

## Case Report

### Asymptomatic Reversible Lesion on Tongue – Case Series in Pediatric Patients

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#### Abstract

Tongue is a most sensitive part of the oral cavity. It is responsible for many functions in the oral cavity like swallowing, speech, mastication, speaking and breathing. Geographic tongue is one of the commonly occurring problems that are encountered in the clinics which has a controversial etiology. It usually presents as a map like red and white lesions but its occurrence is rare in children. It is an asymptomatic condition so discovered on routine clinical examination. It can present on any surface of the tongue but most often on the dorsal surface. It has a characteristic migratory pattern that changes in position and will resolve completely by its own, and if associated with any symptom treatment should be indicated.

Keywords: Migratory, Geographic, Asymptomatic, Tongue

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#### Introduction:

Geographic tongue is an asymptomatic inflammatory condition of the dorsum of tongue sometimes extending towards the lateral borders. It is also known as erythema migrans, annulus migrans and wandering rash. Rayer in 1831, first reported the term wandering rash for geographic tongue.<sup>1</sup> It can occur either solitary/multiple, and intermittent/ continuous. There is simultaneous epithelial desquamation and proliferation at different sites and because of this nature termed as migratory glossitis.<sup>2</sup> Also characterized by periods of remission and exacerbation of varying duration.

During remission, the condition resolves without residual scar formation. It appears as irregular erythematous circinate patches surrounded by white hyperkeratotic border. It is usually a asymptomatic condition but occasionally associated with burning sensation and sensitivity to hot and spicy food.<sup>3,4</sup> Here, the authors present three cases of geographic tongue in young children.

#### Case Report

**Case 1:** A 12 years old female patient (Figure 1) with chief complaint of irregular arrangement of teeth since their eruption, reported to the department of oral medicine

and radiology. On clinical examination, maxillary anteriors were proclined and a localised reddish lesion was present on right side of dorsum surface of tongue with epithelium loss and irregular borders (Figure 2).



**Figure 1:** Extra-oral view of patient



**Figure 2:** Multiple atrophic patches with raised white circinate borders at periphery.

According to the patient's mother, it was present from last one month but not associated with any discomfort. On routine investigation, hemoglobin was found to be 8.5 gm% and total RBC was 2.8 ml/mm<sup>3</sup>. Diagnosis of Angle's class 1 malocclusion and geographic tongue was made. Patient was referred for orthodontic treatment and reassurance for the tongue lesion. Patient was recalled for regular follow up.

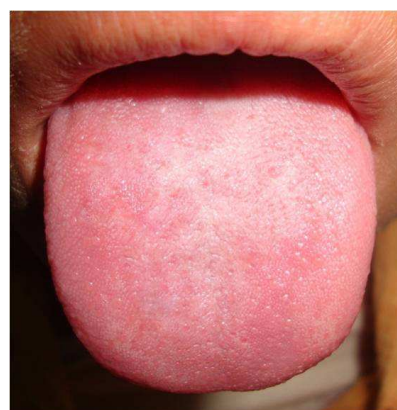
**Case 2:** A 5 years old boy (Figure 3) came with a complaint of dirty teeth since 2-3 months.



**Figure 3:** Profile picture of patient



**Figure 4:** Presentation of geographic tongue



**Figure 5:** Complete resolution of lesion after 15 days

Intraoral examination showed good oral hygiene and there was absence of filiform papillae with erythematous irregular lesion present from tip of tongue to right lateral border of tongue surrounded by elevated thick white border (Figure 4) which was asymptomatic. Patient was recalled after 15 days, after counselling he was advised to maintain a good oral hygiene resulting in complete healing. (Figure 5)

**Case 3:** A male patient of 6 years old (Figure 6) presented with decayed teeth in upper front teeth region since 3-4 years and also gave history of consumption of sugary milk at night.



**Figure 6:** Extra-oral view of patient



**Figure 7:** Clinical appearance of a geographic tongue with denuded areas surrounded by hyperkeratotic borders.

On examination a lesion on dorsum surface of tongue having denuded areas with atrophy of papillae (Figure 7) are appreciable. Surrounding area was normal

without any symptoms. Diagnosis of nursing bottle caries and geographic tongue was made.

All the above presented cases did not have any relevant systemic and/or family history and their general physical examination also was not contributory. There were no associated skin lesions in these patients. There was no positive history of any drug intake. The patients and their parents were instructed for proper oral hygiene maintenance. Also reassured for the tongue lesion which is self healing and observed for any reoccurrence.

**Discussion:** Geographic tongue is defined as a benign inflammatory condition. It is characterized as erythematous lesion with atrophy of filiform papillae and thinning of the epithelium, the white border around this lesion is suggestive of regenerating filiform papillae. These patches are of various sizes and shapes. Some consider the condition to be a congenital anomaly and others believe it to represent an acute inflammatory reaction. In India its prevalence is 0.89% and overall prevalence is 1 to 2.5% in general population. In school children its prevalence was observed to be 1 % by Redman. High prevalence in children was found in Japan (8%), Israel (14%). Females are more commonly affected. Etiology of geographic tongue is not clear but in children it can be associated with environmental allergies.<sup>1</sup> Other conditions associated with this pathology are Vitamin B deficiency, a trigger from certain foods such as cheese, congenital anomaly, asthma, rhinitis, systemic diseases like psoriasis, anemia, gastrointestinal disturbances, candidiasis, lichen planus, hormonal imbalance, psychological conditions, etc.<sup>1,2</sup> It is capable of producing symptoms in children that are significant enough to require management. Unlike in the presented cases which were asymptomatic, only reassurance was

considered. Wysocki et al investigated the prevalence in patients with juvenile diabetes as it is known that HLA-B15 occurs more commonly in insulin dependent diabetic patients. They found a prevalence of 8% in type 1 type of diabetes patients. He concluded that geographic tongue may be a clinical marker for insulin dependent diabetes mellitus.<sup>2</sup> Emotional stress, psychological disturbances and spicy food are also considered as an etiological factor for geographic tongue.<sup>3</sup> If history and clinical examination is not helpful in diagnosis blood investigation should be obtained to differentiate neutropenia.<sup>1</sup> It also occurs in association with fissured tongue. Histologically, there is loss of filiform papillae leaving a flattened mucosal surface with irregular rete pegs.<sup>2,3</sup> There is epithelial degeneration and the absence of stratum corneum. Beneath the epithelium there is infiltration of inflammatory cells and migration of polymorphonuclear leukocytes and lymphocytes. Munro abscesses may be present. The differential diagnosis in children should include atrophic candidiasis, drug-induced reactions, local trauma and a severe neutropenia. Psoriasis, Reiter's syndrome, atrophic lichen planus, malignancy, and systemic lupus erythematosus, but are rare in children. Redman et al found a strong tendency for familial occurrence of geographic tongue. Although clinical diagnosis for geographic tongue is typical and hence confirmatory, however to rule out any systemic causes, blood investigations are advised for every patient and smear can be taken to rule out superimposed fungal infection. As it is self limiting only reassurance is required, if symptomatic avoidance of known irritants, bland diet, plenty of fluids and palliative care like anesthetic rinses may be advised. If there is recurrence, antihistamines

(Benadryl) rinse 12.5-2.5 mg is required for few minutes, three to four times a day for one week. If it is not effective steroid (Betamethaone) rinse 500 microgram twice daily for one to two weeks is given.<sup>1</sup> Masaya et al introduced topical tacrolimus ointment for two weeks and there was improvement without any side effects.<sup>5</sup>

**Conclusion:** As the etiology of geographic tongue is unknown so far and literature reports varied predisposing factors. Careful examination and investigation are advisable to rule out probable etiological factor. Reassurance and follow up of these young patients is mandatory, so that unnecessary treatment protocol is not undertaken. Also long term follow up studies should be undertaken to know the outcome of different treatment modalities in future.

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