

Management of Geographic Tongue with Zinc and Vitamin B Complex Supplementation: A Case Report

Sarkar A^{1*}, Kona FM², Mostafi AQ³, Azam MS⁴, Choudhury MNK⁵

AFFILIATION:

- Dr. Arup Sarkar**
Lecturer and Dental Surgeon
Dept. of Periodontology & Oral Pathology,
Update Dental College and Hospital, Dhaka, Bangladesh
- Dr. Fatima Mazid Kona**
Lecturer and Dental Surgeon,
Dept. of Periodontology & Oral Pathology,
Update Dental College and Hospital, Dhaka, Bangladesh
- Dr. Alaul Qutub Mostafi**
Lecturer and Dental Surgeon,
Dept. of Periodontology & Oral Pathology,
Update Dental College and Hospital, Dhaka, Bangladesh
- Md. Saiful Azam**
Assistant Professor
Oral & Maxillofacial Surgery
Bangabandhu Sheikh Mujib Medical University, Bangladesh
- Dr. Md. Nahid Khurram Choudhury**
Professor (c.c)
Islami Bank Medical College Dental Unit, Rajshahi, Bangladesh

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E-mail: updcj@hotmail.com



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* Corresponding Author

Dr. Arup Sarkar

Lecturer and Dental Surgeon,
Dept. of Periodontology & Oral Pathology,
Update Dental College and Hospital, Dhaka, Bangladesh
Email: arup.sarkarddc51@gmail.com
Cell: +880 1558-311719

ABSTRACT:

Background: Geographic tongue is a benign inflammatory condition characterized by erythematous patches on the tongue surface. While often self-limiting, it can cause discomfort and concern for patients. Nutritional deficiencies have been implicated in its etiology, but effective treatments remain limited. **Case Presentation:** A 23-year-old male from Rajshahi, Bangladesh presented to Update Dental College with asymptomatic erythematous patches on his tongue, consistent with geographic tongue. The patient had no significant medical history or known nutritional deficiencies. **Methods:** Based on potential associations with zinc and B vitamin deficiencies, the patient was prescribed daily zinc sulfate and a vitamin B complex supplement for 15 days. **Results:** At 15 days follow-up, clinical examination revealed near-complete resolution of the erythematous patches. The patient reported no adverse effects from the supplementation and expressed satisfaction with the outcome. **Conclusion:** This case demonstrates rapid improvement of geographic tongue with zinc and vitamin B complex supplementation. While further research is needed, this approach may offer a promising treatment option for some patients with geographic tongue, potentially by addressing underlying nutritional deficiencies.

KEY WORDS: Geographical tongue, Zinc supplement, Vitamin B complex.

INTRODUCTION

Over the last several years, there has been a significant trend in Benign migratory glossitis, another name for geographic tongue, is a common inflammatory disorder that affects the tongue's lateral and dorsal surfaces¹. The tongue has a map-like look due to its erythematous patches encircled by a white or yellow serpiginous border². Although the exact cause is unknown, correlations with dietary deficits—specifically, those involving zinc and B vitamins have been documented^{3,4}. Even while they are frequently asymptomatic, some people do occasionally have burning or sensitivity, particularly when eating spicy or acidic meals⁵. Although the illness usually resolves on its own, recurrences are frequent.¹ Numerous therapies have been tried, such as topical corticosteroids and anesthetics, but there isn't much proof of their effectiveness⁶. In this case study, zinc and vitamin B complex treatment led to a patient's quick recovery from geographic tongue.

CASE PRESENTATION

A 23-year-old male patient visited Periodontology dept. of Update Dental College in Dhaka, Bangladesh, with concerns about the lesion of his tongue. He had seen uneven spots on his dorsal surface tongue looks geographical presentation for the last two weeks. The lesion disappears and appear to another site. The patient denied experiencing any pain or burning feelings, but did show worry about the strange look.

The patient had an unremarkable medical history. He denied any allergies, was not taking any drugs, and had no prior history of skin issues or autoimmune illnesses. His diet was diversified, although it did not contain many zinc-rich items. He didn't smoke or drink alcohol. The dorsal and lateral regions of the tongue were covered in many patches with slightly elevated white borders, as is typical with geographic tongue (Figure 1). The lesions were symptomless, with no pain

MANAGEMENT: The patient was given the following regimen: 1. Zinc sulfate supplement 2. Vitamin B complex supplement with composition of Thiamine Hydrochloride BP 5 mg Riboflavin-5-

Phosphate Sodium BP 2.74 mg equivalent to Riboflavin 2 mg Pyridoxine Hydrochloride BP 2 mg Nicotinamide BP 20 mg and Zinc Sulfate Monohydrate USP 27.45 mg equivalent to elemental Zinc 10 mg, per tablet single dose for 15 days and assure of no malignancy.

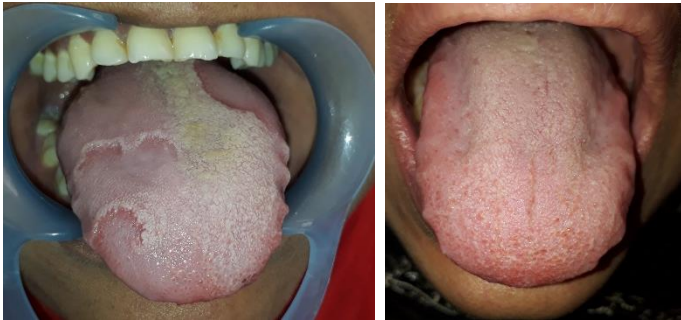


Figure 1: Clinical presentation of geographical presentation of patches on the dorsum of the tongue with white border and figure 2: showing resolution of the lesion after 15 days follow up with zinc and vitamin B Complex.

The patient was told to take the supplements with food every day and to return in two weeks for a checkup. At the 15th day follow-up session, the patient indicated that his tongue's look had much improved. Clinical examination indicated that the erythematous spots had almost completely resolved (Figure 2).

The patient was pleased with the results and noted no bad effects from the supplements. Given the immediate and significant improvement, the patient was recommended to continue supplementing for another One week before gradually tapering off. He was also advised to incorporate more zinc-rich foods into his diet, such as Legumes: Lentils (dal), chickpeas, and kidney beans, Pumpkin seeds, sesame seeds, and almonds, Milk, yogurt, and cheese etc.

DISCUSSION

This case report highlights the possible benefits of zinc and vitamin B complex supplementation in the treatment of geographic tongue. The fast remission of symptoms within two weeks is particularly significant, as geographic tongue sometimes lingers for months¹. Zinc is essential for maintaining epithelial tissue integrity and may contribute to the development of geographic tongue⁷. Zinc deficiency can change the oral epithelium and hinder wound healing⁷. Several investigations have found reduced blood and salivary zinc levels in individuals with geographic tongue compared to healthy controls^{8,9}. B vitamins, notably riboflavin, niacin, pyridoxine, and cobalamin, are critical for maintaining healthy oral mucosa.

Deficiencies in these vitamins have been associated with various oral manifestations, including glossitis, megaloblastic anemia and mucosal inflammation^{10,11}. While the exact mechanism by which zinc and B vitamin supplementation led to rapid improvement in this case is unclear, several possibilities exist:¹²

1. Correction of underlying nutritional deficiencies
2. Anti-inflammatory effects of zinc
3. Enhanced epithelial regeneration and wound healing
4. Modulation of local immune responses

The response to supplementation in this case suggests that nutritional factors may play a more significant role in the pathogenesis and management of geographic tongue than previously recognized. However, it is important to note that this is a single case,

and larger controlled studies are needed to establish the efficacy of this approach.

CONCLUSION

This case report highlights the potential benefits of zinc and vitamin B complex supplementation in the management of geographic tongue. The rapid resolution of symptoms suggests that addressing underlying nutritional deficiencies may be an effective strategy for some patients with this condition. Further research is warranted to elucidate the role of nutritional interventions in geographic tongue and to establish evidence-based guidelines for their use.

CONFLICT OF INTEREST: The authors declare no conflict of interest

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