RESEARCH PAPER

Successful Management of Oral Leukoplakia with Ayurvedic Intervention: A Case Report

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ABSTRACT

Oral leukoplakia is an oral potentially malignant disorder (OPMD) strongly associated with chronic tobacco use. Standard conventional management typically involves surgical excision or biopsy evaluation due to the risk of malignant transformation. However, patient compliance can be compromised by fear of surgery and treatment exhaustion. This case report highlights the successful management of a 38-year-old male presenting with chronic oral white patches, severe burning sensation, and dysphagia. Following a 10-year history of tobacco chewing and failed prior interventions, the patient was treated exclusively with a tailored Ayurvedic formulation and tobacco cessation counseling. Significant clinical regression of the lesions and complete symptom relief were observed within five months, demonstrating the potential of Ayurvedic therapeutics as a non-invasive alternative for OPMDs.

Keywords: Ayurvedic intervention, Case report, Management**,** Oral leukoplakia

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INTRODUCTION

Oral leukoplakia is clinically defined as a predominantly white plaque of the oral mucosa that cannot be characterized clinically or pathologically as any other disease.[1] It carries a significant risk of transforming into oral squamous cell carcinoma (OSCC).[2] Chronic irritation from tobacco chewing is the primary etiological factor.[3] Conventional protocols recommend biopsy followed by surgical stripping, laser ablation, or close monitoring.[4] When patients seek alternative options due to surgical anxiety or financial/psychological exhaustion, classical Ayurveda[5] offers promising approaches by focusing on *Rasa-Rakta Prasadana* (blood purification), *Vranaropana* (wound healing), *Lekhana* (scraping/debridement of hyperkeratotic tissue), and *Rasayana* (tissue rejuvenation) therapies to reverse mucosal dysplasia.[6,7]

CASE REPORT

Patient Information

- **Age/Gender:** 38-year-old Male

Clinical History & Complaints

The patient presented with a 3-year history of:

1. Extensive, non-scrapable white patches covering the right side of the tongue.
2. Persistent burning sensation in the oral cavity, aggravated by spicy or warm food.
3. Progressive difficulty in swallowing (dysphagia).

Personal History

The patient reported a significant history of chronic tobacco chewing extending over a period of 10 years.

Previous Interventions & Patient Perspective

Prior to consulting our centre, the patient had visited multiple tertiary care hospitals. He was strongly advised to undergo a tissue biopsy followed by surgical resection. This recommended course, combined with a lack of symptomatic relief from prior interventions, left the patient in an exhausted, anxious, and frustrated psychological state, leading him to seek a non-invasive alternative.

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Clinical Examination & Diagnosis

On local examination (dated October 28, 2025), a well-demarcated, thick, fissured white plaque was observed on the right lateral border and dorsum of the tongue. The surrounding mucosa showed signs of chronic inflammation. Tongue movements were slightly restricted due to pain, contributing to the reported dysphagia. Based on the clinical history and presentation, a provisional diagnosis of **Leukoplakia (associated with chronic tobacco abuse)** was established.

TIMELINES

A comprehensive multi-modality Ayurvedic treatment protocol was initiated on **October 28, 2025**, alongside strict tobacco cessation counseling:

1. Oral Hygiene and Topical Applications (*Manjana* and *Lepa*)

- **Yavakshara Powder (250 mg) with Mustard Oil**
  - **Administration:** Applied as a *Manjana* (tooth/gum rubbing) using a soft toothbrush twice daily.
  - **Mode of Action:** *Yavakshara* (alkali prepared from barley) possesses a strong *Kshariya* (alkaline), *Tikshna* (sharp), and *Lekhana* (scraping) property. When massaged with mustard oil (*Katu rasa*, *Ushna virya*), it mechanically and chemically debrides the hyperkeratotic, thickened squamous epithelium of the leukoplakia plaque. It promotes local microcirculation, breaks down hardened tissue matrices, and facilitates the shedding of abnormal cells. [8]
- **Yashtimadhu Powder (2 gm) with Honey (4 gm)**
  - **Administration:** Mixed in a 1:2 ratio and applied over the oral cavity after *Manjana* twice daily.
  - **Mode of Action:** *Yashtimadhu* (*Glycyrrhiza glabra*) is rich in glycyrrhizin, which exhibits potent anti-inflammatory properties by inhibiting prostaglandin synthesis (similar to hydrocortisone but without the side effects). It acts as a *Madhura* (sweet), *Sheeta* (cooling), and *Ropana* (healing) agent. Combined with honey (a natural bio-enhancer and *Yogavahi*), it forms a soothing, mucoadhesive protective layer over the raw, inflamed mucosa, alleviating the burning sensation (*Daha-shamana*) and repairing underlying cellular damage. [9]

2. Gargling Therapy and Retention of oil (*Gandusha / Kavala*)

- **Triphala Powder Decoction (*Kwatha*)**
  - **Administration:** 5 gm *Triphala* (*Amalaki, Bibhitaki, Haritaki)* powder boiled with 1 glass of water, decoction reduced to half glass, and kept lukewarm in the oral cavity for 5 minutes before swallowing, twice daily.
  - **Mode of Action:** *Triphala* provides a high concentration of tannins, gallic acid, and vitamin C. It tightens loose mucosal tissues, suppresses secondary bacterial overgrowth, and acts as a powerful free-radical scavenger to halt oxidative stress induced by tobacco. Swallowing the decoction post-gargling leverages its systemic *Anulomana* (mild laxative/detoxifying) action, purifying *Rasa* and *Rakta* dhatus. [10]
- **Irimedadi Taila (5 ml) with Honey (5 ml)**
  - **Administration:** Combined and held stationary in the mouth (*Gandusha*) for 5 minutes, twice daily (BD).
  - **Mode of Action:** *Irimedadi Taila* is a classical medicated oil specifically indicated for oral diseases (*Mukha Rogas*). Lipophilic compounds in the oil bind to fat-soluble toxins and heavy cell debris within the plaque. Its antimicrobial and astringent ingredients (like *Irimeda* and *Khadira*) stimulate the oral mucosa, enhance tissue regeneration, reduce cellular atypia, and fortify the mucosal barrier against malignant transformation. [11]

3. Systemic Oral Medications

- **Kanchnar Guggulu**
  - **Administration:** 2 tablets, twice daily (BD), administered after meal.
  - **Mode of Action:** This formulation acts as a potent *Granthi-harana* (anti-tumor/anti-cystic) and *Shothahara* (anti-inflammatory) agent. *Kanchnar* (*Bauhinia variegata*) contains flavonoids that regulate abnormal cellular proliferation and glandular swelling. Combined with *Guggulu* (*Commiphora mukul*), which acts as a systemic carrier, it clears obstructions in the microchannels (*Srotoshodhana*) and prevents the progression of benign hyperkeratotic lesions into malignancies. [12]
- **Khadiradi Vati**
  - **Administration:** 2 tablets, to be lozenged/chewed 4 times per day.
  - **Mode of Action:** *Khadira* (*Acacia catechu*) is the premier Ayurvedic drug for skin and mucosal disorders (*Kustha* and *Mukha Roga*). Formulated as a slow-dissolving lozenge, it ensures a prolonged local concentration of catechins and polyphenols in the oral cavity. It acts as a local astringent, decreases capillary permeability, reduces mucosal inflammation, and directly targets the burning sensation and dysphagia.[13]

FOLLOW-UP AND OUTCOME- The patient demonstrated strict compliance with both the intensive medication regimen and immediate tobacco cessation.

- **5-Month Follow-Up:** Upon re-examination after five months of continuous therapy, a remarkable clinical regression of the white patches on the right side of the tongue was observed.

- **Symptomatic Relief:** The severe burning sensation was completely resolved, and the patient reported normal, pain-free swallowing.
- **Psychological Outcome:** The patient exhibited an excellent psychological recovery, transitioning from a state of frustration to being highly satisfied, optimistic, and hopeful about his long-term recovery.

Table 1- Primary outcomes on follow-up treatment period

Sr no.	Clinical Parameter	Baseline (28.10.2025)	During treatment (on end of 2 month)	Post treatment (on end of 5 month)
1	White patches (Right side of tongue)	Dense, extensive plaque	Thin, reduced plaque	Significant clinical regression/ Near-complete clearance
2	Burning sensation	Severe, Continuous	Moderately reduced	Resolved
3	Swallowing condition (Dysphagia)	Difficult/ Painful	Slight difficulty in swallowing, No pain	Normal
4	Patient Psychological Status	Exhausted and frustrated	Happy to see improvement	Happy and hopeful

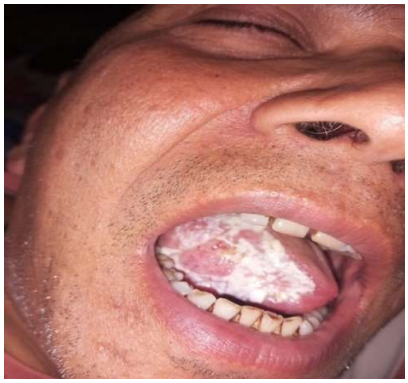

Figure 1- Leukoplakia on right side of tongue on 1st day of visit

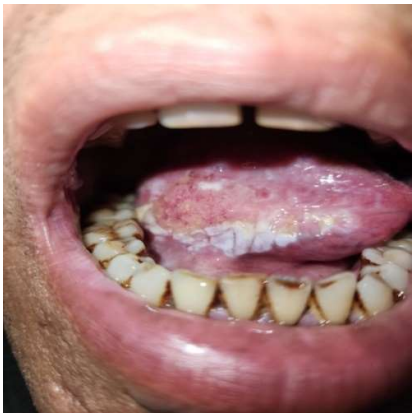

Figure 2- Clinical improvement on 2nd month of treatment

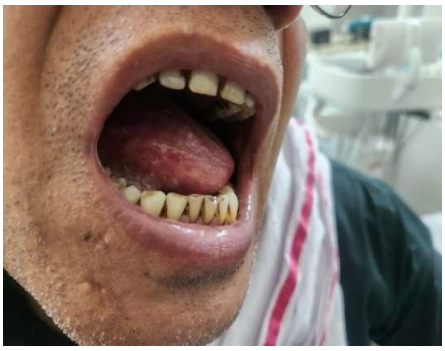

Figure 3- Lesion cured completely on 5th month of treatment

DISCUSSION- The management of OPMDs like oral leukoplakia via Ayurveda revolves around breaking the pathogenesis (*Samprapti Vighatana*) caused by chronic exposure to the *Tikshna* (sharp) and *Ushna* (hot) properties of tobacco, which severely vitiates *Vata*, *Pitta*, and *Rakta* doshas in the oral cavity.

The selected formulation targeted both the physical lesion and mucosal inflammation:

- **Yavakshara** acts as a potent *Lekhana* (scraping) agent, effectively breaking down the thick hyperkeratotic layers of the white plaque when massaged with mustard oil. [14]
- **Yashtimadhu (Glycyrrhiza glabra) and Honey** provide immediate *Ropana* (healing) and *Daha-shamana* (burning mitigation) properties, shielding the raw mucosa and clearing the dysphagia. [15]
- **Triphala Decoction and Irimedadi Taila** act as powerful intra-oral antimicrobials, astringents, and tissue tonics, reducing cellular atypia and restoring mucosal integrity. [16,17]
- **Kanchnar Guggulu** acts systemically as a *Granthi-harana* (anti-tumor/anti-inflammatory) formulation to arrest abnormal cellular growth, [18]
- **Khadiradi Vati** provides continuous local anti-inflammatory and mucosal-stabilizing benefits through prolonged contact as a lozenge. [19]

CONCLUSION- Tobacco cessation eliminated the primary trigger, allowing these synergistic Ayurvedic drugs to effectively regenerate healthy mucosal epithelium. This case demonstrates that a meticulously managed Ayurvedic therapeutic protocol, combined with absolute tobacco cessation, can effectively treat chronic oral leukoplakia, provide complete symptomatic relief, and significantly improve the patient's quality of life without the immediate necessity of invasive surgical interventions. Further clinical trials are warranted to standardize these protocols for wider oncological prevention.

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