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Original Article

Identifying Non-Specific Symptoms in Oral Submucous Fibrosis Patients: A Clinical Perspective

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ABSTRACT

The diagnosis of oral submucosal fibrosis (OSMF) is easier when patients present later in the disease's progression. For this reason, early identification by knowledgeable practitioners is essential when a patient is asymptomatic. This study aimed to evaluate the frequency of non-specific chief complaints (CC) among OSMF patients presenting to a dental facility. The objective was to evaluate the association between the non-specific primary complaints and the OSMF's grade of disease progression. For the analysis, the department retrospectively collected one year of data on OSMF patients (n = 155). The prevalence of nonspecific CC lesions was examined using SPSS software. The chi-square test was used to evaluate the association between OSMF grade and non-specific chief complaints and gender and non-specific chief complaints. Non-specific chief complaints that were unrelated to OSMF were reported by 5.93% of women and 94.07% of men. 63% of the complaints were related to discomfort, then dental discoloration (24%), missing teeth (11%), and tooth movement (2%). The classification by Kerr *et al*. showed that only grade 1 cases were symptomless. There was no statistically significant association between gender and the non-specificity of the main critiques, as indicated by the P-value of 0.63 ($P > 0.05$). A statistically significant association was found between the allocation of non-specific chief complaints and grade among OSMF patients, with a P-value of 0.0001 ($P < 0.05$). Since OSMF is still not well known, a dentist needs to go beyond the patient's primary complaint when diagnosing OSMF to make an early diagnosis.

Keywords: Oral submucous fibrosis, OSMF, OSF, Chief complaints, Non-specific complaints

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Introduction

One feature of oral submucous fibrosis (OSMF), a chronic, debilitating collagen metabolic illness, is the growth of attaching tissue stroma fibrosis in the oral mucosa. OSMF is brought on by chewing on areca nuts, also known as areca nut quid, which is quite popular in Southeast Asian countries like India [1]. It can be self-made by grinding areca nut products with extra ingredients, or it can be purchased commercially in different concentrations with extra sweets. According to estimates, the prevalence of OSMF in Indians aged 11-60 years is 0.2-2.3% in men and 1.2-4.6% in women [2]. Chewing betel nuts increases the risk of OSMF by 32 to 109.6 times in a dose-dependent manner as compared to non-chewers [3]. The development of the condition is significantly influenced by the frequency and length of time spent chewing areca nuts. People with lower socioeconomic levels are more likely to chew areca nuts more frequently [4], and this behavior is exacerbated by peer pressure, catchy marketing, and easy access to educational institutions [5-7].

In 1956, Paymaster was the first to establish that OSMF was precancerous [8]. One of the well-known potentially premalignant oral epithelial lesions (PPOELs) nowadays is OSMF. Malignancy transmission rates range from 2.3-7.6% globally [9].

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and the malignant potential percentage ranges from 7-30% in India [10]. 13.7% of individuals with OSMF had advanced oral squamous cell carcinoma [11]. The diagnosis of the lesion is primarily accidental in a dental environment, and only 13% of the younger population is aware that areca nut products are malignant. The purpose of our study was to determine how often non-specific chief complaints are among OSMF patients who visit dental facilities. Additionally, the goal was to determine whether OSMF grading and non-specific chief complaints are related.

Materials and Methods

The clinical data for this study was collected from the Department of Oral Medicine in our dental institution, India for the period March 2021 to March 2022. Institutional ethical clearance (IHEC/SDC/OMED-2002/22/428) was obtained before data collection and the study fulfilled the ethical research standards and Declarations of Helsinki. The patients' data were gathered from our dental information archiving software (DIAS) which stored comprehensive case details after obtaining informed consent. The collection of data from standardized databases and its replicability in exterior clinical settings under standard conditions establishes the internal and external validity of the study respectively. The clinically diagnosed OSMF cases (n = 155) were chosen by convenience sampling and the chief complaint recorded was screened for non-specificity regarding OSMF. The specific chief complaints to OSMF were removed and non-specific chief complaints were further grouped into toothache, missing teeth, mobility of teeth, and stains on teeth along with variables of age and gender of the patient. Kerr and Warnakulasuriya's classification [12] **(Table 1)** was followed for grading the OSMF which is broadly accepted in many countries because it represents combined clinical features, mouth opening, and histopathological grading. However, Grade 5 OSMF cases were excluded from our data collection as oral squamous cell carcinoma was mandatorily referred to oral oncology care for histopathological analysis and cancer management.

Table 1. Kerr and Warnakulasuriya's classification of OSMF

Grade 1	Mild (characteristics of the triad of OSMF disease and an interincisal aperture larger than 35 mm).
Grade 2	Moderate (with an interincisal aperture of just 20–35 mm, the above characteristics of OSMF are present).
Grade 3	Severe (symptoms of OSMF include an interincisal aperture that is smaller than 20 mm).
Grade 4A	Other characteristics of the possibly malignant oral condition include OSMF.
Grade 4B	OSMF with any grade of epithelial dysplasia on biopsy
Grade 5	OSMF with oral squamous cell carcinoma

A Microsoft Office Professional Plus 2019 Excel sheet was created using the collected data, and it was prepared such that it could be imported. SPSS Inc., located in Chicago, Illinois, USA, used the IBM Statistical Package for the Social Sciences (SPSS) 23.0 Version software to analyze the statistical data. The Chi-square test was used to assess the substantial variation between the OSMF grade and chief complaint distribution; a P-value < 0.05 was deemed to be statistically noteworthy.

Results and Discussion

There were 155 patients in all, 145 of whom were male (93.55%) and 10 of whom were female (6.452%), with mean ages of 42.5 years for men and 52.4 years for females **(Table 2)**. **Figure 1** shows how the OSMF lesions are graded. With 76% of the participants, grade 1 comprised the greatest number. 7.74% of participants were in grade 2, while 12.9% were in grade 3. 3.2% of all patients were in the grade 4 OSMF group, which had the smallest population.

Table 2. Age distribution according to gender

Gender	Mean age	Std. deviation	Std. error mean
Male	42.5931	11.73935	.97490
Female	52.4000	9.43045	2.98217

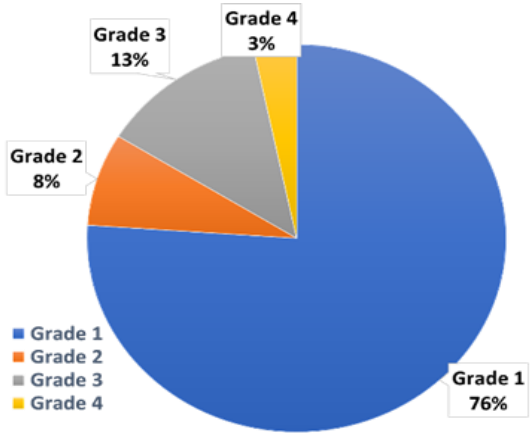


Figure 1. Distribution of grading of OSMF lesions in the study

There were 76.13% of patients with non-specific OSMF primary complaints and 23.87% with OSMF symptoms **(Figure 2)**. In this retrospective analysis, 94.07% of men and 5.93% of women exhibited non-specific dental primary complaints unrelated to OSMF's clinical characteristics **(Figure 3)**. Among the non-specific primary complaints **(Figure 4)**, pain was mentioned by 63%, followed by stains on teeth (24%). 11% had complained of missing teeth and had gone for prosthodontic care, whereas 2% of the patients had reported dental mobility.

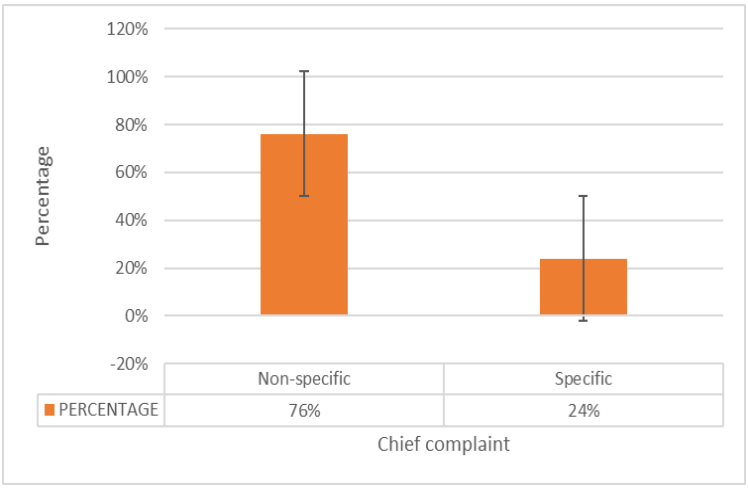


Figure 2. The particularity of symptoms among OSMF patients is represented graphically. 76.13% [2/3rd] of the patients in the research reported concerns that were not unique to the OSMF clinical manifestations.

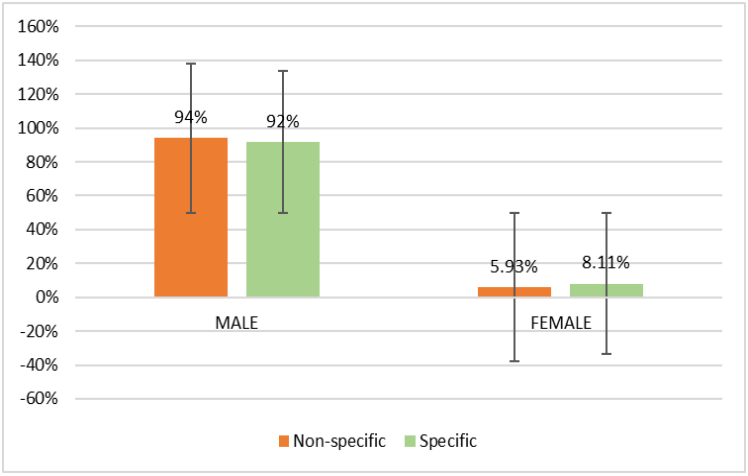


Figure 3. Distribution of genders in the research with non-specific complaints regarding OSF lesions

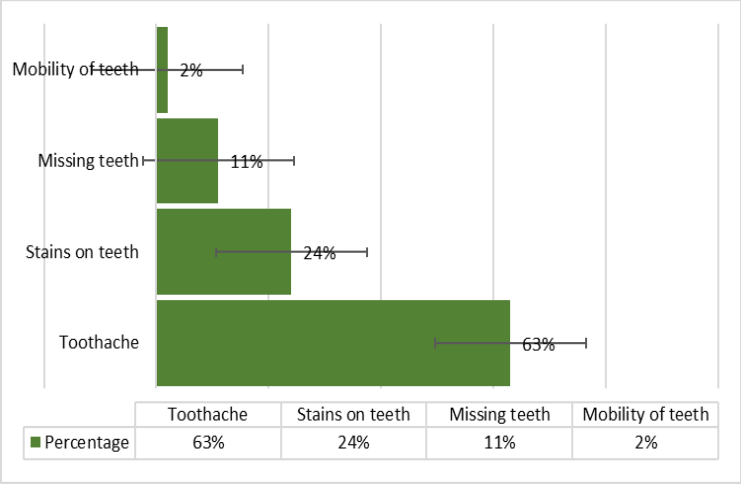


Figure 4. A graphical depiction of the study's overall major complaint category distribution explained the non-specificity of the lesions to OSMF. Participants with nonspecific primary complaints were more likely to have missing teeth, mobility of teeth, tooth stains, and toothaches.

The data sets were compared using the chi-square (X^2) test to determine the relationships between the parameters **(Table 3)**. A P-value of 0.63 ($P > 0.05$) indicated that the relationship between gender and the non-specificity of primary grievances was not statistically noteworthy. The distribution of primary concerns and grade among OSMF patients was shown to be statistically significantly correlated, with a P-value of 0.0001 ($P < 0.05$). Every single patient with grade 1 OSMF (100%) has a general concern.

Table 3. According to the chi-square test, OSMF patients' complaints and grades differ significantly from one another.

Variable	Response	Not specific to OSMF		Specific to OSMF		P-value
		Frequency	Percent	Frequency	Percent	
Gender	Male	111	94.1	34	91.9	0.63
	Female	7	5.9	3	8.1	
	Total	118	100.0	37	100.0	
Complaints	Missing teeth	13	11.0	0	0	0.0001
	Mobility of teeth	2	1.7	0	0	
	Stains on teeth	29	24.6	0	0	
	Toothache	74	62.7	0	0	
	Burning sensation	0	0	13	35.1	
	Pain in cheeks	0	0	7	18.9	
	Reduced mouth opening	0	0	13	35.1	
	Ulcers in mouth	0	0	4	10.8	
	Total	118	100.0	37	100.0	
Grading of OSMF	Grade I	118	100.0	0	0	0.0001
	Grade II	0	0	12	32.4	
	Grade III	0	0	20	54.1	
	Grade IV	0	0	5	13.5	
	Total	118	100.0	37	100.0	

In India, the frequency of OSMF differs by area, with 0.6% in the south, 30–42% in the north, 2.7% in the east, and 0.03–0.2% in the west. This is because migrant workers are becoming more and more youthful. Chewing areca nuts was a customary, cultural, and religious practice throughout the Pacific Belt and Southeast Asia in the past as a means of fostering harmony and socializing. The incidence of

OSMF in India differs by location, with the south having a 0.6% incidence, the north having a 30–42% incidence, the east having a 2.7% incidence, and the west having a 0.03–0.2% occurrence. This is because migrant workers are becoming exponentially more young. Throughout the Pacific Belt and Southeast Asia, chewing areca nut was a traditional, cultural, and religious habit that promoted social interaction and peace [13-15].

Because of their ability to treat dyspepsia, halitosis, and deworming, areca nuts were exported and brought to the West during colonial control [16]. These traditional areca nut offerings diminished from domestic customs as commercialization grew over time. With the addition of tongue fresheners and sweeteners, the areca nut was ground into a variety of forms at varied concentrations. It was widely advertised to the public and was easily accessible, even in small businesses. The psychotropic properties of areca nut products have recently led to a rise in chronic chewers among younger groups. Acute effects include euphoria, increased alertness, a sensation of well-being, warmth over the body, and an enhanced ability to function. These effects are neuroexcitatory and pleasure inducers [17].

The majority of the time, OSMF is now discovered as an extra result in public dental screening programs or among patients who visit clinics with tooth-related issues [18]. Because of this, it is now crucial to comprehend the general issues that OSMF patients have that lead them to seek treatment in dental offices. Therefore, this research was created to evaluate the non-specific principal complaints of patients who visited our dental office for a year. After the data was gathered in the past, statistical analyses were carried out.

93.55% of the 155 OSMF patients were men, while 6.452% were women. They were 42.5 ± 11.8 and 52.4 ± 9.4 years old, on average. According to previous studies, OSMF males were more likely than females to be chronic tobacco chewers [19, 20], and the gender distribution is in line with those findings. Using the classification system developed by Kerr *et al*. [12], OSMF scored 76% in Grade 1, 7.74% in Grade 2, 12.9% in Grade 3, and 3.2% in Grade 4. The majority of patients (76.13%), including both males (94.07%) and females (5.93%), had non-specific main symptoms that had nothing to do with OSMF clinical presentation. Pain [63%], tooth discoloration [24%], missing teeth [11%], and mobility [2%] were the most common non-specific complaints. In the early phases of OSMF, this indicates that the patients are more concerned with dental issues and are ignorant of their precancerous lesions in the mouth cavity.

The correlation between gender and the non-specificity of chief complaints was deemed statistically insignificant (P-value = 0.63), suggesting that patients' gender has no bearing on the type of chief complaint they report. However, grade and non-specific OSMF complaints were statistically significantly correlated (P-value = 0.0001). This illustrates how asymptomatic instances with OSMF for toothaches are only informed of the lesion during counseling and the presentation of the developed all-inclusive treatment plan. The development of OSMF would have made treatment much more difficult if they had reported later, requiring a longer duration of medication and follow-up care, which would have been emotionally and financially taxing for the patient [21]. Additionally, issues with an inferiority complex, weight loss, appetite loss, sleep difficulties, nutritional inadequacies, and social isolation are observed at later stages of OSMF, which has an impact on quality of life (QoL) [22].

Our study is one of the very few that have been conducted to evaluate non-specific chief complaints in OSMF. Our study's findings were comparable to those of prior research by Sachdev *et al*. [23], which found that 72.41% of patients with stage 1 OSMF had non-specific dental complaints. The most common complaint was tooth pain in the third molar region (33.15%), which was followed by tooth stains (10.32%) and tooth mobility (3.804%). Another noteworthy study was conducted by Gadbail *et al*. [24], which found that 30.37% of the complaints were toothaches in the third molar area, and 73.41% of OSMF patients reported to the dental hospital had non-specific primary complaints in the early stages (stage I containing 47.05% and stage II comprising 22.5%). Dental caries were caused as a result of carelessness in maintaining proper oral hygiene.

It is important to consider the limitations of our study when interpreting this conclusion. The clinical cases were limited to those who reported to our dental institution because it was a retrospective data-gathering research. There's a chance that a sizable portion of our people, who live in rural regions and among migratory workers with changing demographics, are still unaccounted for and outside the institution's reach. To get around this, more extensive multicentric studies that include a range of individuals from different ethnic backgrounds must be developed to understand the lesion's malignant nature and its fluctuating clinical presentation. According to our studies, the gender predominance in OSMF was skewed toward men, which must also be considered in a larger context. This could also be explained by the fact that a sizable portion of women may not have visited dental hospitals because of obstacles to healthcare, including social

stigma, a lack of financial security, difficulty accessing hospitals, and a disregard for self-care, which causes diagnosis to be delayed.

The early identification of OSMF, which results in the creation of the necessary treatment plan, depends on a thorough clinical examination and correlation. To better understand OSMF patients who continue or stop therapy, long-term multicenter studies including samples from key provinces and regions will be a better research design. OSMF patients should continue to be followed with planned visits and routine screening and follow-up. This is important for public health promotion because health policies are developed with community needs and financial constraints in mind, which lowers comorbidities.

Conclusion

The results of the present investigation highlight the widespread carelessness of long-term tobacco users by indicating that the majority of OSMF diagnoses are accidental, particularly in the early stages. OSMF people avoid going to the dentist unless and until they have a significant incapacitation of their speech or masticatory abilities. Because OSMF is asymptomatic in grade 1, the most common non-specific dental complaint among individuals with OSMF is toothache. The present research emphasizes the necessity of histopathological grading and treatment measures regardless of the patient's primary complaint, even if OSMF was detected as an accessory result.

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Conflict of Interest: None

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Ethics Statement: The Institutional Ethical Clearance Committee authorized the present research's ethical and methodological components (protocol number: IHEC/SDC/OMED 2002/22/428).

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