

Oral Submucous Fibrosis: A Case Report

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Abstract: Oral submucous fibrosis (OSMF) is an insidious chronic disease affecting oral cavity with significant malignant potential. It is globally being accepted as Indian disease with prevalence of 6.42%. Numerous treatment options for symptomatic relief of OSMF have been described in literature, ranging from medical management to surgical intervention and selection of treatment modality is dependent on the stage of disease and patient factor. In this paper, a case of oral submucous fibrosis occurring in a 44-year-old male patient is discussed with emphasis on loco – regional flaps used for reconstruction.

Keywords: Oral submucous fibrosis, Nasolabial flap, Platysma flap, Reconstruction of intra - oral defect

1. Introduction

Oral submucous fibrosis is a chronic debilitating disease characterized by gradual increase of fibrosis in oral cavity and pharynx, mainly buccal mucosa resulting in trismus. This condition was first described by Schwartz in 1952. [1] It is a collagen related disorder predominantly associated with areca nut / tobacco chewing and results in progressive hyalinization of the submucosa. Oral submucous fibrosis predominantly occurs in India and South East Asia. Recent studies reveal a steep increase in prevalence of OSMF in India from 0.03% to 6.42%. [2] It carries a high risk of malignant transformation. This paper discusses a case of Grade 4 OSMF with a mouth opening of 1mm.

2. Case Report

A 44-year-old male patient reported to the Department of Oral & Maxillofacial Surgery, A. J. Institute of Dental Sciences, with difficulty in mouth opening since 2 year. He also complains of burning sensation of mouth and difficulty in food intake. He reported to a local dental clinic for the same complaints 7 months back and was treated with Intra lesional injections of Inj. Kenacort, Inj. Placentrix and Inj. Hylase once weekly for 5 weeks, after which patient discontinued the treatment. He was also put on Cap. Oxitard once daily for a period of 1 month. His medical history was not significant. Pt. was an areca nut chewer for past 20 years. Clinical examination showed no lymphadenopathy, swelling or asymmetry. Limited mouth opening with inter – incisal opening of 1 mm was noted. Intra – orally dentition was periodontally compromised with grade III tobacco stains and calculus reflecting his strong habit practice. Oral mucosa was pale and black pigmentation of gingiva was noted.

Buccal mucosa was leathery in consistency with fibrotic gingiva. Thick palpable fibrous bands were found bilaterally in buccal mucosa extending from the commissure of mouth anteriorly. Posterior extension of bands, soft palate, tongue and floor of the mouth could not be assessed due to compromised mouth opening. An incisional biopsy was performed which revealed histological features of Oral Submucous fibrosis infiltrating the muscular layer. The condition was explained to the patient along with treatment options available. Patient was planned for excision of fibrous bands followed by reconstruction with loco – regional flaps and an informed consent for the same was obtained.



Figure 1: Pre-operative mouth opening

Pre – operatively prophylactic antibiotics (Inj. Taxim 1gm) was administered. Fiberoptic naso – tracheal intubation was done, following standard aseptic protocols, the surgical area was prepared. Lignocaine with adrenaline was infiltrated bilaterally in buccal mucosa, and the excision of fibrous bands was carried out with an electro-surgical knife and finger dissection from the oral commissure to the pterygomandibular raphe region. Following this bilateral coronoidectomy was performed to ensure the intra – operative mouth opening was 35mm. Maximum inter incisal opening was recorded using scale.

On the left side, nasolabial flap was used for reconstruction. After preparing the site, markings for inferiorly based nasolabial flap was done, site was infiltrated with local anesthetic, and flap was raised. The width of flap was 1.5 cm at base which was tapered to 0.5 cm in the superior aspect. Blunt dissection was carried out and the flap was raised in supra muscular plane. The pedicle was positioned around modiolus and medially a trans buccal tunnel was created. The tunnel was widened so that the flap could be positioned intra orally without any tension to the pedicle.

On the right side a platysma myocutaneous flap was used for reconstruction. The neck of the patient was hyper extended, the marking for skin paddle was made and site was infiltrated with local anesthetics. Superior incision was made 3.5 cm below the inferior border of mandible in the skin crease and supra platysmal dissection was done. Second incision was made at the inferior line of paddle and further dissection was done to expose platysma. The muscle was then transected 1 cm inferior to the paddle's edge and sub platysmal dissection was carried out, developing the plane of dissection after which the flap was separated for mobilization. A soft tissue tunnel was developed to transfer

the flap intra – orally in position. Both the flaps were sutured in place with 4-0 vicryl and donor site was closed in layers with 4-0 vicryl and 5-0 prolene. Gentamycin and betadine wash were given. Patient was shifted to post–operative ward uneventfully. Mouth opening exercise was started from post-operative day 1 for a frequency of 3 times per day. During the post-operative period the patient was put on antibiotics and analgesics.



Figure 2: Nasolabial flap on left side



Figure 3: Post-Operative mouth opening at 3 months



Figure 4: Platysma myocutaneous flap on right side

Demonstration to use heister’s mouth gag for mouth opening exercise was given. Patient was advised to continue mouth

opening exercise to attain minimum of 35 mm. Follow up was done in 1 week, 1 month and 3 months post-operatively. During each follow up appointment mouth opening was measured and documented.

Table 1: Maximum inter - incisal opening

Follow up interval	Mouth opening
1 week	28mm
1 month	30mm
3 months	31mm

3. Discussion

Jens J. Pindborg in 1966, defined Oral submucous fibrosis as “an insidious, chronic disease that affects any part of oral cavity and sometimes pharynx. It is associated with a juxtaepithelial inflammatory reaction which is followed by fibroelastic change of lamina propria and epithelial atrophy leading to stiffness of oral mucosa, causing trismus and difficulty in food intake. Other features include reduced movement and depapillation of tongue, blanching and leathery texture of oral mucosa, progressive reduction of mouth opening and shrunken uvula. [1]

Table 2: Maximum Inter - Incisal Opening

More et al. Staging of OSMF	Maximum interincisal opening
M1	≥ 35 mm
M2	25 – 35 mm
M3	15 – 25 mm
M4	> 15 mm

The incidence of OSMF in India ranges from 0.2 to 2.3% in males and 1.2 to 4.6% in females, with a wide age range of 11 to 60 years. [1,2] The etiology of OSMF is multifactorial but chewing of areca nut is considered as the main causative agent. Other risk factors include chewing of smokeless tobacco, excessive intake of chillies, high level of copper in food, vitamin deficiencies, malnutrition and genetic predisposition. Clinical signs and symptoms include burning sensation, pain, ulceration, progressive restriction in mouth opening, blanching of mucosa, depapillation of tongue and loss of pigmentation. In advance cases, difficulty in swallowing, dysphonia and hearing impairment due to occlusion of eustachian tube may be seen. Several studies conducted lend support to the concept that oral submucous fibrosis is a precancerous condition causing atrophy of oral mucosa making it vulnerable to action of carcinogens, eventually leading to carcinoma. [2,3] The severity of the disease increases with time. In this case, it took a duration of 8 years for the disease to progress to current stage from the time, the patient first noted the discomfort. Treatment modality is dependent on clinical presentation, staging and patient factors. More et al in 2012 gave the functional staging of OSMF as depicted in Table 2.

Various methods of treatment have been adopted for treatment of OSMF such as antioxidant treatment, medicinal treatment and surgical approaches. Medical management is seen to be effective in the management of Grade I and II OSMF and severe cases are often managed by surgical intervention. Karemore T. V and Motwani M concluded that ingestion of 8g/QD of lycopene for 3 months was effective in reducing the burning mouth and improved the mouth opening in

patients with Grade I OSMF. Hazarey V. et al demonstrated that sucking 2g/QD of Curcumin lozenges with physiotherapy for three months showed significant improvement in both mouth opening and alleviating the burning sensation. Goel S. et al. conducted a study in 270 patients and concluded that 4mg/ml/ biweekly injections of Betamethasone diluted in 1.0ml of 2% xylocaine for 6 months in buccal mucosa bilaterally using an insulin syringe, with half a dose on each side showed significant improvement in mouth opening and reduction in burning sensation in stage II and stage III OSMF. Kamath V. V published a systematic review comparing the surgical approaches to manage OSMF and concluded that lasers, tongue flap, palatal flap, buccal pad of fat, nasolabial flap, thigh flaps, split skin grafts, collagen membrane, artificial dermis, human placenta grafts, coronoidectomies, muscle myotomies and oral stents all show significant improvement in symptoms of OSMF. Futrell in 1978 used the platysma myocutaneous flap for closure of intra oral defect. [1,5]

Due to its dual blood supply, Nasolabial flap assures successful take up post-surgery. Moreover, the procedure of harvesting the flap is simple and its proximity to the defect makes it reliable tool for reconstruction of intra oral defects. The dimension of nasolabial flap is also adequate to cover the defect fully. Post-operative scars are hidden in the nasolabial folds thus making it esthetically acceptable. [3,4,5]

Platysma myocutaneous flap due to its location is another important flap that can be used for closure of intra oral defects. It is thin and pliable flap and the donor site can be closed with an acceptable scar that can be hidden under the collar. The arc of rotation of platysma myocutaneous flap makes its suitable for reconstruction of anterior / lateral buccal mucosa, retromolar trigone and skin of lower cheek and parotid region. [6,7,8]

In this case we used an inferior based nasolabial flap on the left side and a platysma myocutaneous flap on right side to cover the intra oral defect created by excision of fibrous bands. Aggressive physiotherapy was started from post-operative day 1. A mouth opening of 35mm was obtained intra-operatively.

After 3 months of post-operative follow up a mouth opening of 31mm was noted. No complication was noted during the intra-operative and in the post-operative stages.

4. Conclusion

Oral submucous fibrosis is a potentially malignant disorder, requiring close monitoring and regular follow up with discontinuation of deleterious habits. Currently the use of radial forearm free flap is the choice of treatment for management of severe OSMF cases but its prevalence among people of poor socio – economic status renders the use of free flaps difficult in this scenario. Loco – regional flaps like nasolabial and platysma myocutaneous flaps due to its proximity to defect, acceptable esthetics, less donor site morbidity and cost effectiveness becomes a reliable tool reconstruction of intra oral defects.

5. Conflict of interest

The authors declare no conflict of interest

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