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## Case Report

# Paediatric geographic tongue (5 year old boy): A case report with review of literature

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### ABSTRACT

Geographic tongue often develops throughout childhood and affects between 1 and 2.5 percent of people worldwide. It is a benign, inflammatory condition that most frequently affects the tongue's dorsum and may spread to its lateral edges. The loss of filiform papillae and thinning of the epithelium are represented by the erythematous patches. It can be asymptomatic or patient may complains of pain and burning sensation. We report a case of 5 year old boy with early shedding of primary teeth, geographic tongue which was asymptomatic, had itchy skin lesions in the past and still gets the on and off episode of skin lesion ; with review of literature.

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## 1. Introduction

One percent to two percent of the world's population are affected with geographic tongue, also known as benign migratory glossitis, which is a chronic, immune-mediated, inflammatory illness.<sup>1-3</sup> Clinically, it manifests as erythematous patches with a white margin that move across the tongue, and histologically, it forms neutrophilic microabscesses and epithelial edoema.<sup>2,4</sup> It is a benign, inflammatory condition that most frequently affects the tongue's dorsum and may spread to its lateral edges. Multifocal, circinate, irregular erythematous patches surrounded by a slightly elevated keratotic band or line make up the distinctive appearance. The loss of filiform papillae and thinning of the epithelium are represented by the erythematous patches. Regenerating filiform papillae and a combination of keratin and neutrophils make up the white border. Although the surface is not ulcerated, the loss of the surface keratin and papillae gives the impression that

it is. They range in size from a few millimetres to several centimetres, and they are well defined elliptical lesions. The label "migratory" refers to the fact that the location and pattern change over time. The simultaneous epithelial desquamation at one place and growth at another site are the causes of this apparent movement.<sup>5</sup>

## 2. Case Report

Parents with 5 year old boy reported with the chief complaint of missing teeth in the upper and lower front tooth region of the mouth (Figure 1). During Intraoral examination, both right and left maxillary and mandibular deciduous incisors and canines, and both right and left mandibular deciduous molars were missing. It was found that, there was early shedding of the primary teeth. The Orthopantomogram, showed the presence of tooth buds of permanent teeth (Figure 2). On further oral examination, it was diagnosed that the patient has geographic tongue, and the patient and his parents are not aware of it (Figure 3). The tongue had atrophic or depapillated patches on the

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**Fig. 1:** Showing missing teeth in the upper and lower front tooth region of the mouth



**Fig. 2:** Orthopantomogram showing tooth buds of permanent teeth.



**Fig. 3:** Geographic tongue



**Fig. 4:** Post inflammatory pigmentation



**Fig. 5:** Post inflammatory pigmentation

dorsum or lateral border of the tongue. These patches were smooth and reddish-pink. Patient had no pain or discomfort. The parents were asked about any past medical history and were found that he had itchy skin lesions two years ago and took combination of steroid and antifungal topical medications for it and got temporary relief after that. He still sometimes gets on and off episodes of skin lesions. The post inflammatory pigmentation is present on the skin (Figures 4 and 5). Written informed consent was obtained from parents of the patient for publication of this case report and the pictures.

**Table 1:** Google literature revealed the following cases of paediatric geographic tongue in the table below from last 6 years.

A uthor	Year	Age of the patient / gender
Nupur Shah, Pratik Kariya, Bhavna Dave, Princy Thomas <sup>6</sup>	2016	4 Year old /female
Nandini, Doddabasavaiah Basavapur, S. Bhavana, B. S. Deepak and Ramakrishna Ashwini <sup>7</sup>	2016	3 Year old /male
Dayal, Surabhi; Sahu, Priyadarshini; Jain, Vijay Kumar <sup>8</sup>	2016	2 Siblings : 14 Month old/male; 2 Year old /male
Alzahrani, Nouf A., and Mohammed I. AlJasser. <sup>9</sup>	2018	3 Year old /male
Thakur, S., Gupta, M., Tegta, G.R., & Verma, K.P. <sup>10</sup>	2018	8 Months old/ monozygotic twins (females)
Valen D D, Prasanna K R, Raghavendra K, Gowri P B, Roopashri R K, et al <sup>11</sup>	2018	6 Year old/male
Zini-Carbone, Claudia Norma Haydee, Medina, María de las Mercedes, & González, María Mercedes <sup>12</sup>	2019	6 Year old/ male 7 Yearold/male
Khanduri N, Rohatgi S, Kurup D, Mitra M. <sup>13</sup>	2019	2 Year old/male
Khadka A, Aryal E <sup>14</sup>	2020	2 Cases : 15 Month old/female 2 Years old/female
Iqbal, . *Md A., Mohol, J. and Momin, K.M.A., <sup>15</sup>	2020	2 Years and 9 months/ female
Akhilesh Sharma., et al <sup>16</sup>	2021	4 Year old /male

Patient's eyes seemed to be bulging out. So, blood tests were recommended to determine the thyroid stimulating hormone levels, and to report back. However, the patient never came back.

The Patient was asymptomatic and geographic tongue is self limiting, so patient was advised to maintain oral hygiene and take plenty of fluids. Also, the patient's parents were told about the presence of permanent tooth buds.

### 3. Discussion

Geographic tongue often develops throughout childhood and affects between 1 and 2.5 percent of people worldwide. The paediatric population has a prevalence that ranges from 0.37 percent to 14.3 percent. The age range of 20 to 29 years old has the highest frequency, at roughly 39.4%. Geographic tongue has a slightly greater predilection for women than men.<sup>17–19</sup> Geographic tongue's aetiology is unclear, but in youngsters, environmental allergens may play a role. Other symptoms linked to this pathology include vitamin B deficiency, a food trigger like cheese, congenital abnormality, asthma, rhinitis, and systemic illnesses like psoriasis, anaemia, digestive problems, candidiasis, lichen planus, hormone imbalance, and psychological issues.

It has the potential to cause children to experience symptoms that are severe enough to call for treatment.<sup>20,21</sup> In a prospective research, Zargari<sup>22</sup> investigated the frequency of lesions on the tongue in psoriasis patients. 47 patients (15%) had tongue lesions, 25 (8%) had fissured tongue, and 17 (6%) had geographic tongue, according to the author's observations (of which 7 percent of patients had early psoriasis and 1 percent with late psoriasis). The author came to the conclusion that geographic tongue prevalence in early psoriasis was a sign of disease severity.<sup>23</sup> The majority of the geographic tongue lesions displayed a typical look

with many tongue sites affected and a central atrophic area surrounded by a raised white circinate line (69.1 percent) (62.8 percent). The lateral edges and tip of the tongue were the most frequent sites. 75.5 percent of the participants were asymptomatic.<sup>24</sup> The prevalence of benign migrating glossitis is believed to be 2% in the general population<sup>25,26</sup> and to increase to 9%<sup>25,27</sup> in psoriasis patients.

Although a biopsy may be necessary, the diagnosis is typically made clinically. Candida, Reiter's syndrome, lichen planus, leukoplakia, systemic lupus erythematosus, and herpes simplex virus are among the possible diagnosis.<sup>25,28</sup> The geographic tongue condition is still without a permanent remedy. Among the choices, corticosteroids are thought to be the most effective. Since it contains salt and has properties akin to those of other corticosteroids, triamcinolone acetonide is recommended over other corticosteroids. The immune system, including cellular immunological processes and the activity of macrophages, can be stimulated by retinoic acid. Triamcinolone alone did not appear to be any more effective than triamcinolone in treating the symptoms of geographic tongue.<sup>29–32</sup>

### 4. Conclusion

Geographic tongue is a benign condition. Regular and long haul follow up of paediatric patients with geographic tongue is compulsory so as to know the effects of various treatment modalities.

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## 6. Conflicts of Interest

None to declare.

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