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Case Study

BRIDGING MODERN DIAGNOSIS AND AYURVEDA: SUCCESSFUL MANAGEMENT OF GEOGRAPHIC TONGUE W.S.R. TO *JIHVAKANTAKA*

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ABSTRACT

The tongue reflects digestive and systemic health, and Geographic Tongue is a benign inflammatory condition of the dorsal tongue, marked by depapillated erythematous patches with serpiginous borders of white, yellow, or gray coloration, sometimes causing burning and sensitivity to spicy foods. In Ayurveda, geographic tongue is not described as a distinct entity; however, its symptoms closely resemble those classified under *Jihvakantaka*. The objective in presenting the case report is to discuss the clinical presentation, etiological factors, and associated symptoms and management strategies of geographic tongue. **Case Presentation:** A 50-year-old female patient visited to the *Kayachikitsa* OPD of Sir Sunder Lal Hospital, IMS BHU Varanasi, with the chief complaint of burning sensation and sensitivity to hot and spicy food. During intraoral examination, she was diagnosed with geographic tongue. Patient was advised a combination of these drugs *Yashtimadhu* (Glycyrrhiza glabra Linn.) *Churna, Sutasekhar rasa, Kamdudha rasa, Amrita Satva, Rasanjana churna* with honey twice a day and *Arogyavardhani vati 500mg* twice a day, and *Gandoosha with Baboola and Amrooda patra* for 45 days. Clinical progression was evaluated through symptom assessment and comparative photographic analysis. **Results**: At the end of the treatment, the tongue exhibited a clear surface with a healthy pink hue and prominently elevated red papillae. The color and size of the lesions were assessed through comparative photographic documentation taken before and after the treatment. **Conclusion:** This case shows that integrated Ayurvedic internal and local therapies effectively improved symptoms and mucosal healing in geographic tongue, demonstrating a safe, beneficial approach.

INTRODUCTION

The oral cavity plays a vital role in the intake of food, respiration and voice production. It is oval in shape and bounded by the lips (anteriorly), oropharynx (posteriorly), cheeks (laterally), palate (superiorly), and the floor of the mouth (inferiorly). The oropharynx begins at the junction of the hard and soft palate and extends behind the tongue papillae.

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Its bony framework includes the maxilla and mandible.[1] Geographic tongue, an inflammatory condition of the tongue's dorsal mucosa, affects approximately 2–3% of the global population, with variations ranging from 0.2% to 12.8% depending on regional and demographic factors. In India, reported prevalence rates range from 0.84% to as high as 16.4%, with some studies indicating a common incidence around 1%–2.5% in the general population.[2] The condition is seen more frequently in young adults, particularly between 20–29 years of age, and may have a slight female predilection. [3]

It is characterized by areas of smooth, red depapillation (loss of lingual papillae) which migrate over time. The etiology is unknown, but the condition is entirely benign. Other conditions

associated with this pathology are Vitamin B deficiency, a trigger from certain foods such as cheese, congenital anomaly, asthma, rhinitis, systemic diseases such as psoriasis, anaemia, gastrointestinal disturbances, candidiasis, lichen planus, hormonal imbalance and psychological conditions.[4] Unlike in the presented cases which were asymptomatic, only reassurance was considered. In Ayurveda, geographic tongue is not described as a distinct entity; however, its symptoms closely resemble those of *Pitta-Kaphaja Jihvakantaka Vikara*, and thus it may be considered under the broader category of *Jihva Vikara* (tongue disorders). [5]

Patient Information

- Age: 50 years
- Sex: Female
- Occupation: Housewife
- Location: Gazipur, Varanasi, Uttar Pradesh, India
- MRD No.: 6851625
- Chief Complaint: Burning sensation in the mouth, accompanied by sensitivity to hot and spicy foods.
- Duration: 3 months
- Medical History: Hypertension (on Tab. Macsart 40 mg OD)
- Family History: Not significant

Clinical Findings

Symptoms

- Irregular, white patches on the tongue, surrounded by slightly raised borders. These lesions had been changing in shape and location over time.
- Burning sensation aggravated by hot/spicy food.
- Anorexia (*Aruchi*), indigestion, and stress (due to family issues).

General Examination

- BP: 118/74 mmHg
- Pulse: 70 bpm, regular rhythm, normal volume
- Respiratory Rate: 18/min
- Weight: 62 kg
- Height: 5 feet

Systemic Examination

- CVS: S1, S2 heard normal, no murmurs.
- CNS: Patient conscious, well oriented to person, place and time.
- R/S: Trachea centrally placed, lung fields clear.
- Abdomen: Soft, non-tender, no organomegaly

Ayurvedic Assessment

- *Nadi: Pitta-Pradhana Vata*
- *Mala: Baddha*
- *Mutra: Samanya,*
- *Pravaha – Sulabhena pravartate*
- *Varṇa – Pītabha*
  Gandha – Samanya
- *Jihva: Lipta, Shweta Raktata*
- *Shabda: Aspashta* due to *Mukha paka*
- *Drik: Prakruta*
- *Sparsha: Samasheetoshna*
- *Akriti: Samanya*
- *Agni: Manda*

Diagnostic Assessment

Clinical diagnosis based on:

- Visual tongue inspection (depapillated patches with serpiginous borders)
- History of burning sensation and dietary triggers
- Migratory nature of lesions

Ayurvedic diagnosis based on classical signs of *Jihvakantaka* (tongue disorders due to *Pitta-Kapha* imbalance)

Therapeutic Intervention

- The treatment was carried for one and half month. Treatment is described in table no. 1. During this period, she was advised for *Laghu Supachya Ahar*. Counselling was also provided for stress management. Avoid of *Achara, papada*, fast food, *Dadhi, Chutneys, Kshara*, and *Divaswapna* etc.

Table 1: Medicines Prescribed)

Medicine	**Dose**	**Period**	***Anupana***
Composition of *(Yashtimadhu Churna* 6gm, *Sutasekhar rasa* 375mg, *Kamdudha rasa* 500mg, *Amrita Satva* 500mg, *Rasanjana churna* 3gm)	2 *Matra*	45 days	*Madhu* after meal
Arogyavardhani vati 500mg	Twice a day	45 days	With *Jala* after meal
Gandoosha (*Baboola patra* and *Amrooda patra Kwatha*)	Twice a day	45 days	

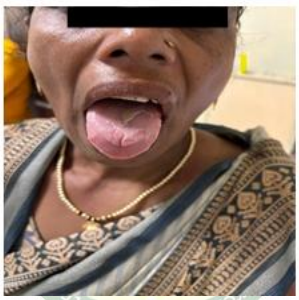
Follow-up and Outcomes: After the intervention (Table 2; Figures 1–3), all symptoms including hypogeusia, burning sensation, xerostomia, erythema, depapillation, *Agni*, and *Aruchi*-showed a progressive reduction, with marked improvement by the 45th day, indicating the therapy's effective role in restoring normal oral and digestive function.

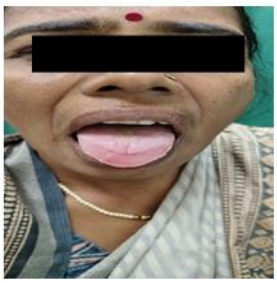
Table 2: Follow-up and Outcomes [6-8]

Sign & Symptoms	BT (3/9/2024)	AT		
		15 days (18/9/2024)	30th days (3/10/2024)	45th days (18/10/2024)
Hypogeusia (absent of taste)	++ (Moderate)	+++	+	(Symptoms resolved)
Burning Sensation	+++ (Severe)	++	+	(Symptoms resolved)
Pain in mouth	++ (Moderate)	+	-	- (Symptoms resolved)
Xerostomia (dryness of mouth)	+	+	+	-
Erythematous	++ (Moderate	+	-	-
Depapillation of lingual papillae	++++ (Severe)	+++	+	All papillae regenerated except on apex of tongue
Agni	*Manda*	*Samyaka*	*Samyaka*	*Samyaka*
Aruchi	+	-	-	-

+ Mild, ++ Moderate, +++ Severe, ++++ Very severe, - Absent/Resolved


Before Treatment


During the Treatment


After Treatment

DISCUSSION

The present case of geographic tongue exhibited characteristic symptoms, including white patches on the dorsum and lateral borders of the tongue with depapillation. In Ayurveda, such presentation aligns with *Kaphaja Jihvakantaka*, characterized by heavy, thick growth on the tongue. Additionally, the burning sensation experienced by the patient corresponds to *Pittaja Jihvakantaka*. Based on these clinical features, the condition may be considered a manifestation of combined *Pitta-Kapha dosha* imbalance.

The combined Ayurvedic regimen works synergistically to balance *Pitta–Kapha*, enhance *Agni*, and facilitate effective healing of the oral mucosa. *Glycyrrhiza glabra* (*Yashtimadhu*), a *Sheeta Virya* herb, was chosen for its ability to pacify *Pitta*, *Vata*, and *Rakta Rogas*. Its active constituents such as glycyrrhizin, glycyrrhetinic acid, and flavonoids contribute to antacid, anti-inflammatory, analgesic, antioxidant, and anti-stress effects, mucoprotective effects which are instrumental in treating *Dourbalya*, *Aruchi*, and *Daha*-symptoms consistent with the patient's condition. The *Sheeta Virya*, *Madhura Vipaka*, and *Madhura Rasa* further support its *Pittahara* property, making it suitable for this presentation. [9]

Formulations like *Sutshekhar Rasa* and *Kamdudha Rasa* were employed synergistically to restore digestive fire (*Agni*) and pacify *Pitta*. These preparations reduce acidity, inflammation, and protect the gastric mucosa, thus offering effective relief in conditions like *Amlapitta*, which shares pathophysiological similarities with the burning sensation of the tongue. [10,11]

Guduchi, with its *Rasayana* properties, provided systemic rejuvenation, improved immunity, and reduced oxidative stress. Its hepatoprotective and anti-ulcer actions likely contributed to overall metabolic balance, promoting oral tissue healing. [12]

Rasanjana, a *Rasakriya* prepared from *Daruharidra* (*Berberis aristata*), plays a significant

therapeutic role in oral infections due to its multifaceted Ayurvedic actions. Containing the active compound berberine, *Rasanjana* exhibits antimicrobial (*Krimighna*), anti-inflammatory (*Shothahara*), wound-healing (*Vrana-shodhana, Ropana*), analgesic (*Vedana-sthapana*), and scraping (*Lekhaniya*) actions, while its *Tikta, Katu* taste and *Ushna Virya* help pacify *Pitta-Kapha dosha*, modern studies attribute these effects to berberine's antibacterial, anti-inflammatory, antioxidant, and mucosal healing properties that support oral health and lesion recovery. [13,14]

Arogyavardhini Vati exerts its action through *Deepana* (stimulating *Agni*), *Pachana* (digesting Ama), *Srotoshodhana* (cleansing bodily channels), and *Bhedana* (mild purgation). Additionally, its *Lekhana Karma* helps reduce excessive *Kapha* and *Meda,* aiding in the removal of pathological coatings or deposits on the tongue. These combined actions help balance *Pitta-Kapha doshas* and support the management of *Jihwa Vikara* such as Geographic Tongue. [15]

For local management, *Acacia nilotica (Baboola)* bark decoction was used as a *Gandoosha*, exploiting its antimicrobial and astringent effects to reduce bacterial load, soothe inflammation, and promote healing in oral tissues[16]. Similarly, *Psidium guajava* (Guava) leaf decoction was employed for its antimicrobial, anti-inflammatory, and astringent properties, effectively managing plaque, gingivitis, bleeding gums, and oral pathogens, thus providing a safe, natural alternative to chemical mouthwashes.[17]

The post-treatment shows significant clinical improvement-disappearance of migratory lesions, normalization of tongue surface, and resolution of coating and inflammation. This integrative Ayurvedic approach effectively balances *Doshas*, enhances immunity, and provides symptomatic relief, demonstrating its potential in the management of geographic tongue.

CONCLUSION

The combined Ayurvedic approach using *Glycyrrhiza glabra*, *Sutshekhar Rasa*, *Guduchi*, *Berberis aristata*, and supportive formulations effectively addresses the *Pitta-Kapha* imbalance in geographic tongue. Their anti-inflammatory, antimicrobial, antioxidant, and digestive properties help reduce symptoms like burning and white patches, promoting oral and systemic healing. This integrative treatment offers a safe and holistic option for managing geographic tongue.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/ their consent for his/her/their images and other clinical information to be reported in the journal. The patient understand that his/her name and initials will not be published and due efforts will be made to conceal his identity.

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