IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 15, Issue 8 Ver. II (August. 2016), PP 109-111
www.iosrjournals.org

Benign Migratory Glossitis- A Case of Hereditary Aetiology

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Abstract: *Geographic tongue often associated with fissured tongue, is of unknown etiology with many suggested causative factors. An interesting case of geographic tongue with fissuring having a hereditary etiology and significant allergic history has been reported.*
Keywords: *Allergy, Fissured tongue, Geographic tongue, Heredity*

I. Introduction

Geographic tongue is an inflammatory condition first reported by Rayer in 1831. Various terminologies designate its use namely wandering rash, lingua geographica, erythema migrans, exfoliation areata linguae, superficial migratory glossitis, lingual dystrophy, pityriases linguae, transitory benign plaques of the tongue, marginal exfoliative glossitis, ectopic geographic tongue, and glossitis areata migrans, but is now most commonly called geographic tongue or benign migratory glossitis.[1] GT prevalence among adults range from 0.28% to 2.4%[2] and in children about 0.6 to 9.08%.[3]Though its etiology remains unknown, various proposed causes include heredity, congenital anomaly, acute inflammatory reaction, systemic conditions like psoriasis,Reiter's syndrome, anemia, gastrointestinal disturbances, nutritional disturbances, candidiasis, lichen planus, hormonal imbalance, psychological upsets and allergies.[4]

We report an interesting case of asymptomatic geographic tongue with hereditary etiology associated with allergic reactions.

II. Case Report

A six year old boy reported to a private clinic for a routine dental check up. On extraoral examination, the child appeared normal, healthy and well-developed for his age. There were no abnormal clinical findings. Intraoral examination of hard tissues revealed mixed dentition with dental caries in relation to 55, 65, 75 & 85 which were asymptomatic. On soft tissue examination, prominent lesions were noted on the dorsum of the tongue which were multiple, elliptical, circinate, irregular, circumscribed erythematous areas surrounded by slightly elevated keratotic borders. The erythematous areas were non- ulcerated, devoid of filiform papillae. The tongue lesions were consistent with geographic tongue. The other parts of the oral mucosa did not show any abnormal findings.

Figure 1: Clinical picture of dorsum of the tongue with multiple, irregular, circumscribed, erythematous, depapillated areas rimmed by keratotic borders

On recording medical & dental history from the parents, we elicited that the patient's father had similar lesions on his tongue which he observed on and off since his childhood. There were no extraoral abnormalities noted. Intraoral examination revealed a complete, caries-free permanent dentition, good oral hygiene and no evidence of gingival inflammation. The dorsum of the tongue surprisingly showed similar lesions which were irregular, circinate and multiple with pale pink colour surrounded white keratotic borders. These typically appeared map-like justifying its diagnostic name, **"geographic"** tongue.

Figure 2: Clinical picture of dorsum of the tongue with multiple, irregular, circinate, depapillated areas bordered by keratotic lines in association with fissured tongue

Father's dental history revealed that these lesions appeared right from his childhood. He also recalled that it would aggravate on eating spicy food. He also stated that he was more prone for allergic reactions.

III. Discussion

Geographic tongue (GT) is most prevalent in pediatric age group accounting to about 0.6 to 9.8%. It usually begins in childhood, between 6 and 12 months and is most frequently observed at the age of four years. It has been reported by Banoczy et al. that the highest incidence of geographic tongue was in individuals older than 40 years, demonstrating its persistence from childhood. According to them, the difference in prevalence among different age groups may indicate that genetic factors do not participate in the multifactorial aetiology of geographic tongue.[5]

Geographic tongue also called as benign migratory glossitis (BMG) is a psoriasiform mucositis that presents on the dorsum of the tongue. The characteristic clinical appearance of geographic tongue is a constantly changing pattern of serpiginous white lines bordering smooth, depapillated areas of mucosa. There is a change in the location and pattern with time. GT has been rightly called as the wandering rash of the tongue due to this changing appearance of the condition. The depapillated areas appears like continental outlines on a globe, hence the use of the routine term geographic tongue.[6]

The etiopathogenesis of erythema migrans remains unknown though many risk factors have been proposed including hormonal disturbances and oral contraceptive use, psychological factors, diabetes mellitus, allergic conditions such as atopy, hay fever and rhinitis, dermatological diseases such as psoriasis, and Reiter's Syndrome. There have also been reports of GT in correlation with Down's syndrome and fissured tongue. A family history has also been reported to be associated with GT which may be genetic and linked to major histocompatibility complex. It has been reported that lesions arise in connection with pronounced emotional stress favouring the significant role of psychosomatic etiology. According to the study done by Redman et al., it was found that GT was highly prevalent in mentally ill patients than in university students. They also noted that under emotional stress the student group with geographic tongue tended to have more severe lesions. These findings are in favour of the possible role of psychological factors in the etiology of GT.[7]

There are several studies reported of the relationship between BMG and allergy. A study of atopic patients with a history of asthma or rhinitis by Marks and Czarny found a 50% prevalence of BMG in these patients and concluded that they may have a similar pathogenesis. A study by Barton and associates concluded with about 95% certainty that patients with BMG have reported an allergy. Marks and Tait demonstrated an increased incidence of tissue type HLA- B15 in atopic patients with geographic tongue. Marks also stated that BMG was the common reason of allergy associated commonly with food allergy in children and adults. McLendon and Jaeger have similarly reported a series of children with milk allergy and BMG. In another study by Ullmann et al., it was found that atopy was common among patients with BMG which was confirmed with raised total serum IgE in patients with BMG in the work by Marks and Simons.[8] In the present case, the father had frequent episodes of allergic reactions in the form of allergic rhinitis and pharyngitis whichis in accordance to the above studies by various authors.

Fissured tongue is a rare inherited disorder where the tongue has deep grooves varying in size and depth. A polygenic mode of inheritance is thought to be the etiologic factor because the condition is seen in affected families. The condition is usually noted as an incidental finding on routine intraoral examination. The lesions associated with fissured tongue are asymptomatic generally unless the fissures are entrapped with debris or occur in association with geographic tongue. The association between fissured tongue and BMG supports a genetic basis for the development of the condition. The fissures may act as stagnation areas on the tongue surface in which glossitis may begin.[9] The present case also showed that the father had fissured tongue in association with GT, but they were sufficiently cleansed with good oral hygiene maintainence.

IV. Conclusion

Geographic tongue is an asymptomatic lesion that does not require any medical intervention. Only symptomatic lesions may be treated with topical prednisolone. If secondary candidiasis is present, topical or systemic antifungal medication may be tried. Cyclosporine with topical and systemic antihistamines has also shown successful results. The lesions associated with fissured tongue mandates thorough cleansing of the deep fissures to avoid infections. An interesting case of hereditary geographic tongue associated with fissuring has been reported.

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