A Clinical Profile of Oral Submucous Fibrosis

Dr. Mitesh Amitkumar Modi*, Dr. Vishal R. Dave, Dr. Viral G. Prajapati***, Dr. Keyur A. Mehta******

Department of ENT, *Senior Resident, GMERS Medical College, Valsad, ** Assosiate Professor, Medical College , GCRI, Ahmedabad, *** Assistance Professoer, B. J. Medical College, Ahmedabad, ****Assistance Professor, Govt.Medical College, Bhavnagar

Abstracts: Background: Oral submucous fibrosis (OSF) is a precancerous condition associated with the use of areca nut in various forms. There are very few reports to correlate the clinical stage to histopathological grading in OSF. Materials and Methods: A hospital-based study was conducted on 80 oral Submucous Fibrosis cases who visited our hospital in Jamnagar.. A detailed history of each patient was recorded along with a clinical examination. Biopsy was performed for histopathological correlation. Clinical stage of the disease in terms of the ability to open one's mouth was correlated with histopathological grading. Results: The male to female ratio of OSF cases was 3:1. All forms of areca nut products were associated with OSF. Chewing of paanmasala was associated with early presentation of OSF as compared to chewing of the betel nut The the result of all conservative therapy fails to reverse the disease. Conclusion: result of study recommend primary prevention for prevention of OSF [Modi M et al NJIRM 2012; 3(3) : 152-155]

Keywords: Areca nut, clinical staging, histopathological grading, oral submucous fibrosis,

Author for correspondence: Dr Mitesh Modi ,Senior Resident , GMERS Medical College, Valsad. Gujarat
E mail: drmiteshmodi@gmail.com

Introduction: Oral submucous fibrosis (OSMF) is a chronic, premalignant condition of the oral mucosa which was first described by Schwartz 1952.[1] Pindborg (1966) defined OSMF as, "an insidious, chronic disease affecting any part of the oral cavity and sometimes the pharynx. Although occasionally preceded by and/or associated with vesicle formation, it is always associated with juxta-epithelial inflammatory reaction followed by fibroelastic change of the lamina propria, with epithelial atrophy leading to stiffness of the oral mucosa and causing trismus and inability to eat".[2,3]

Worldwide, estimates of OSMF shows a confinement to Indians and Southeast Asians, with overall prevalence rate in India to be about 0.2% to 0.5 % and prevalence by gender varying from 0.2-2.3% in males and 1.2-4.57% in females[4]. The age range of patients with OSMF is wide ranging between 20 and 40 years of age[5]. It has been suggested that ingestion of chillies, genetic susceptibility, nutritional deficiencies, altered salivary constituents, autoimmunity and collagen disorders may be involved in the pathogenesis of this condition[3]. The condition is well recognized for its malignant potential rate of 7.6% and is particularly associated with use of areca nut in various forms with significant duration and frequency of chewing habits[6,7].

It has been suggested that consumption of chillies, nutritional deficiency, chewing of areca nut, genetic susceptibility, altered salivary constituents, autoimmunity and collagen disorders may be involved in the pathogenesis of this condition[8]. OSF is a well-recognized, potentially premalignant condition. Malignant transformation rates as high as 7.6% have been reported from the Indian subcontinent over a 17 year period[9].

Materials and Methods : The present study was carried out in the department of ENT at GG Hospital, Jamnagar after obtaining ehtical comittee permission and consent of patient.

Total of 80 cases of clinically diagnosed OSMF were considered for the study. Clinical details included name, age, gender and different tissue abuse habits like, chewing panmasala with or without tobacco, gutkha chewing, areca nut chewing, plain tobacco, mawa, smoking, alcohol. Also duration of habit in years, frequency of habit per day, style of chewing i.e. spitting, swallowing and also duration taken to chew was recorded. Clinical criteria for the diagnosis of OSF were difficulty in opening the mouth and associated blanched oral mucosa with palpable fibrous bands. Cases complaining of difficulty in opening the mouth due to other

reasons like inflammation etc were excluded from the study.

Results : In Present Study there were 60 male and 20 female cases . Maximum patiens were from age 21-30 year (36.25%). Followed by less than 11-20 year (33.25%). Detail Age distribution is shown in table 1.

Table 1- Distribution of cse according to Age

Year	No. of patients	Percentage (%)
0-10	0	0
11-20	27	33.75
21-30	29	36.25
31-40	12	15
41-50	7	8.75
51-60	3	3.75
61-70	2	2.50
Total	80	100

Presenting history of signs and symptoms of subject are discribe in Table 2, distribution of subject according to Habit and severity of OSF is given in Table 3 .

75% of the pataients chewing “gutkha” had mouth opening less than 20 mm, which is highly significant and it is followed by cnewing arecanut with tobacco. Average time to onset of disease is shown in Table 4

Table2 : Presenting history of signs and symptoms

Symptoms	No. of patients	Percentage (%)
Difficulty in opening Mouth	77	96.25
Burning in Mouth	76	95.00
Oral Ulcers	32	40.00
Dryness of Mouth	27	33.75
Halitosis	15	18.75
Alerered Taste	12	15.00
Difficulty in speech	9	11.25
Difficulty / pain in swalloing	3	03.75

Table 3 : Distribution of subject according to Habit and severity of OSF

Habits	Mouth opening (mm)					n	%
	0-10	11-20	21-30	31-40	>40		
None	0	1	1	0	0	2	2.5
Gutkha Chewing	2	10	4	0	0	16	20
Areca nut Chewing	0	2	5	4	0	11	13.8
Areca nut + Tobacco Chewing	0	10	14	5	0	29	36.3
Betel Quid	0	0	5	4	1	10	12.5
Areca nut + Tobacco+ Gutakha Chewing	0	2	2	1	0	5	6.3
Areca nut + Betel Quid+ Gutakha Chewing	0	1	5	0	0	6	7.5
other	0	1	0	0	0	1	1.3

Table 3 : Distribution of subject according to Average tiem to onset of disease

Habits	Year
Gutkha Chewing	2.25
Areca nut Chewing	2.27
Areca nut + Tobacco Chewing	4.47
Betel Quid	3.9
Areca nut + Tobacco+ Gutakha Chewing	3.1
Areca nut + Betel Quid+ Gutakha	4

Chewing	

Two of the eighty patients had malignancy. One of the patients had carcinoma of theright retro-molar trigone with left submendibular node and the other patients had carcinoma of left angle of lip and left buccal mucosa.

Treatment in the form of micronutrients showed no significant increse in the mouth

opening. While patients gien both micronutrients and physiotherapy showed significant mouth opening ($p<0.001$) and group with treatmetn of steroid injection showed highly significant mouth opening ($p<0.001$)

Discussion: OSF, a crippling disease of the oral mucosa, evokes the interest of dental professionals in different parts of the world. Its occurrence in various parts of India, South Africa and among Indian emigrants has been reported in dental literature. The peculiarity of the disease is that it is confined to a particular geographic region. This has led to the concept that dietary or cultural habits prevalent in this regions act as the aetiological factors. Case reports, epidemiological studies, animal experiments and in vitro culture studies all tried to explain the aetiopathogenesis, clinical and histopathological features.

Of the 80 cases of OSF studied, 60 cases were males and 20 cases were females. A literature survey shows a wide variation in age and sex distribution of OSF. Some of the epidemiological surveys in India have shown a female predominance in the occurrence of this entity. A male predominance in OSF cases was shown by Sinor et al[10]. in India. We also observed a male predominance and the male to female ratio was 3:1. Half of the study population was in the age group of 21-30 years. This observation is different from that of Pindborg et al[9]. who reported the maximum number of OSF cases in the age group of 40-49 years in their study. Increase in the chewing habit of the areca nut without any tobacco and the use of various commercial products containing areca nut may explain the decrease in the age of OSF cases due to various chewing habits.

Recent epidemiological studies in India and evidence from Indians living in South Africa point to the habit of chewing areca nut as the major aetiological factor of OSF.[11,8,12] In recent years, commercial preparations like paanmasala have become available in India and abroad. The main ingredient of these products is areca nut along with lime and catechu wrapped in a betel leaf with or without tobacco. Many patients with OSF give a history of chewing paanmasala.

Shah et al[13].reported that paanmasala chewing produced OSF changes in a shorter period of time than betel quid chewing. In our study, we observed that the mean duration of the habit in those who chewed betel quid was ten years while it was six years for betel nut chewers and five years for paanmasala chewers.

It is well-documented that in OSF, there is a progressive inability to open the mouth and tongue movement gets restricted to varying degrees depending up on the severity of the disease process. In a study of 800 normal patients in South India conducted by Ranganathanet al.[14], it is reported that the average size of the mouth opening was 47.5 mm and 44.6 mm in males and females respectively. In present study it was between 21-30 mm.This could be due to the fact that the majority of our patients reported for treatment only after the onset of restriction in their ability to open their mouths.

Absence of betel leaf, which has anti-oxidant properties and a consequently higher dry weight proportion of areca nut were responsible for early development of OSF. These findings are of great concern because younger individuals are at greater risk as it has been well established that OSF is a premalignant and crippling condition of the oral mucosa[15].

Conclusion: In this study, the occurrence of OSF was higher in the younger age group of 20-29 years. The prevalence of OSF was more in males than in females with a ratio of 3:1. The number of patients with a paanmasala chewing habit (36.30%) was higher than the number of patients with betel quid chewing habits (12.5%). The chewing of paanmasala was associated with earlier presentation of OSF as compared to betel nut chewing. Significant and direct

correlation to the manifestation of OSF was seen with frequency rather than duration of chewing.

References :

1. Angadi PV, Rekha K. Oral submucous fibrosis: a clinicopathologic review of 205 cases in Indians. Oral and Maxillofacial Surgery2011;15(1):15-9.
2. Pindborg J, Sirsat S. Oral submucous fibrosis. Oral Surgery, Oral Medicine, And Oral Pathology 1966;22(6):764.
3. Rajendran R. Oral submucous fibrosis: etiology, pathogenesis, and future research. Bulletin of the World Health Organization1994;72(6):985-96.
4. Phatak A. Fibrin producing factor in Oral Sub-Mucous Fibrosis. Indian Journal of Otolaryngology and Head & Neck Surgery 1979; 31(4):103-4.
5. Rajendran R, Sugathan C, Remani P, Ankathil R, Vijayakumar T. Cell mediated and humoral immune responses in oral submucous fibrosis. Cancer1986;58(12):2628-31.
6. Canniff J, Harvey W, Harris M. Oral submucous fibrosis: its pathogenesis and management. British Dental Journal1986;160(12):429-34.
7. Sinor P, Gupta P, Murti P, Bhonsle R, Daftary D, Mehta F, Pindborg J. A case control study of oral submucous fibrosis with special reference to the etiologic role of areca nut. Journal of Oral Pathology & Medicine1990;19(2):94-8.
8. Murthi PR, Bhonsle RB, Gupta PC, Daftary DK, Pindborg JJ, Mehta FS. Etiology of Oral submucous fibrosis with special references to the role of areca nut chewing. J Oral Pathol Med 1995;24:145-52.
9. Murti PR, Bhonsle RB, Pindborg JJ, Daftary DK, Gupta PC, Mehta FS. Malignant transformation rate in oral submucous fibrosis over a 17-year period. Community Dent Oral Epidermol 1985;13:340-1.
10. Sinor PN, Gupta PC, Murthi PR, Bhonsle RB, Daftary DK, Mehta FS, et al. A case control study of oral sub mucous fibrosis with special reference to the etiologic role of areca nut. J Oral Pathol Med 1990;19:94-8.
11. Neville BW, Allen CM, Damm DD, Bouquot JE. Oral and Maxillofacial pathology. WB Saunders Company: Philadelphia; 1995. p. 291.
12. Canniff JP, Harvey W, Harris M. Oral submucous fibrosis: Its pathogenesis and management. Br Dent J 1986;21:429-34.
13. Shah N, Sharma PP. Role of chewing and smoking habits in the etiology of oral submucous fibrosis: A case control study. J Oral Pathol Med 1998;28:475-9
14. Ranganathan K, Uma Devi M, Elizabeth Joshua, Arun Bhardwaj, Rooban T, Viswanathan R. Mouth opening, cheek flexibility and tongue protrusion parameters of 800 normal patients in Chennai, south India - A base line study to enable assessment of alteration in oral sub mucous fibrosis. JIDA 2001;72:78-80
15. Pindborg JJ, Bhonsle RB, Murti PR, Gupta PC, Daftary DK, Mehta FS. Incidence and early forms of oral sub mucous fibrosis. Oral Surg Oral Med Oral Pathol 1980;50:40-4.