Case Report

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"Fibrotomy: Breaking the Chains of OSMF"

Abstract:

Background: Oral Submucous Fibrosis (OSMF) is a chronic, insidious, and potentially malignant disorder of the oral cavity characterized by inflammation and progressive fibrosis of the submucosa. It predominantly affects populations in the Indian subcontinent and Southeast Asia, with areca nut and betel quid chewing identified as the primary etiological factors. The condition results in mucosal stiffness, trismus, burning sensation, dysphagia, and carries a significant risk of malignant transformation. Various management strategies, including conservative, medical, and surgical interventions, have been explored .

Aims and Objectives: The aim of this paper to analysis and outline the treatment of oral submucosal fibrosis with the description of the case report of the pt. with oral submucosal fibrosis treated with fibrotomy procedure in order to achieve mouth opening and its function .

Methods: A study of the adult male patient visited in the department of oral and maxillofacial surgery with reduced mouth opening (<10mm), resulting in impaired chewing function and pt was edentulous since 5 years . Patient also underwent conservative treatment procedure for oral submucosal fibrosis and was not satisfied with the treatment . surgical procedure of OSMF has been performed with fibrotomy followed by placement of buccal fat pad and collagen membrane .

Results: After Surgery patient has mouth opening of 33 mm and has been able to perform various function like maintainance of oral hygine and undergone placement of denture so as to maintain the function of chewing food ,early post-operative exercise and physiotherapy and close follow up of the patient . Place important role in prevention of postoperative relapse cases . Although various procedures reported satisfactory improvements in mouth opening . while surgical management provides symptomatic relief and functional improvement in OSMF, there are no standardized treatment guidelines. The choice of surgical technique largely depends on the operator's preference .

Key-words: Precancerous disorder, Oral submucous fibrosis, Surgical interventions, Flaps, Grafts.

Introduction:

Oral Submucous Fibrosis (OSMF) is a persistent, advancing, and possibly cancerous condition of the oral cavity marked by inflammation and an overabundance of collagen accumulation in the submucosa. The condition was initially characterized by Schwartz in 1952 as "Atropicaidiopathica mucosae oris" and subsequently outlined by Jens J. Pindborg in 1966 as "a gradual, persistent illness impacting any region of the oral cavity and occasionally the pharynx, invariably linked with a juxtaepithelial inflammatory response followed by fibroelastic alterations of the lamina propria and epithelial atrophy, resulting in rigidity of the oral mucosa and limited jaw movement."

Clinically, OSMF appears as a pale and leathery oral mucosa, a burning feeling, dry mouth, ulcers, loss of tongue papillae, gradual decrease in mouth opening, and challenges in speech and chewing. The characteristic feature of the disease is submucosal fibrosis, mainly affecting the oral cavity, pharynx, and sometimes the upper third of the esophagus.

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Epidemiologically, OSMF primarily impacts people of Asian heritage, with the highest occurrence noted in India, Bangladesh, Sri Lanka, Pakistan, Taiwan, and some regions of Southern China. The worldwide incidence of OSMF has skyrocketed—from about 250,000 cases in 1980 to close to 2 million in 1993—mainly because of the growing popularity of commercially sold areca nut items like pan masala and gutka. The straightforward availability, low cost, and intense promotion of these items have played a crucial role in the growth of OSMF, especially among young people.

Areca nut chewing is identified as the main causative factor in terms of its etiology. Its components—especially arecoline and copper—cause fibroblast impairment, resulting in overproduction of collagen and fibrosis. Additional contributing elements encompass capsaicin found in chili peppers, deficiencies in micronutrients (such as iron, zinc, and vital vitamins), and potential genetic or autoimmune tendencies, as indicated by the existence of particular autoantibodies and HLA correlations.

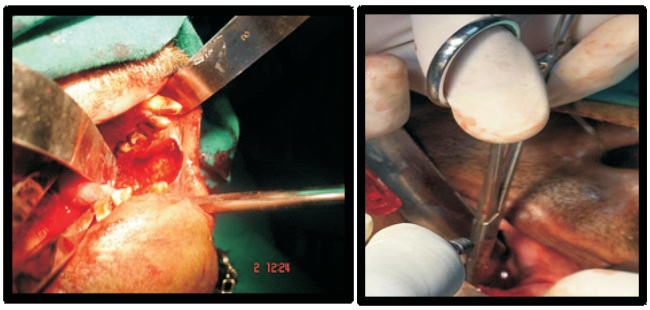
Despite various treatment options, there is no conclusive cure for OSMF. Present management approaches focus on reducing symptoms, halting disease advancement, and restoring oral functionality. Surgical procedures, including the removal of fibrotic bands and interpositional grafting, have demonstrated varying levels of success.

Due to its widespread occurrence, progressive nature, and risk of malignant transformation, OSMF constitutes an important public health issue. This study seeks to rigorously assess recent advancements in the comprehension, causes, and treatment of Oral Submucous Fibrosis to improve clinical results and guide prevention efforts.

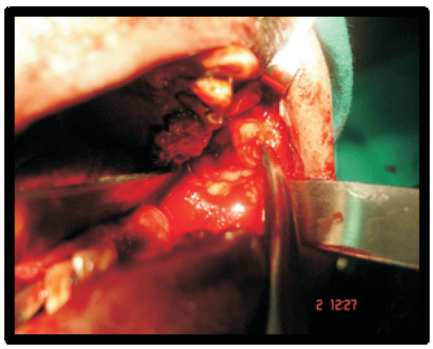
Case Presentation :

A 42 year old male patient has visited in theour Department of Oral and Maxillofacial Surgery in Maharana Pratap College of Dentistry and Research centre, Gwalior with the chief complaint of inability in opening of mouth (<8mm) since 5 years. Blanching over palate, faucial pillars, retromolar trigone, and buccal mucosa .Bilateral fibrous bands were palpable on buccal mucosa .Burning sensation present .extraoral examination ,Reduced mouth opening was limited to 12 mm without jaw deviation.

An intraoral incision was made 1 cm posterior to the corner of the mouth, extending towards the retromolar trigone, ensuring placement below 5-7 mm to the parotid duct. Bilateral fibrous band was released . The inter-incisal mouth opening (IIMO) of 33 mm was achieved .



After the excision of bands, with blunt dissection the Buccal Fat Pad is mobilised out until adequate tissue is obtained to cover the defect.



Suturing was done with 3-0 vicrylsuture .

The surgical procedure of fibrotomy with buccal fat pad reconstruction in the patient with the resection of the fibrous band had achieved a mouth opening of 33 mm and restore normal function

Kerr et al.[23] gave the following grading system for OSMF as:

Grade 1: Mild: Any features of the disease triad for OSMF (burning, depapillation, blanching or leathery mucosa) may be reported and inter-incisal opening >35 mm

Grade 2: Moderate: Above features of OSMF and inter-incisal limitation of opening between 20–35 mm

Grade 3: Severe: Above features of OSF and inter-incisal opening 35 mm

Grade 4A: Above features of OSMF with other potentially malignant disorders on clinical examination

Grade 4B: Above features of OSMF with any grade of oral epithelial dysplasia on biopsy

Grade 5: Above features of OSMF with oral squamous cell carcinoma.

More et al.[24] gave the following classification based on clinical and functional parameters as:

I: Clinical staging:

Stage 1 (S1): Stomatitis and/or blanching of oral mucosa.
Stage 2 (S2): Presence of palpable fibrous bands in buccal mucosa and/or oropharynx, with/without stomatitis.
Stage 3 (S3): Presence of palpable fibrous bands in buccal mucosa and/or oropharynx, and in any other parts of oral cavity, with/without stomatitis.
Stage 4 (S4): A: Any one of the above stage along with other potentially malignant disorders, e.g., oral leukoplakiaand oral erythroplakia. B: Any one of the above stage along with oral carcinoma.

II: Functional staging:

M1: Inter-incisal mouth opening up to or >35 mm
M2: Inter-incisal mouth opening between 25 to 35 mm
M3: Inter-incisal mouth opening between 15 to 25 mm
M4: Inter-incisal mouth opening

Discussion : Local Flaps:

Local flaps were further subdivided into intraoral and extraoral flaps.

(A) Intraoral flaps
Tongue flaps
Palatal island flaps

(B) Extraoral flaps
Buccal fat pad
Nasolabial flap
Temporalis fascia flap

Treatment Type	Agent / Method	Key Findings / Outcomes
Antioxidant Therapy	Lycopene	Improves mouth opening and reduces burning sensation significantly.
	Curcumin	Combined with physiotherapy, shows significant relief in burning sensation and improved mouth opening.
	Micronutrient Supplement	Vitamins (A, B-complex, C, D, E) and minerals (iron, zinc, magnesium) help reduce symptoms and improve healing.
	Spirulina & Aloe Vera	Both enhance mouth opening; aloe vera serves as a beneficial adjuvant when used with other therapies.
Medicinal Therapy	Corticosteroids (Betamethasone, Dexamethasone)	Intralesional injections improve mouth opening and decrease burning sensation.
	Hyaluronidase	Enhances mouth opening, reduces mucosal stiffness and burning sensation.
	Colchicine + Hyaluronidase	Combination provides faster symptom relief and better improvement in mouth opening.
	Placental Extracts	Promotes healing, increases mouth opening, and relieves burning sensation.
	Isoxsuprine	Vasodilator that improves blood circulation, enhances mouth opening, and reduces burning sensation.
	Pentoxifylline	Improves microcirculation, reduces fibrosis, and alleviates oral discomfort.
Physiotherapy	Ultrasound & Mouth Exercises	Improves mouth mobility, reduces burning, and prevents further fibrosis.
Surgical Management	Fibrotomy with Grafting (Buccal Fat Pad, Nasolabial, Tongue, Thigh, Collagen Membrane, etc.)	Effective in advanced cases to release fibrotic bands and restore oral function.

Conclusion:

The management of Oral Submucous Fibrosis (OSMF) requires a multidisciplinary approach aimed at habit cessation, symptom relief, and functional restoration. While various medical and surgical modalities—such as corticosteroids, hyaluronidase, placentrex, and surgical fibrotomy with grafting—have shown promising outcomes, no single treatment has proven universally effective. Combined pharmacological therapies and physiotherapy demonstrate encouraging results, but further large-scale clinical trials are essential to establish standardized, evidence-based treatment protocols for optimal patient care and prevention of malignant transformation.

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