

Oral Submucous Fibrosis- a Rare Case Report of Young Patient Having Very Little Interincisal Distance



Medical Science

KEYWORDS : OSMF, Premalignant condition, pan masala, Blanching, Hyaluronidase

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ABSTRACT

Oral submucous fibrosis is a premalignant condition having higher risk of developing cancer of oral cavity if untreated at early stages, and is characterized by stiffening of oral mucous membrane due to changes in connective tissue fibers of lamina propria involving deeper connective tissue. It results in limited mouth opening which may leads to, chewing swallowing, and speech problem. it occurs due to various reasons like chewing tobacco for a long time specially gutkha (pan masala is commonly known as) which contains areca nut, consumption hot and spicy food regularly and various other factors. OSMF is quite common in Indian subcontinent due to various oral habits like chewing tobacco, chewing pan masala etc. Early diagnosis is very important to prevent the lesion to be malignant.

Introduction:

Premalignant condition is described as condition which has greater potential to be malignant than normal if the causative agents cannot be removed. There are number of premalignant condition reported to occur in oral cavity, however oral submucous fibrosis is quite common. Oral submucous fibrosis is defined as chronic, insidious, disabling disease most commonly involves oral mucosa, oropharynx, and rarely larynx¹. Oral submucous fibrosis is high risk premalignant condition characterized by the changes in connective tissue fibers of lamina propria and deeper parts leading to stiffness of the mucosa and restricted mouth opening². Schwartz first reported OSMF in a series of Indian women living in east Africa there are descriptions of a similar condition occurring in betel chewers in early text dating back to 1908³. It is quite common in Indian subcontinent and especially in India⁴. Joshi described it as an oral condition in 1954⁵. The precancerous nature of OSMF was described by Paymaster in 1956 who described the development of slow growing squamous cell carcinoma in one third of the cases of OSMF⁶.

OSMF varies patient to patient in their signs and symptoms, some patients complain none other than that of restricted mouth opening and without a burning sensation or vesicles formation. However in majority of cases it starts with burning and sensation of oral mucosa, dry mouth, blanching of oral mucosa and ulcer like lesion. The burning sensation most commonly occurs while taking hot and spicy foods or in some cases the normal food may cause burning mouth sensation. The blanching of oral mucosa occurs due to reduced vascularity and increased fibrosis that gives a marble like appearance of oral mucosa. The spicy food containing capsaicin may be the reason of burning and vesicle formation in a patient of OSMF. In early cases of OSMF it involves the buccal mucosa, labial mucosa and in later stages involves tongue, soft palate and larynx. In advanced cases the fibrotic band restricts the mouth opening to such an extent that patient has difficulty in chewing, swallowing, speech and to maintaining the normal oral hygiene. Development of fibrotic band around the lips and buccal mucosa make lip thick, difficulty in everting the lips, buccal mucosa fibrosis make it thick and rigid. The fibrotic band around the lips and cheek make even the examination of oral cavity difficult. Patients are unable to whistle or blow in advanced cases. They lack the regular elasticity of oral mucosa. Involvement of tongue leads to depapillation as well as fibrosis and blanching around the lateral border of tongue. Hard palate involvement leads to blanching of the mucosa and soft palate including uvula involvement leads to

shrunk uvula. In extreme cases Eustachian tube also involved which leads to hearing loss. There are number of factors involved in developing OSMF including capsaicin, betel nut alkaloids, autoimmunity, genetic predisposition HLA-A10 DR3 DR7 and haplotypes A10/DR3 and malnutrition as suggested by many. Ramnathan suggested that OSMF may be a mucosal change secondary to chronic iron deficiency anemia calling it an Asian analogue of sideronic dysphagia⁷. It has been also suggested that it is a non-specific inflammatory reaction to trauma yet its exact etiology is not known⁸.

The most common reason for OSMF as reported in literature is chewing of betel quid containing areca nut, the amount of areca nut in betel quid and frequency of duration of chewing betel quid are clearly related to OSMF⁹. However the consumption of pan masala in various forms containing areca nut and other products are seeing very hazardous and cause of concern. It is suggested that the juxtaepithelial inflammatory reaction and fibrosis of oral mucosa, probably due to increased cross linking of collagen through up regulation of lysyl-oxidase activity¹⁰. This fibrosis which increases collagen production to many fold due to areca nut containing arecoline and decreases the degradation of collagen⁹. Thus OSMF now considered as collagen metabolic disorder¹¹.

Case report:

A patient named amit sahu male, thin built, aged 22 years reported to my OPD on march 14, 2013, at my clinic complaining of burning sensation while taking food, inability to chew properly and difficulty in mouth opening, since 5 to 6 years, this inability in opening of mouth was progressive. There was no any other systemic complaint about other body function. Past medical history revealed nothing, there were no any systemic problem found. Regarding personal habit he told that, he was a chronic gutkha chewer (pan masala containing betel nut and other tobacco products) since his early days and takes 15 to 20 sachets of pan masala daily, and occasionally alcohol.

Intraoral examination revealed poor oral hygiene, plaque and calculus was present. The most significant finding was that there was no mouth opening at all, even a handle of mouth mirror was not going inside the oral cavity. There were thick fibrous band around the buccal and labial mucosa of cheek and lips which is preventing mouth opening. The colour of mucosa is pale white i.e. marble like which is typical in oral submucous fibrosis was present. When he was asked to blow with lips closed he was

unable to do so, hence the usual puffed cheek appearance was not seen, due to fibrosis or loss of normal elasticity of the tissue. Lymphnodes were not palpable. Other physical examinations were normal. Laboratory examinations of CBC were in normal range.

The diagnosis of OSMF at advanced stage was provisionally made based on the presenting signs and symptoms. Most of the time the diagnosis of OSMF were made upon the clinical presentation of burning sensation, difficulty in chewing and difficulty in mouth opening and blanching of oral mucosa.

He was sent for histological examination to confirm the diagnosis. Later on the histological examination confirmed it a case of oral submucous fibrosis.

Treatment modalities: Quitting the habit of taking pan masala and other tobacco related products is most important to further progression of the OSMF.

Intralesional: injection of corticosteroid, placental extract and hyaluronidase is very important in breaking collagen and helps in improvement of the condition.

The combination of local injections including, chymotrypsin, hyaluronidase, and dexamethasone, give better results than with one drug alone or combination of dexamethasone with chymotrypsin or dexamethasone with hyaluronidase alone⁸. Combined therapy with nilydrin hydrochloride (peripheral vasodilator), vit D, E, B –complex, iodine, placental extract, local and systemic corticosteroids and physiotherapy claims a success rate of 62% in OSMF¹².

Surgical management- surgical management including the forceful mouth opening and surgical removal of fibrotic bands have resulted in more fibrosis and disability. A new surgical technique consisting of excision of surgical band and submucosal placement of fresh human placental grafts, followed by local injection of dexamethasone was recommended for advanced cases⁸

Table 1: Different treatment regimen in OSMF

Treatment	Modalities
Steroids(topical) ¹	To be applied locally at site of lesion
Steroids(intralesional) ¹	Submucosal injection twice a week in multiple sites for 3 months at the site of lesion.
Combination of chymotrypsin, hyaluronidase and dexamethasone ⁸	Chymotrypsin(5000I.U) Hyaluronidase(1500I.U) Dexamethasone(4mg) Twice weekly submucosal injection for 10 weeks. 0
Turmeric ¹³	Alcoholic extract of turmeric (3g), turmeric oil (600mg), turmeric oleoresin (600mg) for 3 months.
Lycopene ¹⁴	8 mg twice a day for 2 months.
Interferon gamma ¹⁵	Intralesional injection of interferon gamma(.01-10 U/ml thrice a day for 6 ,months
Fig 1: no mouth opening	



Fig 1 showing no mouth opening

Discussion:

Oral submucous fibrosis is a premalignant condition which has potential to turn malignant if the offending factors are not withdrawn. The malignant transformation was first reported by paymaster in one third cases of OSMF cases seen in Tata memorial hospital Bombay⁶. The frequency of cancerous changes is reported to be 3% to 6% in OSMF cases as reported by various authors. In Ernakulum district of Kerala in 10 year follow up period, Gupta et al reported malignant transformation in 2.3% of patient with OSMF¹⁶. In the same area and familiar method Pindborg et al in a 15 year follow up period reported malignant transformation rate of 4.5%¹⁷.the most common reason as seen in most of the reported case is chewing of pan masala which contain areca nut as a main component and other tobacco related products. The pan masala is processed with other chemical substances which make its more harmful. It is more common in India and south East Asia. It is more commonly seen in low socioeconomic group members. The cause of concern that a great majority of young people are affected due to their habit of chewing areca nut and other harmful substances. Once it is not early diagnosed it may leads to malignant transformation which not only cause disfigurement of facial profile as well as causes heavy financial loss. In countries like India and Indian subcontinent where there is shortage of good cancer centre for treating oral cancer this makes the situation more difficult.

In order to prevent the condition like OSMF a total restriction on the pan masala as well as other related products is needed. The second thing is that in rural areas a dental surgeon is must be appointed for screening and to counseling of patient about the consequences of the OSMF.

REFERENCE

1. Borle RM, Borle SR, Management of Oral Submucous fibrosis-A Conservative approach. *J Oral Maxillofacial Surg* 1991; 49:788-91. | 2. Hazarey VK, Erlewad DM, Mundhe KM, Ughade SN. Oral submucous fibrosis: study of 1000 cases from central India. *J Oral Pathol Med*. 2007; 36:12-7. | 3. Issac U, Issac JS, Ahmed Khoso N. Histopathologic feature of oral submucous fibrosis: a study of 35 biopsy specimens. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2008;106:556-560. | 4. Scully C. The Oral Cavity. In *Text Book Of Dermatology*. Fifth edn. Edited by Champion RH, Burton IL, Ebling FJG. Oxford Blackwell Publication, London, 1992; 4:2689-760. | 5. Dayal PK, Joshi HN, Dayal JP. Concomitant occurrence of oral submucous fibrosis, pemphigus, and squamous cell carcinoma. *Indian J Pathol Microbiol*. 1988; 31:334-7. | 6. Paymaster JC. Cancer of buccal mucosa; a clinical study of 650 cases in Indian patients. *Cancer*. 1956; 9:431-5. | 7. Caniff JP, Harvey W, Harris M. Oral submucous fibrosis- its pathogenesis and management. *Br Dent J* 1986; 160:429-34. | 8. Gupta D, Sharma SC. Oral submucous fibrosis- A new treatment regimen. *J Oral Maxillofac Surg* 1988; 46:830-33. | 9. Rajalalitha P, Vali S. Molecular pathogenesis of oral submucous fibrosis- A collagen metabolic disorder. *J Oral Pathol Med* 2005;34(6):321-8. | 10. Trivedi CR, Warnakulasuriya KA, Peters TJ, Senkus R, Hazarey VK, Johnson NW. Riased copper levels in oral submucous fibrosis. *J Oral Pathol Med* 2000; 29(6):241 -8. | 11. Shieh TY, Yang JF. Collagenase activity in oral submucous fibrosis. *Proc Natl Sci Counc Repub China B* 1992; 16(2):106-10. | 12. Sharma JK et al clinical experience with the use of peripheral vasodilators in oral disorders. *Int j. oral .max.fac.surg.*, 1987, 16:695-699. | 13. Hastak K, Lubri N, Jakhi SD, More C, John A, Ghaisas SD, and other. Effect of turmeric oil and turmeric oleoresin on cytogenetic damage in patients suffering from oral submucous fibrosis. *Cancer let* 1997; 116(2):265-9. | 14. Kumar A, Bagewadi A, Keluskar V, Singh M. Efficacy of lycopene in the management of oral submucous fibrosis. *Oral surg Oral med, oral parhol oral radiol endod* 2007;103(2):207-13. Epub 2006 Oct 24. | 15. Haque MF, Meghji S, Nazir R, Harris M. Interferon gamma (IFN-Gamma) may reverse oral submucous fibrosis. *J O ral Pathol Med* 2001;30(1):12-21 | 16. Gupta PC et al incidence rate of oral cancer and natural history of precancerous lesions in 10 year follow up study of Indian villagers. *Community Dent, oral epidemiol.*, 1980, 8:287-333. | 17. Pindborg JJ et al. Oral submucous fibrosis as a precancerous condition. *Scand. J. Dent. Res.*, 1984:224-229. |