Case Report

Geographic Tongue: A Case Report with Review of Literature

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Abstract

Tongue is a most delicate part of the oral cavity. It is in charge of numerous functions like swallowing, speech, mastication, speaking and breathing. Geographic tongue (Benign migratory glossitis, erythema migrans) is an asymptomatic inflammatory disorder of tongue with controversial etiology. This disease is characterized by erythematous areas showing raised greyish or white circulated lines or bands with irregular pattern on the dorsal surface of the tongue and depapillation. The objective in presenting the case report and literature review is to discuss the clinical presentation, etiological factors, associated syndrome and management strategies of geographic tongue.

Keywords: Asymptomatic, children, geographic tongue

Introduction

Soft tissue oral and perioral lesion in the paediatric population is numerous and occurs in the various clinical presentations. Geographic tongue is a transient and recurrent condition characterised by periodic localised loss of epithelium particularly of the filiform papillae on the dorsum of the tongue.[1] Geographic tongue (Benign migratory glossitis) may be characterised by erythematous patches with whitish margins across the surface of the tongue, with periods of exacerbation and remission that confer the typical migratory aspect of this entity.[2] It is also known as erythema migrans, annulus migrans and wandering rash. It is also reported as term wandering rash for geographic tongue. It can occur either solitary/multiple and intermittent/continuous.[3] It is usually an asymptomatic condition but occasionally associated with burning sensation and sensitivity to hot and spicy food.[4]

Case Report

Parents with a 4-year-old girl [Figure 1] reported to the Department of Paediatric and Preventive Dentistry with the chief complaint of pain in the lower left side. Pain was severe and continuous in nature, radiated towards head and was aggravated on eating food and relieved by taking medication. During intraoral examination, both right and left mandibular second deciduous molar was found carious [Figure 2]. Working diagnosis was reversible pulpitis and a periapical radiograph was taken; she was advised to have pulp therapy followed by stainless steel crown.

On further oral examination, it was diagnosed that she has geographic tongue and patient was not aware of it. She was not having any related medical history. Detailed history related to tongue that condition is mostly asymptomatic but rarely mild burning sensation occurs on tongue on eating spicy food. On examination of tongue, group of smooth, reddish-pink, atrophic or depapillated patches on the dorsum or lateral borders of the tongue were noted. These patches frequently have a slightly elevated, thin, yellow border [Figure 3]. On observation, the tongue showed a bifid appearance leading to have a significant tongue tie [Figure 4]. Similar lesions are observed and differentiated from other similar oral lesions such as psoriasis, Reiter syndrome, glossitis, lichen planus and lupus erythematosus, the examination of scalp, hair, palms, nails, soles and eye, but no abnormalities were diagnosed. Thus, patient was advised for consumption of multivitamins syrup and motivated for proper cleaning of tongue with tongue cleaner for symptomatic relief. On the second visit, the dorsum surface of tongue was having stripped regions with atrophied

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nature of papilla which was pinkish and present at the centre part of the tongue [Figure 5].

After 2 weeks, the tongue was clear and having faded pink hue surface with elevated red papilla. Parents were also examined for the similar lesion, but no such lesion was found among them [Figure 6].

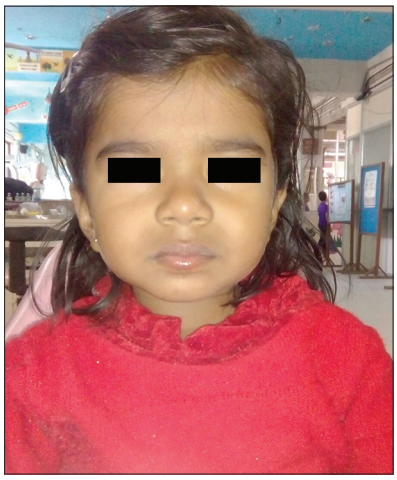

Figure 1: A 4-year-old patient.

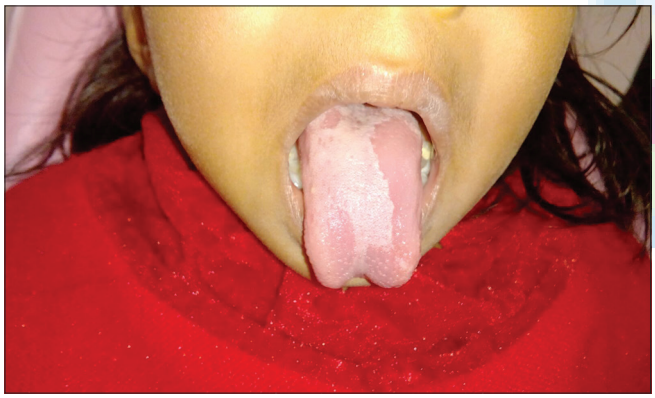

Figure 3: Geographic tongue.

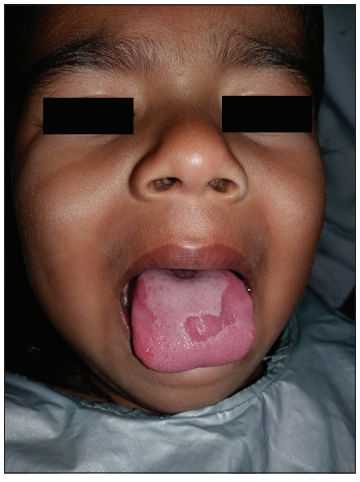

Figure 5: After 7 days.

Discussion

Benign migratory glossitis or geographic tongue is a common benign disorder of unknown etiology. Erythema migrans is

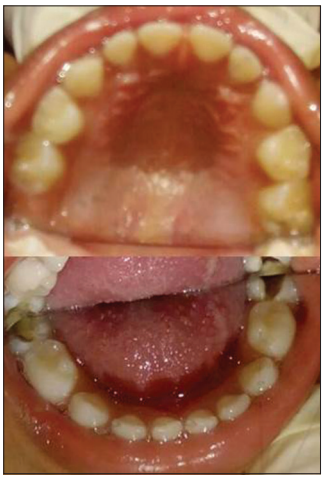

Figure 2: Intraoral pre-operative picture.

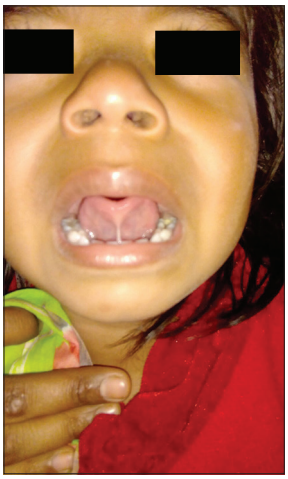

Figure 4: Bifid tongue with tongue tie.

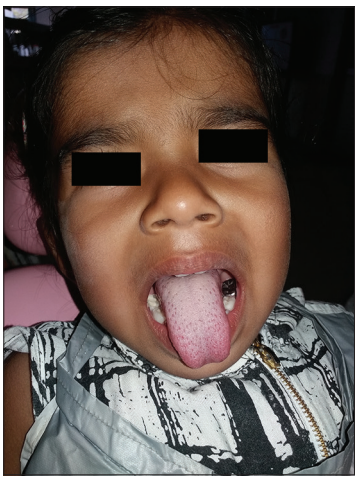

Figure 6: After 15 days.

a benign, red and white condition that is commonly seen affecting the tongue. When the lesion appears on the dorsal surface or lateral borders of the tongue, then the condition is referred to as geographic tongue.[5]

It is reported to begin in childhood and is most frequently observed in children 4–4½ years of age.[6] It is confined most normally on the dorsum of the tongue, lateral borders and the tip of the tongue. It is portrayed by discrete smooth reddened areas, usually slightly raised with pale yellow or white borders. When observed over a period of hours or days, the denuded patches may change drastically in size and shape, often appearing to migrate across the surface of the tongue or disappearing for widely varying period of time. The pattern has been likened to land masses and oceans on a map, from which the synonym geographic tongue was derived.[7,8]

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%–2.5% in general population. In school children, its prevalence was observed to be 1% by Redman.[8] High prevalence in children was found in Japan (8%) and Israel (14%). Females are more commonly affected.[9]

Etiology of geographic tongue is not clear, but in children, it can be associated with environmental allergies. 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.

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.[10]

Association with syndromes, it may be associated with Reiter's syndrome, Down syndrome, Aarskog syndrome, Foetal hydantoin syndrome and Robinow syndrome.[11]

Treatment

The geographic tongue is usually diagnosed based on its unique clinical features, and so its histopathological confirmation or biopsy is rarely needed. The treatment is aimed at reassuring the patient that the lesion is self-limiting and benign. If the patient reports of symptoms of tenderness and burning, treatment in these cases is empiric.[12] The treatment regime include Topical steroids, Vitamin A therapy, rinse with a topical anaesthetic agent, antihistamines, analytics, steroids and sodium bicarbonate in water and diphenhydramine are helpful and reducing the symptom.[13]

Conclusions

Geographic tongue is an amiable condition that never changes into danger. There are furthermore neither reported results nor dangers associated with this condition. The fundamental multifaceted nature is the misery in light of the enduring clinical appearance and ceaseless rehash in the wake of recovering. As the cause is dark, the condition is not preventable. Be that as it may, it is fitting to advance ideal oral cleanliness and keep away from contact with neighbourhood figures that could accelerate side effects, for example, hot and acidic substances, liquor, aggravations in toothpaste and mouthwash. Regular follow-up of these young patients is compulsory so that superfluous treatment convention is not attempted. In addition, long haul follow-up studies ought to be attempted to know the result of various treatment modalities in future.

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 patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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