.92% (n=270) study subjects. This was followed by the chewing of gutkha or pan masala as marked by 26.15% (n=136) of study subjects. For tobacco chewing, 20.96% (n=109) participants were aware of tobacco chewing being the etiologic factor for oral submucous fibrosis. The least study participants were aware of mawa chewing being the etiology for OSMF as suggested by 0.96% (n=5) of study subjects. These results were consistent with the studies of Pundir S et al⁷ in 2010 and Daga D et al⁸ in 2017 where authors reported comparable awareness levels as of the present study in their study participants.

On assessing the awareness among dental practitioners for management techniques for subjects with OSMF, it was seen that use of pentoxifylline for treating OSMF was known to 34.03% (n=177) study participants, 60% (n=312) subjects about the use of lycopene and were aware that lycopene is an antioxidant which was in maximum subjects, this was followed by combined use of hyaluronidase and placental extracts known to 58.07% (n=302) study subjects. The use of corticosteroids to manage OSMF was known to 47.88% (n=249) of study subjects, hyaluronidase use to 51.92% (n=270) of study subjects. Treating OSMF by intralesional injections was known to 52.88% (n=275) of study subjects. The use of physiotherapy exercise for the treatment of OSMF was responded to by 55.19% (n=287) of study participants. These results were in agreement with the findings of Patel TL et al⁹ in 2015 and Nivethitha R et al¹⁰ in 2020 where authors reported comparable awareness for various treatment modalities of OSMF as by the participants of the present study.

Conclusion

Within its limitations, the present study concludes that oral health care practitioners have good knowledge concerning clinical features and diagnosis of OSMF. However, the knowledge among dental students about the OSMF management strategies was moderate. An improvement in this aspect will help safe health care service access. Various training and CDEs (continuing dental education) programs will help in improving the treatment quality for subjects with OSMF. The present study had a few limitations including small sample size, shorter monitoring period, and geographical area biases. Hence, more longitudinal studies with larger sample size and longer monitoring period will help reach a definitive conclusion.

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Appendix

Table 1
Demographic characteristics of the study subjects

	Characteristics	%	n=520
Mean age (years)		23.2±2.46	
Age range (years)		20-28	
Gender	Males	264	50.76
	Females	256	49.23
Educational level	Final year BDS	145	27.88
	Third-year BDS	79	15.19
	Intern	214	41.15
	Tutor	82	15.76

Table 2
Awareness about the etiology of OSMF in the study subjects

Etiology	%	n=520
Betel quid/areca nut	51.92	270
Pan masala/gutkha	26.15	136

Tobacco	20.96	109
Mawa	0.96	5

Table 3
Awareness among study participants concerning the management of OSMF

Management techniques	%	n=520
Pentoxifylline	34.03	177
Lycopene	60	312
Corticosteroid	47.88	249
Hyaluronidase	51.92	270
Intralesional injections	52.88	275
Combined hyaluronidase with placental extracts	58.07	302
Physiotherapy exercise	55.19	287