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Case Study

BREAKING THE STIFFNESS: CLINICAL RECOVERY IN OSMF THROUGH AYURVEDIC TREATMENT

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ABSTRACT

Oral Submucous Fibrosis (OSMF) is a chronic, progressive condition marked by juxta-epithelial inflammation, fibro-elastic changes, epithelial atrophy, trismus, and recurrent glossitis. Widely prevalent in India and Southeast Asia, OSMF was first described in the 1950s and continues to rise due to the common habit of betel nut and gutkha chewing. Arecoline- an alkaloid in areca nut- remains the principal etiological factor. Clinically, patients present with a burning sensation, ulceration, progressive reduction in mouth opening, xerostomia, and characteristic submucosal fibrosis. Studies report a 6.3% prevalence, with gutkha chewing as the most common associated habit. In Ayurveda, OSMF closely resembles *Sarvasara Mukharoga,* predominantly *Vata-Pitta* in nature. Chronic irritation from betel nut, tobacco, lime, or chilies vitiates *Doshas* and damages oral tissues. Management therefore requires both local and systemic interventions. Ayurvedic treatment emphasizes *Pitta-shamaka yogas*, along with *Gandūsha* (oil pulling), *Nasya* (nasal therapy), and *Pratisaraṇa* (local rubbing) to restore mucosal health, reduce fibrosis, and improve mouth opening. **Aim**: To evaluate the effect of proposed Ayurvedic treatment protocol in the patients of OSMF**. Material and Methods:** A 42-year-old male patient visited the ENT outpatient department at the Shalakya Tantra unit of Mansarovar Ayurvedic Medical College Hospital and Research Centre in Bhopal (M.P.). **Result**: Ayurvedic treatment protocol is effective in the management of OSMF.

INTRODUCTION

Shalakya Tantra, one of the most refined and clinically rich branches of Ayurveda, has traditionally encompassed the diagnosis and management of diseases occurring in the *Urdhvajatru* or supraclavicular region. Over centuries, its relevance has remained strongly anchored in both preventive and clinical domains. However, in the modern era, the discipline has gained even greater significance owing to the dramatic rise in lifestyle-related and habit-induced pathologies, especially those affecting the oral cavity. Among these, Oral Submucous Fibrosis (OSMF) has surfaced as a major public health challenge in India and parts of Southeast Asia. The growing prevalence of tobacco abuse, betel-nut chewing, commercially flavoured areca preparations (gutkha) and related substances has drastically increased the disease burden, making OSMF an area of keen interdisciplinary interest.[5]

From the Ayurvedic standpoint, the oral cavity (*Mukha*) is an essential gateway to health, nourishment, speech, and overall well-being. *Acharya Sushruta*- often revered as the father of ancient Indian surgery- has described 65 *Mukhagata Rogas* and skilfully classified them into seven anatomical segments: *Oṣṭha* (lips), *Danta* (teeth), *Dantamula* (gingiva), *Jihva* (tongue), *Talu* (palate), *Kaṇṭha* (throat), and *Sarvasara* (generalized mucosal disorders). This systematic division highlights the intricate understanding Ayurveda holds regarding oral health. OSMF, due to its characteristic pan-mucosal involvement, clinical complexity, and progressive nature, correlates most appropriately with *Sarvasara Mukha Roga*[2].

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First documented in the early 1950s, OSMF was initially described by Schwartz as "atrophia idiopathica (tropica) mucosae oris." Later, in 1953, Joshi coined the term Oral Submucous Fibrosis, based on its dominant histopathological features. As a chronic, insidious, and potentially premalignant condition, OSMF is typified by progressive fibrosis of the oral mucosa, restricted mouth opening, burning sensation, difficulty in eating spicy foods, and compromised speech and dental hygiene.[5]

OSMF has:

- Prevalence: ~2% in high-risk populations
- Malignant transformation risk: around 5%
- Common age group: 20–40 years, a period of high social, academic, and occupational productivity

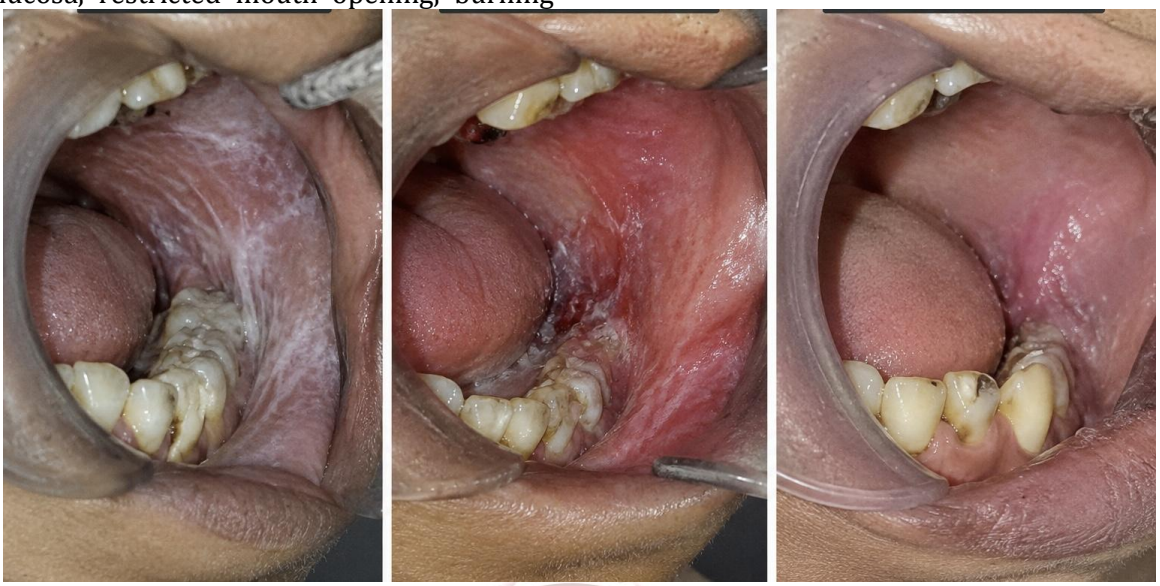


Fig: (a) Before treatment, (b) During treatment, (c) After treatment

The central pathogenic element of OSMF is the upregulated synthesis and deposition of collagen, leading to tissue stiffening, submucosal fibrosis, and functional disability. Modern research highlights multiple contributory factors including:

- Abuse of areca nut and tobacco
- Genetic susceptibility
- Autoimmune tendencies
- Nutritional deficiencies (iron, folate, B-complex, etc.)
- Altered cytokine activity and oxidative stress

The progressive nature of OSMF and its malignant potential make early detection and early therapeutic intervention indispensable.[4]

Ayurveda views OSMF as a disorder involving *Tridoṣha* vitiation, predominantly *Vata* and *kapha* secondary *Pitta* involvement during episodes of burning and ulceration. Classical symptoms such as *Mukhapaka* (oral inflammation), *Soṣha* (dryness), *Shula* (pain), *Saṅkocha* (stiffness), *Daha* (burning), and *Arochaka* (loss of taste) align significantly with the clinical picture of OSMF.[5]

Case Report

A 42-year-old male patient visited the ENT outpatient department at the Shalakya Tantra unit of Mansarovar Ayurvedic Medical College Hospital and Research Centre in Bhopal (M.P.). with complaints of oral burning sensation, especially while eating spicy food, along with progressive reduction in mouth opening for the past 8 months. The patient had a habit of areca nut chewing (2-3 packets/day) for 15 years.

Extraoral Examination

- The mouth opening/inter incisal distance was 33.6 mm as measured by vernier calliper.
- No facial asymmetry or lymphadenopathy noted.

Intraoral Examination

- Bilateral buccal mucosa appeared blanched and leathery.
- Fibrotic changes extended from the commissure to the retromolar trigone on both sides, covering approximately 1.5–2 cm.
- Mucosa exhibited loss of elasticity and a dull, opaque appearance.
- Patient reported burning sensation on palpation of affected areas.

Palpation Findings

- Cheek flexibility reduced to 6 mm on the right side and 7mm on the left.
- Tongue protrusion measured 24mm (mildly restricted).
- Vertical and circular fibrous bands palpable on both buccal mucosae, more prominent in the premolar–molar region.

Investigations

Routine haematological, routine biochemical -RBS, serum lipid profile, serum creatinine, and routine urine examination before treatment were carried to rule out any other disorder.

Assessment Criteria

Symptoms were reviewed and inter incisal distance (IID) was measured with Vernier Calliper by taking the distance between the mesial angles of the upper and lower central incisors.

Signs and symptoms [9]

Burning sensation	Score
No *Mukhadaha* (burning sensation in mouth)	0
On taking spicy food	1
On taking food	2

Colour of Oral mucosa	Score
Pink normal	0
Light pink	1
Pale white	2
Blanched white	3

Ulceration in mouth	Score
Nil	0
Mild	1
Moderate	2
Severe	3

Fibrous bands on palpation	Score
No fibrous bands	0
One or two solitary fibrous bands	1
Bands felt almost on entire surface	2
Adherent fibrous bands producing rigidity of Mucosa	3

Inter Incisal distance in mm	Score
41 or above 0	0
37-40	1
33-36	2
29-32	3
25-28	4
21-24	5
17-20	6
13-16	7

S.No	Symptoms	Before Treatment	After Treatment
1	Inter Incisal distance	33.6	31
2	Fibrous bands on palpation	3	2
3	Ulceration in mouth	3	1
4	Colour of oral mucosa	2	1
5	Burning sensation	2	1
6	Intolerance to spicy food	3	0
7	Pain	2	1

Hardening of soft palate edges noted

Treatment

Patient counselling was done, advised to quit the habit and advised to do *Yashtimadhu Ghrit Gandusha*, *Panchalavana Churna Pratisaran* and along with *Mukhrogahar Vati* as lozenges.

Procedure and Duration

Gandusha [10]

Yashtimadhu Ghrit Gandush supraclavicular massage with lukewarm *Tila Taila* (sesame oil) followed by fomentation was done. Then, lukewarm *Yashtimadhu Ghrit* 10–15ml was advised to fill in the mouth and move it between cheek and throat. It was continued for a period until the patient developed *Kaphapurnasyata* (mouth filled with secretions), *Ghranasrava* and *Akshisrava* (watery discharge from nose and eyes). Then, the patient was allowed to spit out the oil and secretions. Again, mild fomentation and massage were done on the supraclavicular region.

Pratisaran [11]

Panchalavana Churna Pratisaran 3–6gm was mixed with equal quantity of honey to make the paste, which was taken on the index finger and applied all over the oral mucosa and gentle massage was advised

for about 10 min. Then, the patient was allowed to spit out the drug and the secretions.

Mukhrogahar Vati as lozenges was administered in a dose of 250mg Bd orally. After completing the treatment, follow-up was carried out for 1 month.

Panchalavana Churna *[12,15]*

वातात्सर्वसरञ्श्रूर्णैर्लवणैः प्रतिसारयेत्।

तैलं वातहरैः सिद्धं हितं कवलनस्ययोः ॥७२॥

Yashtimadhu Ghrit*[13,15]*

यष्टीमधुबलारास्नादशमूलाम्बुसाधितम ।

मधुरैश्च घृतं सिद्धमूर्ध्वजश्रुगदापहम् ।।

Mukhrogahar Vati **[14]**

रसगन्धौ समौ ताभ्यां द्विगुणञ्च शिलाजतु ।

गोमूत्रेण विमर्झ्याथ सप्तधाऽर्कद्रवेण च ॥११२॥

जातीनिम्बमहाराष्ट्रीरसैः सिध्यति पाकहा ।

कणामधुयुता हन्ति मुखपाकं सुदारुणम् ॥११३॥

अष्टगञ्जा धृता वक्त्रे सद्यो हन्ति वटी गदान् ।

महाराष्ट्र्याश्च कल्केन मुखञ्च प्रतिसारयेत् ॥

धारणात्सेवनाच्चापि वटी हन्ति मुखामयान् ॥११४॥

DISCUSSION

Oral Submucous Fibrosis (OSMF) is a chronic, progressive, premalignant disorder of the oral cavity marked by excessive collagen deposition, mucosal stiffness, burning sensation and restricted mouth opening. The disease primarily affects the quality of life and carries a significant risk of malignant transformation. From an Ayurvedic standpoint, OSMF can be correlated with *Vata-Pittaja Mukharoga*, where aggravated *Vata* is responsible for *Sankocha*, *Kathinya* and fibrosis, while aggravated *Pitta* manifests as *Daha, Raga* and inflammatory changes. The involvement of *Rasa, Rakta* and *Mamsa Dhatu* along with *Srotorodha* forms the fundamental pathology.

Considering the chronicity and fibrotic nature of the disease, a combined local and systemic therapeutic approach was adopted using *Panchalavana Churna Pratisarana, Mukhroghar Vati* and *Yashtimadhu Ghrita Gandusha*. This protocol aims to break the disease process at multiple levels- local fibrosis, inflammation, and tissue degeneration.

Yashtimadhu Ghrita Gandusha

Gandusha is a specialized *Mukha Kriya Kalpa* wherein medicated liquids are retained in the oral cavity, allowing prolonged contact with the mucosa. *Yashtimadhu Ghrita* was selected due to its *Madhura Rasa, Sheeta Virya, Snigdha Guna* and *Rasayana* property, making it highly suitable for *Vata-Pitta Shamaka* therapy.

Yashtimadhu is well known for its *Ropana, Dahashamana and Vranahara* properties, which help in healing mucosal atrophy and relieving burning sensation. *Ghrita* acts as a *Yogavahi,* facilitating deeper penetration of active principles and providing lubrication and nourishment to the mucosa. *Gandusha* improves salivary secretion, enhances local circulation and promotes epithelial regeneration.

From a contemporary viewpoint, *Yashtimadhu* exhibits anti-ulcer, wound-healing, anti-fibrotic and collagen-modulating effects, while *Ghrita* serves as an emollient and protective barrier, restoring mucosal integrity and elasticity.

Panchalavana Churna Pratisarana

Pratisarana is a classical local therapeutic procedure advocated in *Mukharogas* for improving circulation and removing localized *Dosha* accumulation. *Panchalavana Churna*, composed of five varieties of *Lavana*, i.e. *Saindhav Lavana, Samudra Lavana, Vid Lavana, Sauvarchal Lavana, Romak Lavana* which possesses *Ushna, Tikshna, Sukshma and Sara Guna,* making it particularly effective in *Vata-Kapha* dominant conditions.

The mechanical action of *Pratisarana* acts as a micro-massage, which helps in loosening fibrotic bands and improving tissue elasticity. *Ushna Virya* of *Lavana* counteracts *Vata*-induced rigidity, while *Sukshma Guna* enables deeper penetration into the affected tissues. The *Lekhana* and *Bhedana* properties of *Lavana* aid in reducing excessive fibrotic deposition and clearing *Srotorodha.*

From a modern perspective, *Pratisarana* enhances local blood circulation, improves oxygenation of tissues and may assist in remodelling fibrotic tissue, thereby improving mouth opening and reducing stiffness.

Mukhroghar Vati

Mukhroghar Vati is a classical oral formulation indicated in chronic inflammatory and ulcerative conditions of the oral cavity. It mainly consists of drugs, *Shudha Parad, Shudha Gandhak, Shudha Shilajeet, Arka Patra, Jati Patra, Nimba Twak, Pippali* having *Tikta* and *Kashaya Rasa*, *Sheeta Virya*, and *Shothahara, Dahaprashamana* and *Ropana* properties.

Systemic administration of *Mukhroghar Vati* helps in correcting *Rakta Dushti*, which plays a pivotal role in *Mukharoga Samprapti*. *Tikta Rasa* aids in *Ama Pachana* and reduction of chronic inflammation, while *Kashaya Rasa* provides *Stambhana* and tissue stabilization, preventing further progression of fibrosis. By pacifying *Pitta Dosha*, it effectively reduces burning sensation, erythema and mucosal irritation.

In modern terms, the formulation may exert anti-inflammatory, antioxidant and immuno-modulatory effects, thereby reducing oxidative stress and chronic inflammation that contribute to OSMF progression.

Synergistic Effect of the Treatment Protocol

The combined use of *Panchalavana Churna Pratisarana, Mukhroghar Vati* and *Yashtimadhu Ghrita Gandusha* offers a comprehensive and synergistic approach in the management of OSMF. *Panchalavana Churna* primarily addresses local fibrosis and stiffness, *Mukhroghar Vati* acts systemically to reduce inflammation and *Rakta Dushti*, and *Yashtimadhu Ghrita Gandusha* nourishes, heals, and rejuvenates the oral mucosa.

Thus, the treatment protocol effectively interrupts the *Dosha-Dushya-Samprapti*, alleviates clinical symptoms such as burning sensation and restricted mouth opening, and helps in preventing disease progression, making it a rational and holistic Ayurvedic approach for Oral Submucous Fibrosis.

CONCLUSION

The Ayurvedic regimen of *Yashtimadhu Ghrit Gandusha, Panchalavana Pratisaraṇa*, and *Mukhrogahara Vaṭi* proved effective in:

- Reducing burning sensation
- Improving mucosal health
- Reducing fibrosis severity
- Enhancing mouth opening
- Restoring quality of life

This case supports the potential of Ayurvedic therapeutic modalities as a safe, cost-effective, and holistic approach for early-to-moderate OSMF.

Further controlled clinical trials are recommended.

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