

A Literary Review: -Therapeutic Role of Gandusha and Kavala in The Management of Oral Submucous Fibrosis (OSMF)

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I. INTRODUCTION

Oral submucous fibrosis (OSMF) is defines as a chronic insidious disease affecting any part of the oral cavity and sometimes the pharynx, which is occasionally preceded by or associated with vesical formation, it is always associated with a juxta epithelial inflammatory reaction followed by fibroelastic changes of lamina propria with epithelial atrophy, leading to stiffness of oral mucosa and causing trismus and inability to eat. Oral Submucous Fibrosis (OSMF) is a chronic, progressive, potentially malignant disorder of the oral cavity characterized by juxta-epithelial inflammation and fibrosis of the oral mucosa. It leads to burning sensation, stiffness of oral mucosa, reduced mouth opening (trismus), and difficulty in chewing and swallowing. OSMF is a potentially malignant condition caused by chewing of betel quid.

It is first reported in the Indian population and has been described in Indian literature since the time of Sushruta. First Indian cases of OSMF were reported from Bombay and Hyderabad. It has a malignant transformation rate as high as 7.6% In Ayurveda, OSMF can be correlated with “Sarvasara Mukharoga” or conditions involving Vata-Kapha predominance with involvement of Rakta and Mamsa dhatu dushti. Among the local therapeutic procedures described in Charaka Samhita and Sushruta Samhita, Gandusha and Kavala are important modalities for managing oral disorders. In Ayurveda, OSMF is related to Acharya Sushruta’s Sarvasara Mukha Roga (Oral Cavity Diseases). Mouth pain, blanching of the oral mucosa, burning sensation in the mouth, inability

to open the mouth, and other symptoms can be detected in Mukha Roga (diseases of the oral cavity). Some Mukha Roga treatments include Swedana (sudation), Gandusha (oil pulling), Kavala (gargling), and Nasya (nasal medicine), which can be applicable for OSMF. In this conceptual paper, OSMF will be highlighted, evaluated, elaborated, and discussed.

II. AIM AND OBJECTIVES

The objectives of the study are as follows:

1. To evaluate, elaborate, and discuss the OSMF as per modern.
2. To evaluate, elaborate and discussed the correlation of OSMF and its management as per Ayurveda with Kaval and Gandusha

III. MATERIAL AND METHODS

In this article the information based on personal clinical experience as well as clinical studies of OSMF and management that have on publishes journals and modern books The Ayurvedic samhitas and Commentary Pathogenesis of OSMF (Ayurvedic Perspective)

Aetiology of OSMF

Number of Sarvasara Rogas According to Various Acharyas: Sushruta Samhita 3, Ashtanga Hridaya 8, Madhav Nidana 3, Sharangadhara 8, BhavaPrakasha 3, Yoga Ratnakar 3, Acharya Vagbhatta has mentioned Vataja, Pittaja, Kaphaja, Raktaja and Sannipataja Mukharoga along with Arbuda, Urdhva Guda and Pootiasyata. Acharya Sharangadhara has also

followed the pattern of Acharya Vagbhatta. According to Acharya Sushruta Vataja, Pittaja and Kaphaja Sarvasara (Mukharoga) are the three disorders. Acharya Bhavamishra, Acharya Madhava and Yogaratnakara's classification is similar to Acharya Sushruta

Etiology of OSMF

The exact etiology of this condition is unknown. It is believed to be multifactorial. Use of tobacco and areca nut (Areca catechu) has been recognized as one of the most important etiological factors for the causation of OSMF, which contains tannins, arecoline, arecaidine, guvacine, and guvacoline. The previous studies on the pathogenesis of OSMF have suggested that the occurrence may be due to Clonal selection of fibroblasts with a high amount of collagen production during the long-term exposure to areca quid ingredients (Meghji et al., 1987).

- 1) Stimulation of fibroblast proliferation and collagen synthesis by areca nut alkaloids (Harvey et al. 1986).
- 2) By fibrogenic cytokines secreted by activated macrophages and T lymphocytes (Haque et al., 2000)

Clinical Features

This condition is usually seen in the age group of 30–50 years. Males are affected more than female (3.2:1 ratio). First and foremost feature of OSMF is burning sensation and pallor or blanching of oral mucosa. Intraoral sites of involvement include the buccal mucosa, retromolar area, followed by soft palate, palatal fauces, uvula, tongue, and labial mucosa. There may be stiff and small tongue, blanched and leathery floor of the mouth, fibrotic and depigmented gingiva, rubbery soft palate with decreased mobility and blanched and atrophic tonsils, and shrunken bud like uvula. Mouth opening may become progressively reduced. Other symptoms include increased salivation, change of gustatory sensation, hearing loss due to stenosis of the Eustachian tubes, dryness of mouth, nasal tonality to the voice, dysphagia to the solids (If the oesophagus involved), and impaired mouth movements (Eating, whistling, blowing, and sucking) whether OSMF is due to the prevalence of habits such as tobacco/nut chewing among women in the study population. Most studies on OSMF have features only the role of irritant substances acting locally on the oral mucosa. As well as equally important second aspect which needs to be considered is the pre-conditioning

of the oral mucosa by a prolonged, chronic deficiency of iron and/or vitamin B complex. Such conditions are much more commonly seen among Indian females than males, which may explain the higher incidence of OSMF among females. Other fibrotic diseases related to the basal lamina and involving underlying muscles are known, e.g., endomyocardial fibrosis.

The various hypotheses proposed so far suggest that the cause of this disease is multifactorial. In addition to the role of local irritants such as capsaicin, tobacco, betel nuts, hot and spicy foods, and alcohol, the geographic and ethnic distribution of OSMF suggests an underlying systemic predisposition. Among the systemic factors, the main ones incriminated are chronic iron and vitamin B-complex deficiency, anaemia, and a genetic predisposition to the disease. Nidana of mukh roga

Synonyms

Submucous fibrosis of the palate and pillars (Joshi, 1952).

- Diffuse oral submucous fibrosis (Lal 1953).
- Idiopathic scleroderma of mouth (Su, 1954).
- Submucous fibrosis of the palate (Sirsat and Khanolkar, 1957, 1960, 1962).
- Submucous fibrosis of palate and cheek (Desa, 1957).
- Idiopathic palatal fibrosis (Rao, 1962). Juxta epithelial fibrosis (Pindborg 1964)
- Oral submucous fibrosis (Pindborg and Sirsat, 1966).
- Subepithelial fibrosis (Goleria, 1970).
- Idiopathic oral fibrosis (Krishnamoorthy, 1970).

Symptoms: - Correlation Between Ayurveda and modern OSMF

Table no 1

Sr.no	Modern symptoms with ayurvedic correlations	
1	Inability to open the mouth (trismus)	Mukhasankocha
2	Dryness of mouth	Mukhashosha
3	Burning sensation in Mouth	Mukhadaha
4	Decreased/Defective gustatory Sensation	Alparasagyata
5	Intolerance to spicy food	Katurasa Ashishnuta
6	Pain in Mouth	Mukhantargata Vedana

7	Blanching of the oral mucosa	Shweta, Pandu varna (Vaivarnya) of Mukhayatana
8	Recurrent inflammation and ulceration of the mucosa	Mukhapaka
9	Fibrosis, Fibrous bands	Kathina, Khara, shukla Vranavastu
10	hard consistency and stiffness of the oral mucosa	Kathinya, kharta, stambha of the Mukhagata Dhatu

Clinical Features

The symptoms of OSMF are:

1. Burning sensation and blanching of oral mucosa.
2. Moderate limit of mouth opening.
3. Bud shaped or shrunken ovula.
4. Depopulated tongue and ulceration on tongue.
5. Blister or marble like appearance on soft palate and inflammation in oral mucosa occurs.
5. Mobility of tongue and soft palate decreases.
6. Excessive salivation and bad breath.

Treatment:

Medicinal treatment is symptomatic and firstly improving mouth movements. Surgical treatment is indicated in patients with severe trismus and/or biopsy results revealing dysplastic or neoplastic changes.

Decrease or to stop the habit of chewing areca nut play and important role in preventive measure aspect.

To improve current treatment regimens for OSMF, the following strategies have been proposed:

1. Nutritional support
2. Immunomodulatory Drugs
3. Physiotherapy
4. Local Drug Delivery
5. Combined therapy
6. Surgical management.

Chikitsa in Ayurveda: -

1. Nidan Parivarjan - Avoid using factors that cause oral ulcers.
2. Samanya Chikitsa - Mukhdhavana (Mouth wash), Charwana (Chewing), Pratisarana (local application), Kashayapana, Kavalagraha, Kayavirechana
3. Vishesh Chikitsa In Mukhroga various types of kwatha and tail used for kaval and Gandusha

Table no 2

Sr.no	kriyakalpa	References
1	Jatyadi Taila	B.R. 61/147-150
2	Haridradi tail	Yogratnakar
3	Mukhdhavan yog	Yogratnakar
4	Panchpalva kwath	Yogratnakar
5	Triphala Kwatha	Yogratnakar
6	Rasanjana yog	Yogratnakar
7	Sapthachadadi yog	Yogratnakar, Bhavprakash
8	Gomutra	Yogratnakar
9	Godugha	Yogratnakar
10	Madhu	Yogratnakar
11	Goghrita	Yogratnakar
12	Jatipatradi kwath	Yogratnakar
13	Jatipatraamrutadi kwatha	Bhavprakash
14	Panchpallva kwatha	Bhavprakash
15	Triphala kwatha +madhu	Bhavprakash
16	Nilotpladi sharpi	Bhavprakash

Gandusha and Kavala: Concept

1. Gandusha

Gandusha is a procedure in which the mouth is completely filled with medicated liquid and retained without movement for a specific duration.

2. Kavala

Kavala involves holding a smaller quantity of medicated liquid in the mouth and moving it around. Both are described in Ashtanga Hridaya under Dinacharya and Mukharoga Chikitsa.

Types of Gandusha (According to Ayurveda)

1. Snigdha Gandusha– For Vata disorders (using oil, ghee)
2. Shamana Gandusha – For Pitta disorders
3. Shodhana Gandusha– For Kapha disorders
4. Ropana Gandusha – For wound healing.

Kavala and Gandusha

Kavala and Gandusha are differentiated based on the dosage and procedure of using the drug. Kavala is a procedure in which either medicated fluid or paste of the drugs is filled in the mouth in a dosage such that it can be freely moved within the mouth. It is retained for specific duration and then spit out. In Gandusha,

mouth is completely filled with medicated fluid such that it cannot be moved within the mouth and retained until there is Netra and nasasrava (secretions from eyes and nose) and then spit out. Some of the drugs mentioned for this purpose are medicated oil or ghee, milk, honey and luke warm water.

Many other drugs are also mentioned in the contexts of treatment of diseases of oral cavity. Kavala and Gandusha are two main oral cleansing procedures explained in the classics. They are not simple cleansing techniques, but also treatment procedures for oral diseases as well as preventive measures. Daily practice of Gandusha removes the conditions like Mukhavairasya, Durgandha (bad odour), Shopha (swelling), Jadya, and strengthens the teeth. One who practices

Probable mode of action:

The action of Gandusha exerts increased mechanical pressure inside the oral cavity. So, this increased pressure stimulates press receptor (stretch reflex) that are present in the mouth. Once the press receptor is stimulated, they send signals to salivary nuclei in the brain stem (pons and medulla). As a result, Parasympathetic nervous system activity increases and motor fibres in facial (VII) and glossopharyngeal (IX) nerve trigger dramatically increasing the output of saliva.

Chemical constituent present in the drug also stimulate chemoreceptors present in the mouth, which in turn increases salivary secretions. An enzyme called lysozyme present in saliva is bacteriostatic in action. It prevents the growth of pathogenic microorganisms in the oral cavity. Antibody IgA present in saliva also provide protection against microorganisms. Thus, gandusha increases local defence mechanism and promotes oral hygiene. Mucosal layer inferior to the tongue (sublingual) is thin and highly vascular enough to permit the rapid absorption of the lipid soluble drugs into systemic circulation. Some of the drugs irritates the oral mucosa (by their chemical nature) and increases vascular permeability. Thus, an active principle of dravya is absorbed into systemic circulation. Most of the dravas given for gandusha are sukhoshna (warm) so raised temperature causes the increased vascular permeability there by enhancing systemic absorption of drugs.

IV. CONCLUSION

In this article. Ayurveda offers a promising, safe, and holistic approach to the management of Oral Submucous Fibrosis (OSMF). Based on the principles of Sarvasara Mukharoga patients can be evaluated according to Ayurvedic signs and symptoms, and managed using classical treatment protocols described by Acharyas. Therapeutic interventions such as Gandusha, along with appropriate herbal formulations and lifestyle modifications, help restore the normal health of the oral mucosa, provide symptomatic relief, and improve functional outcomes without significant adverse effects. The sustained benefits observed during follow-up further support the effectiveness of Ayurvedic management in chronic cases.

The increasing prevalence of OSMF due to habits such as tobacco chewing, areca nut consumption, and smoking highlights the need for safe, effective, and affordable treatment options. This review attempts to correlate the modern concept of OSMF with the Ayurvedic description of Sarvasara Mukharoga, thereby providing a foundation for integrative understanding and future research. Although existing evidence suggests that Ayurveda may serve as a valuable alternative or complementary treatment modality, well-designed clinical studies with larger sample sizes are required to establish standardized treatment protocols and strengthen the scientific evidence supporting Ayurvedic management of OSMF.

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