

PREVALENCE OF ORAL SUBMUCOUS FIBROSIS AMONG GUTKHA/ARECA NUT USERS IN NORTHERN INDIA: AN ORIGINAL RESEARCH

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ABSTRACT

Aim: To assess the prevalence of oral submucous fibrosis among gutkha/areca nut users in Northern India. **Material and Methods:** Cross-sectional survey based study was carried out among 15 to 55 year old 1500 patients. Out of 1500 patients 1000 patients were male patients and 500 patients were female patients. Patients in which intraoral examination were not possible were excluded from the study. Complete oral examination was carried out related to OSMF. The data thus collected was subjected to statistical analysis. **Results:** Out of 1500 patients 85 male patients were found with OSMF and 16 female patients were found with OSMF. **Conclusion:** OSMF is a

precancerous condition and has high malignancy transformation rate. Early diagnosis is very important and proper treatment is necessary for good prognosis.

KEYWORDS: OSMF, Precancerous condition.

INTRODUCTION

Oral submucous fibrosis (OSMF) is a high risk precancerous condition with high relative risk rate for malignant transformation of 4.5 to 7.6%.^[1] Oral submucous fibrosis (OSMF) is an

insidious chronic disease affecting the mucosa of any part of the oral cavity and occasionally extending into the pharynx and esophagus. The condition is sometimes preceded by and/or associated with vesicle formation, but always associated with a juxtaepithelial inflammatory reaction followed by a fibroelastic change of the lamina propria with epithelial atrophy, leading to stiffness of the oral mucosa and causing trismus and inability to eat.^[2] Areca nut is the most common product people are addicted to, followed by tobacco, alcohol, and caffeine. Areca nut is said to cause precancerous conditions but apart from the carcinogenic potential, it is also addictive resulting in development of dependence symptoms.^[3]

The younger generation has been found to be getting habituated to areca nut and areca nut products are easily available in the market in different multicolored attractive pouches, i.e., sweet supari, gutka, kharra, etc. Aggressive advertising and marketing of areca nut products since early 1980s has greatly enhanced the sales of these products and these are easily available in each and every corner of rural/urban areas of all over India.^[4] An increase in the popularity of commercially prepared areca nut preparations in India and an increased uptake of this habit by young people due to easy access, effective price changes and marketing strategies are considered to be the reasons for the rapid increase of the disease.^[5] OSMF is a well-recognized potentially malignant disorder of the oral mucosa. Paymaster first described the malignant potential of OSMF in 1956, the rate of which has been estimated to be 7-13% recently. Many follow up studies had been conducted so far in order to identify the important aspects in malignant transformation of OSMF.^[6]



Photograph of patients suffering from oral submucous fibrosis

MATERIAL AND METHODS



Photograph Showing Armamentarium Used For Clinical Examination

- Instruments used: Plane mouth mirrors and probe, Tongue depressor, Cotton swab, Kidney trays, Cotton holders, 2x2 inch gauze pieces, Disposable gloves, Towel, Metallic scale, Big steel tray, Chittel forceps.
- Additional: Torch, Clip board, Indible pencils.

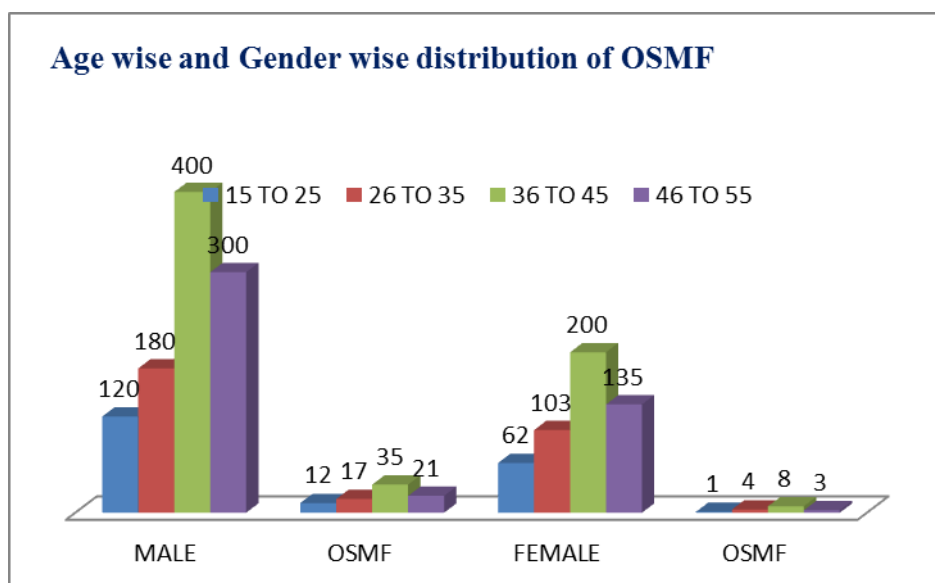
Cross-sectional survey based study was carried out among 15 to 55 year old 1500 patients. Out of 1500 patients 1000 patients were male patients and 500 patients were female patients. Patients in which intraoral examination were not possible were excluded from the study. Complete oral examination was carried out related to OSMF. Informed consent was obtained from the patients selected for the study. Examination of the oral cavity was performed under good illumination using gloves, probe, mirror according to Kerr, Ash, Millard and WHO guidelines and color atlas was followed during examination. The data thus collected was subjected to statistical analysis.

RESULTS

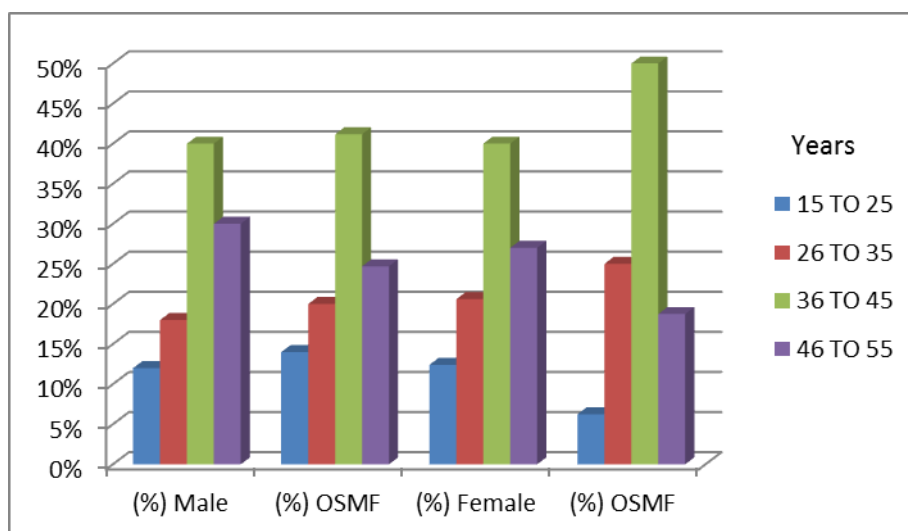
Table 1: Age wise and gender wise distribution of oral submucous fibrosis.

S. NO	AGE (YEARS)	M	(%)	OSMF	(%)	F	(%)	OSMF	(%)
1	15 TO 25	120	(12%)	12	(14%)	62	(12.4%)	1	(6.25%)
2	26 TO 35	180	(18%)	17	(20%)	103	(20.6%)	4	(25%)
3	36 TO 45	400	(40%)	35	(41.17%)	200	(40%)	8	(50%)
4	46 TO 55	300	(30%)	21	(24.70%)	135	(27%)	3	(18.75%)

Abbreviation: M- male, F- female, OSMF- oral submucous fibrosis Out of 1500 patients 85 male patients and 16 female patients were found with OSMF. Out of 85 male OSMF patients 35 (41.17%) patients were found to be between 36 to 45 years old followed by 21 (24.70%) patients found to be between 46 to 55 years old followed by 17 (20%) patients found to be between 26 to 35 years old followed by 12 (14%) patients found to be between 15 to 25 years old. Out of 16 female OSMF patients 8 (50%) patients were found to be between 36 to 45 years old followed by 4 (25%) patients found to be between 26 to 35 years old followed by 3 (18.75%) patients found to be between 46 to 55 years old followed by 1 (6.25%) patients found to be between 15 to 25 years old.



Graph 1: Age wise and gender wise distribution of oral submucous fibrosis.



Graph 2: Gender wise distribution of patients.

DISCUSSION

The most important etiologic agent in the pathogenesis of this condition is considered to be the habit of chewing areca nuts (the fruit of *Areca catechu* plant). A number of epidemiological surveys, case-series reports, large sized cross-sectional surveys, case-control studies, cohort and intervention studies have proved that areca nut is the main etiological factor for OSMF.^[7] Gutka is a mixture of tobacco along with areca nut, slaked lime, catechu, and condiments marketed commercially. Whereas kharra is a cheaper option containing similar contents with high tobacco concentration made locally by vendors. Consuming the combination of areca nut and tobacco leads to development of oral cancers, chronic obstructive pulmonary disease, cardiovascular diseases.^[8] The prevalence of OSMF in the present study was 6.73% which is similar to the study conducted by Nitin Kumar Nigum *et al*^[9] whereas Agarwal *et al* reported prevalence of OSMF as 5.4% in the age group of 13 to 19 years.^[10]

The management of an OSMF patient depends on the degree of clinical involvement. It comprises of: discontinuation of areca-nut related habit, nutritional support and antioxidants, physiotherapy, immunomodulatory drugs(steroids) for local/systemic application, intra-lesional injections of steroids, hyaluronidase, human placental extracts etc. either singly or in combination for early/milder form of disease and surgical measures for advanced cases with post-operative nutritional support and anti-oxidants along with active physiotherapy to prevent contracture at the surgical site and recurrence. It is very essential to follow these patients closely in order to prevent recurrence and to detect any developing malignancy at its earliest so as to manage this untoward and most common eventuality.

CONCLUSION

Oral submucous fibrosis is one of the diseases that is most poorly understood and unsatisfactorily treated. The progression of the disease depends upon the age of the patient; it progresses rapidly in younger age. Attributed to the increased cancer risk among these patients, periodic biopsies should be made essential for the early detection of cancer. Oral and maxillofacial health care professionals can play an important role in both the education of patients about the disadvantages of chewing betel quid and in the early diagnosis of potentially malignant disorders.

REFERENCES

1. Ahmad MS, Ali SA, Ali AS, Chaubey KK. Epidemiological and etiological study of oral submucous fibrosis among gutkha chewers of Patna, Bihar, India. *J Indian Soc Pedod Prev Dent*, 2006 Jun; 24(2): 84-89.
2. PindborgJJ, Sirsat SM: Oral submucous fibrosis. *Oral Surg*, 1966; 22: 76479.
3. Chandra PS, Mulla U. Areca nut: the hidden Indian “gateway” to future tobacco use and oral cancers among youth. *Indian J Med Sci*, 2007 Jun; 61(6): 319-321.
4. Auluck A, Hislop G, Poh C, Zhang L, Rosin MP. Areca nut and betel quid chewing among South Asian immigrants to Western countries and its implications for oral cancer screening. *Rural Remote Health*, 2009; 9(2): 1118.
5. Ranganathan K, Uma Devi M, Joshua E et al. Oral submucous fibrosis: A case control study in Chennai South India. *J Oral Patho Med*, 2004; 33(4): 274–277.
6. Hsue SS, Wang WC, Chen CH et al. Malignant transformation in 1458 patients with potentially malignant oral mucosal disorders: A follow-up study based in a Taiwanese hospital. *J Oral Pathol Med*, 2007; 36: 25-29.
7. Murti PR, Bhonsle RB, Gupta PC et al. Aetiology of oral submucous fibrosis with special reference to the role of areca nut chewing. *J Oral Pathol Med*, 1995; 24(2): 145-52.
8. Joseph N, Nagaraj K, Shashidhar KM. Arecanut and tobacco use among school children in a village in South India – a cross-sectional study. *AMJ*, 2010 May; 3(5): 299-303.
9. Nitin Kumar Nigum et al, prevalence of oral submucous fibrosis among habitual gutkha and areca nut chewers in Moradabad district, *journal of oral biology and craniofacial research*, 2014; 4: 8-13.
10. Agrawal A, Chandel S, Singh N, Singhal A. Use of tobacco and oral sub mucous fibrosis in teenagers. *J Dent Sci Res*, 2012; 3(3): 1-4.