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STUDY OF COMORBIDITIES IN CASES OF GEOGRAPHIC TONGUE

Dermatology

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ABSTRACT

Twenty-two cases of geographic tongue were examined and investigated thoroughly by us. Few studies have examined the clinical features of geographic tongue. But there is paucity of literature regarding co-morbidities of geographic tongue. The aim of this study was to study the various associated co-morbid illness in patients of geographic tongue. In this study, a large number of patients were found to have parasitic infestations, besides other comorbidities already reported in literature and we propose that parasites might be one of the etiological factors among multi-factorial etiology of this disorder and these patients should be thoroughly dewormed to prevent recurrences and relapses.

KEYWORDS

Benign migratory glossitis, Atopic, Psoriasis, Inflammation, Tongue

INTRODUCTION

Geographic tongue is also known as benign migratory glossitis or lingual erythema migrans. The prevalence varies from 1 to 2.5% in general population[1,2]. On the dorsum and lateral border of tongue; circinate, map like areas of erythema surrounded by well demarcated scalloped white borders are present due to loss of filiform papillae (depapillation) from the lingual mucosa[3]. The labial or buccal mucosa, lips and hard palate may get involved rarely. The size, shape or location of the lesion can change very rapidly within minutes or hours, hence the name wandering lesions. The lesions persist for days to weeks and then resolve to later recur on a different or same location. There is paucity of literature regarding exact etiology and co-morbid illness associated with the disease.

The objective of this study was to investigate various co-morbidities and factors which can be associated with this disease.

MATERIALS AND METHODS

We studied twenty-two patients of geographic tongue aged more than 18 years attending the outpatient department during last six years and these patients were thoroughly examined and investigated for associated co-morbidities like psoriasis, diabetes melitus, allergies, anemias etc. Besides routine blood examination, urine and stool examination was also done in these cases. We did not send any sample for histopathological biopsy and the diagnosis was made on clinical grounds.

Geographic tongue is a benign self-limiting painless disease of oral mucosa and is usually self-limiting. It usually does not require any treatment and reassurance is sufficient. Oral multivitamins were given to all patients. For symptomatic cases, topical corticosteroids, topical tacrolimus, topical anesthetic agents were given. The standard treatment protocol of the associated co-morbid conditions was also given.

OBSERVATION AND RESULTS

Out of 22 patients examined, 9 (40.9%) were males and 13 (59.1%) were females. The age of the patients varied from 18 to 52 years with a mean of 32±18.8 years. Two patients (9%) had history of geographic tongue in their first-degree relatives.

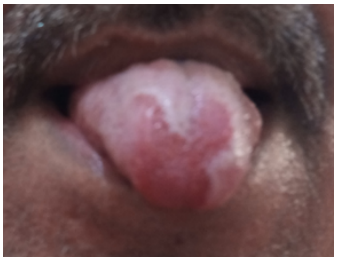

Figure 1. Geographic tongue: well demarcated erythematous lesion with loss of papillae and slightly raised white border in a geographic pattern on dorsum of tongue

Out of 22 patients, co-morbidities were found only in 17 (77.2%) patients. Some patients had more than one comorbidity associated.

The most common co-morbidity in our area was parasitic infestations found in 9(40.9%) of the patients. Few patients 4 (18.1%) had a mix of parasitic infestations as well. Amongst them, 5 (22.7%) patient had amoebiasis, 2 (9.0%) had giardiasis, 1 (4.5%) had roundworm, 1 (4.5%) had hookworm, 2 (9%) had filarial infestation, 1 (4.5%) had filarial epididymo-orchitis and 1 (4.5%) had filarial hydrocele **(Table 1).** Psoriasis was the second most common associated comorbid condition found in 5 (22.7%) patients, followed by diabetes melitus in 4 (18.1%), dental infection in 4(18.1%), anaemia in 4 (18.1%), atopic diathesis/dermatitis in 3 (13.6%), emotional stress in 3 (13.6%), eosinophilia in 2 (9%) and malnutrition in 2 (9%) patients. No co-morbid illness could be detected in 5 (22.7%) patients.

TABLE – 1 Co-morbid illness associated with geographic tongue (n=22)

Comorbid illness/ associations	17 (77.2%)
Psoriasis	5 (22.7%)
Diabetes Melitus	4 (18.1%)
Dental Infections	4 (18.1%)
Atopic diathesis/dermatitis	3 (13.6%)
Parasitic infestations	9 (40.9%)
a. Amoebiasis	5 (22.7%)
b. Giardiasis	2 (9.0%)
c. Roundworm	1 (4.5%)
d. Hookworm	1 (4.5%)
e. Filarial Infestations	2 (9.0%)
f. Filarial epididymo-orchitis	1 (4.5%)
g. Filarial hydrocele	1 (4.5%)
Anemia	4 (18.1%)
Eosinophilia	2 (9.0%)
Emotional Stress	3 (13.6%)
Malnutrition	2 (9.0%)

DISCUSSION

Geographic tongue was first described by Rayer in 1831. It is more prevalent in females and maximum no of people (40%) presents in the age 20 to 29 years[1,2]. In our study also, majority (59.1%) were females and the mean age was 32±18.8 years. This variation may be because we did not include patients age less than 18 years in our study while in paediatric patients, its prevalence may range from 0.37% to uptil 14.3%[1,2].

The exact etiology of geographic tongue is not known. Histologically, geographic tongue resembles psoriasis as it demonstrates parakeratosis, subepithelial infiltrates, munro's microabscess, kogo's microabscess, regular acanthosis, exocytosis of neutrophils and lymphocytes, basal cell alteration and hyperplasia, suprapaillary hypotrophy and vascular ectasia in papillary dermis[4]. There is strong HLA-Cw6 and weak HLA-B13 predisposition in both[2]. Therefore, it may represent a form of intraoral psoriasis. Geographic tongue is also

associated with allergy, stress, diabetes mellitus and anemia. Various triggering factors include hot spicy, acidic foods and alcohol. It has inverse relationship with smoking.

Parasitic infestations, anemia and malnutrition is very common in our part of the world. So though in western literature. Psoriasis is the most commonly known cause of geographic tongue in western literature with majority being idiopathic; in our study we noted a high incidence of parasitic infestations in these patients, so we wonder if parasitic infestations play an important role in the etiopathology of this condition. Parasites not only steal our nutrients and lead to malnutrition but they can also modulate immune response in our body by secreting and excreting various biochemical substances which will alter the response of our immune mechanisms. Parasites are known to precipitate or aggravate various diseases like allergy, reactive arthritis etc., they may also have a role in psoriasis in genetically susceptible individuals as polygenic inheritance model is also proposed[1,5,6]. In our study also history of geographic tongue was present among 2 patients (9%) in first degree relatives.

Geographic tongue is also highly prevalent in mentally ill patients and decreasing stress may help in early healing[2,6]. In our study also history of emotional stress was present in 3(13.6%) patients as the precipitating factor for the disease.

Several other studies have also shown association of diabetes, atopy, deficiency of vitamin A, D, B6, B12, folic acid and zinc[2,5,7,8] in geographic tongue which was also found in our study.

CONCLUSIONS

Though geographic tongue is a benign self-limiting and usually asymptomatic condition, it is essential to early identify and treat co-morbid conditions as well so as to decrease its recurrence and prolong remission.

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