

Benign Migratory Glossitis - A Review

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Abstract

Benign migratory glossitis is an asymptomatic inflammatory disorder affection the tongue mucosa (lateral border and dorsum), characterized by loss of filiform papillae leading to erythematous, circinate, ulcer-like lesions. Though it is a benign condition, the clinical appearance may cause of anxiety in the patient. Hence, it is important to recognize the lesion and reassure the patient. With this regard, this review provides the detailed description of Benign Migratory Glossitis.

Keywords: *Benign Migratory Glossitis, Geographic Tongue, Atrophic Papillae, White Rim*

1. INTRODUCTION

Rayer, first described about Benign Migratory Glossitis (BMG) in the year 1831¹. Multiple terminologies have been used to for the lesions including wandering rash, geographic tongue, erythema migrans, lingua geographica, exfoliatio areata linguae, pityriases linguae, transitory benign plaques of the tongue, superficial migratory glossitis, marginal exfoliative glossitis, ectopic geographic tongue, lingual dystrophy and glossitis areata migrans¹. Although BMG was first described 183 years ago, there is still a lack of clinical studies that precisely describe the characteristics of the lesions, thus impeding the understanding of its pathogenesis and diagnosis².

2. EPIDEMIOLOGY

Various epidemiological studies have shown the prevalence of tongue lesions in different parts of the world to be around 18.5%. The prevalence of tongue lesions including BMG, Median Rhomboid Glossitis and Fissured Tongue among the Dharwad population (a South Indian District) was 0.12%³. Among general population, the prevalence of BMG is reported to be between 1% to 3%⁴ with no gender predilection⁵. Compared to children, it is more common in adults⁶. Its prevalence in school children is 1% and there is

no definitive gender predilection as reported by Redman⁷. In India, BMG is reported in children in 0.89%⁶. The reason for low prevalence of geographic tongue in pediatric age-group is because it is ignored by the parents due to its asymptomatic nature⁷. Following a study in Fallujah City, Iraq, Anas H. Abed *et al.* (2018) reported the prevalence of Geographic tongue among Medium School Pupils aged 13-15 Years Old was 2.12%⁸.

3. ETIOLOGY

Etiology of BMG is not well-established⁵, several factors and associated conditions have been proposed⁹ such as pustular psoriasis, allergy, hormonal disturbances, juvenile diabetes, Reiter syndrome, Down syndrome, nutritional deficiencies, psychological upsets, fissured tongue and lichen planus¹. Hereditary and environmental factors may play a role in pathogenesis of BMG and association with psoriasis has been reported⁴. In children, it can be associated with environmental allergies¹⁰. A study by Amal Dafar (2015) *et al.* suggested that it is possible that hypertensive disease or the medications used to treat hypertension in these patients are factors associated with Geographic



Tongue⁹. A study by Jianying Liang *et al.* (2017) revealed that in the “Geographic Tongue alone” multiplex family, Geographic Tongue was caused by autosomal dominant IL36 RN mutations with incomplete penetrance¹¹. Dafar *et al.* (2017) noted an increased level of IL-8 in unstimulated saliva collected from patients with Geographic Tongue which was not dependent upon age, gender or the presence of systemic disease¹².

4. SIGNS AND SYMPTOMS

BMG is typically asymptomatic⁴. Patients may present with migrant oval red areas, surrounded by a well-defined white rim¹³ commonly seen on the lateral borders, tip, and the dorsal surface of the tongue¹⁴. Lesions appear as reddish, multifocal, circinate or irregular patches representing the lost filiform papillae¹. The shape, size, extent and intensity of the pattern is dynamic and can change from day to day¹⁵ (Fig 1). During the period of exacerbations, the lesions may be associated by burning sensation, oral uneasiness, foreign body feeling, or paroxysmal pain in the ears or same side submandibular lymph nodes¹.



Figure 1: Presence of fissured tongue associated with BMG

Many authors have reported in the literature regarding the presence of fissured tongue associated with BMG¹⁶. In a study by R. Scariot

et al. (2017) noted a higher level of DMFT, anxiety value and a prevalence of fissured tongue in BMG group¹⁶.

BMG is one of the most frequent oral manifestations of psoriatic disease, presenting histopathological, immunohistochemical and genetic similarities with plaque psoriasis¹⁷. BMG is a symptomatic lesion with a thick halo. In contrast, psoriatic patients are frequently asymptomatic and exhibit severe lesions with greater loss of papillae that are associated with severe Fissured Tongue². For the correct diagnosis of oral psoriasis, the histopathologic and immunogenetics analysis may be necessary¹⁷.

Other systemic diseases in which the association of BMG is noted include stress, atopy, allergy, psoriasis, anaemia, gastrointestinal disorders and hormonal discrepancies. Association of BMG has also been reported in syndromes like Robinow's syndrome, Down syndrome, Fetal hydantoin syndrome Reiter's syndrome and Aarskog syndrome¹⁸.

BMG has the characteristic feature of periods of remission and exacerbation. During this period lesions heal without leaving any residual scar. The lesions may last for days/months/years. The recurrence of the lesion is usually seen at a new location, thus creating the migration effect¹.

5. HISTOPATHOLOGY

Histologically, submucosa may show an acute and chronic inflammatory infiltrate¹. The white areas in geographical tongue show subepithelial mononuclear infiltrates predominantly neutrophilic with abundant exocytosis forming microabscesses⁶. The connective tissue shows infiltration of polymorphonuclear leukocytes and lymphocytes¹⁴. Scanning electron microscopy has revealed two types of abnormal mucosa in the

surface: absence of the hair of filiform papillae (an atrophic area), and a white coloured margin of desquamating cells. Between atrophic and normal mucosa, microfissures are noted¹.

6. DIAGNOSIS

A study by Preeti Tomar Bhattacharya (2015) in West Bengal population reveals the presence of tongue lesions in the study population was found to be significant (13.75%)¹⁹. The diagnosis is usually established based on history reported by the patient and clinical appearance of the lesion. Though usually the lesion is asymptomatic, some patients have reported pain and burning sensation in the affected area on intake of salt/spicy foods and/or during alcohol consumption⁵. Routine laboratory investigations, including CBC, ESR and levels of C-reactive protein are usually normal. In order to reassure the patient of the benign nature of the disorder, biopsy and histologic examination may be performed¹. The Differential diagnosis of BMG are atrophic candidiasis, neutropenia, psoriasis, leukoplakia, lichen planus, systemic lupus erythematosus (SLE), drug reactions, herpes simplex infection and Reiter's syndrome¹⁸.

7. TREATMENT

Most cases are totally asymptomatic and detected during routine clinical examination, thus requiring no treatment. However, in symptomatic cases, there is no gold standard or scientifically proven treatment²⁰. The treatment is aimed at reassuring the patient that the lesion is self-limiting and benign¹⁰. Most cases of geographic tongue are self-healing¹⁴. If the patient reports of symptoms of tenderness and burning, treatment in these cases is empiric¹⁰.

In cases having excessive discomfort and pain, medications like analgesics, anti-inflammatory agents, antihistamines (diphenhydramine

hydrochloride), topical corticosteroids (betamethasone), oral rinses containing topical anaesthetics (lidocaine), cyclosporine therapy, zinc, vitamin A and vitamin K supplements can be advised. In recalcitrant cases, topical application of Tacrolimus has shown effectiveness. Systemic administration of microemulsion pre-concentrate of cyclosporine, with initial dosage of 3 mg/kg per day and a maintenance dosage of 1.5 mg/kg per day two months later has shown satisfactory improvement¹⁸.

Following a systematic analysis, Waldimir Gushiken de Campos et al stated that there are no scientifically proven treatment modalities for symptomatic Benign Migratory Glositis²⁰.

8. CONCLUSION

BMG constitutes a benign mucosal lesion of uncertain aetiology, which shows periods of remission and exacerbation. The clinical presentation may be the cause of anxiety and fear of cancer in patients. Patients have to be reassured that it is a benign lesion. Empirical treatment should be considered for symptomatic cases.

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