

# Management Of Oral Submucous Fibrosis Grade III with Intralesional Injection of Placental Extract, Hyaluronidase and Dexamethasone – A Case Report.

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## **Abstract**

*This case report discusses the management of Grade III Oral Submucous Fibrosis (OSMF), a debilitating condition prevalent in the Indian subcontinent, characterized by oral mucosal stiffness and functional limitations, often associated with areca nut chewing. The patient, a 26-year-old male, presented with difficulty in mouth opening due to OSMF. Conservative treatment involving intralesional injections of placental extract, hyaluronidase, and dexamethasone, along with adjuvant therapy including lycopene supplementation and physiotherapy, was administered. Significant improvement in mouth opening was observed after four weeks of treatment. OSMF's multifactorial etiology includes areca nut chewing, spicy food ingestion, genetic predisposition, and nutritional deficiencies. Various treatment modalities have been attempted, including surgical interventions and pharmacotherapy targeting inflammation and fibrosis. Placental extract stimulates tissue regeneration, hyaluronidase breaks down fibrous bands, and dexamethasone exerts anti-inflammatory effects. This case highlights the efficacy of conservative therapy in managing OSMF, emphasizing the importance of early detection and intervention in preventing disease progression and improving patient outcomes.*

**Keywords:** *Oral Submucous Fibrosis, Intralesional Injections, Placental Extract, dexamethasone*

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## **I. Introduction**

Oral submucous fibrosis (OSMF) is one of the debilitating diseases which is affecting oral cavity and oropharynx & its incidence rate is higher in Indian subcontinent. According to Chandramani More and Naman Rao (2019)<sup>(1)</sup>, "It is a debilitating, progressive, irreversible collagen metabolic disorder induced by chronic

chewing of areca nut and its commercial preparations; affecting the oral mucosa and occasionally the pharynx and esophagus; leading to mucosal stiffness and functional morbidity; and has a potential risk of malignant transformation.”

The pathogenesis of OSMF is multifactorial. Its etiopathogenesis includes areca nut chewing, excessive ingestion of chilies, immunologic procedures and hereditary etc. This may trigger the inflammatory procedure causing a juxtaepithelial inflammatory response in the oral mucosa. Arecoline, an alkaloid found in betel nuts stimulates fibroblasts to increase the production of collagen. Nutritional deficiencies like iron insufficiency anemia, vitamin B complex deficiency, and malnutrition interfere with the repair if the inflamed oral mucosa leading to insufficient healing and defective scarring. The most common initial symptoms of OSMF are ulceration, xerostomia, a burning sensation, and limited ability to open the mouth leads to difficulty while eating, speaking and poor oral hygiene. (2,3)

The interventions in the treatment of OSMF include a wide spectrum of medications comprising of dietary supplements (vitamins and antioxidants), anti-inflammatory agents (corticosteroids), proteolytic agents (such as hyaluronidase and placental extracts), vasodilators, immunomodulators, and anti- cytokines. These modalities may be administered orally, topically, or via submucosal injection. The advanced cases of OSMF are managed by surgical interventions. (4)

Here we are presenting a case report of OSMF which had been managed with conservative measures by giving intra lesion injections of placental extract, hyaluronidase and dexamethasone in combination with satisfactory results.

## II. Case Report

A 26-year-old male patient reported to our department with the chief complaint of difficulty in opening the mouth for 2 years which was gradually decrease to attain the present condition. Patient had a history of areca nut chewing thrice a day for 6 years. On extra oral examination, facial symmetry was present and patient had reduced mouth opening of 19 mm (Figure 1). On intraoral examination, diffuse blanched appearance was noticed.

The buccal mucosa was rubbery and inelastic with vertical band in the posterior molar region and the retromolar region. Due to limited mouth opening; patient had a poor oral hygiene status. Figure 1: Reduced mouth opening

Based on the history and clinical examination, the patient was provisionally diagnosed with grade III OSMF. The patient was counseled to stop his habit.

He was treated by bilaterally intralesional injection (Mixture of Placental extract, Hyaluronidase, Dexamethasone) once in a week for 4 weeks. Adjuvant treatment includes capsule lycopene (500mcg) 2 times daily and aggressive physiotherapy. Patient was advised to report to the department every 3<sup>rd</sup> day for physiotherapy by the surgeon. Patient was encouraged to do mouth opening exercises with ice cream sticks at home. **Patient had a significant increase in mouth opening of 36 mm at 40<sup>th</sup> day follow up. (Figure 2)**



Figure 1: Reduced mouth opening



Figure 2: Follow up

## III. Discussion

OSMF is a chronic, insidious disease that is associated with significant functional morbidity and an increased risk for malignancy. Various factors have been thought as causative agents for OSMF. Some of the factors implicated in the etiology of this disease include areca nut chewing, ingestion of chilies, genetic processes, immunological process and nutritional deficiencies. (2,3)

The present case falls under stage III classification of oral submucous fibrosis in which leukoplakia is

observed, which is termed as sequelae of OSMF according to Pindborg. The classification is divided into three stages based on the progression of clinical features of the disease. The clinical signs and symptoms of the disease include oral ulceration, burning sensation (particularly with spicy foods), paleness of the oral mucosa and occasional leukoplakia. The most characteristic feature is the marked vertical fibrous ridge formation within the cheeks and board-like stiffness of the buccal mucosa. The fibrosis in the soft tissue leads to trismus, difficulty in eating and even dysphagia. <sup>(5)</sup>

Many therapeutic and surgical treatments have been tried for the cure of OSMF with varying degree of results. These treatment modalities use antioxidants, iron supplements, curcumin, steroids, placental extract, fibrinolytic agents and also include surgical elimination of the fibrotic bands either by the scalpel or using a laser, with or without the use of interpositional grafts to maintain the mouth opening. Tongue flap, palatal island flaps, buccal fat pad, nasolabial flap, temporalis fascia flap, split skin grafts, collagen membranes and artificial dermis and human placenta have been preferred in the grafting of mucomuscular defect in surgical management of OSMF. <sup>(6)</sup> Intralesional injections of drugs like dexamethasone, triamcinolone, hyaluronidase and placental extract have shown relief from the symptoms and improvement in the mouth opening in patients with OSMF. Various combinations of drug regimens have been used in the treatment of OSMF and each drug has a different mechanism of action.

Placental extract contains growth factors with anti-inflammatory and antiplatelet activity. It has biogenic stimulator action and is used on the basis of tissue therapy method. It stimulates metabolism, increases the vascularity and promotes regeneration and recovery of the tissue, upon implantation into the body. <sup>(7,8)</sup>

Hyaluronidase causes breakage and dissolution of fibrous bands thus providing relief from the condition. It acts by breaking down hyaluronic acid, the ground substance of connective tissue, thereby decreasing the viscosity of intracellular cement substance. Moreover, the role of hyaluronic acid in collagen formation is also prevented by the use of hyaluronidase. <sup>(2,7)</sup>

Glucocorticoids (hydrocortisone, triamcinolone, betamethasone, and dexamethasone) benefited to be minimal effective relieving of symptoms. They impact anti-inflammatory activity and increasing the apoptosis. Steroids are useful in minimizing symptoms or as adjunct. Antioxidants like vitamin E and lycopene which enhanced the results. <sup>(2,9,10)</sup>

OSMF when detected in early stage is a reversible, hence primary health care centers play an important role in promoting health and awareness among patients with tobacco chewing, smoking habit. Health care providers should be able to identify the alarming symptoms presented by the patients such as burning sensation in the oral cavity and progressive difficulty in mouth opening and take necessary steps at the earliest

Placental extract, hyaluronidase and dexamethasone injection therapy effective for the treatment of OSMF, both in terms of improvement of mouth opening and reduction of burning sensation. Here we had presented a case of OSMF grade III where patient was treated with conservative therapy the combination of intra lesion injections of placental extract, hyaluronidase and dexamethasone with satisfactory result.

**Conflict of interest:** None

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