Abstract

Geographic tongue lesions may also appear, though rarely, on other mucosal areas of the oral cavity. This type of lesion is called as geographic stomatitis. The cause is unknown; yet, emotional stress, nutritional deficiencies, and hereditary factors are suggested. Clinically, it occurs as red annular patches of the labial or buccal mucosa, soft palate; rarely gingiva and floor of mouth. There are mild erosions of the mucosa on these lesions, which are frequently multiple and well-circumscribed. Characteristically lesions change their shape and location. The condition is usually asymptomatic. When symptomatic, palliative treatment is recommended.

The purpose of the present paper is to report two cases of geographic stomatitis and to describe a possible connection between this condition and patients' emotional status.

Keywords
Geographic stomatitis, migratory stomatitis, stomatitis areata migrans, erythema circinatum migrans, ectopic geographic tongue.

Özet


Bu makalenin amacı, iki coğrafik stomatit olgusu sunmak ve bu durum ile hastanın emosyonel statüsü arasındaki ilişkiyi tanımlamaktır.

Anahtar Kelimeler
Coğrafik stomatit, migratuar stomatit, stomatitis areata migrans, eritema sirsinate migrans, ektopik coğrafik dil.
INTRODUCTION

Geographic tongue is a condition characterized by atrophy of the filiform papillae on single or multiple areas of the tongue in an irregular pattern which is frequently accompanied by peripheral keratosis. These geographic lesions occur on the dorsum and lateral borders of tongue in about 1–2% of general population. Similar changes may appear on other mucosal areas of the oral cavity. This uncommon condition was first described in 1955 under the term “erythema migrans” by Cooke. It is also named as migratory stomatitis, stomatitis areata migrans, erythema circinatum migrans, ectopic geographic tongue, geographic stomatitis, annulus migrans, Cooke’s disease and migratory mucositis.

The most frequently reported sites of geographic stomatitis (GS) are the buccal mucosa, lower labial mucosa and mucobuccal fold. Involvement of the gingiva, alveolar mucosa, soft palate and floor of the mouth is unusual.

Clinical presentation of GS is described as slightly raised, round, erythematous lesions that are circumscribed by well-defined whitish borders. The lesions vary in size from a few millimeters to several centimeters in diameter.

Hume has made a classification of GS based on its clinical distribution:

Type 1: Lesions on the dorsum, lateral borders and tip of tongue with possible extension to undersurface. The lesions may migrate with time and show both active and remission phases (geographic tongue, without geographic lesions elsewhere in the mouth).

Type 2: Geographic tongue, accompanied by geographic lesions elsewhere in the mouth.

Type 3: Atypical tongue lesions whether or not accompanied by lesions elsewhere in the mouth. Atypical tongue lesions consist of two forms: A- Fixed forms; one or two areas of tongue are affected but movement is not observed. Instead, they disappear only to recur after a period of time at the same area. B- Abortive forms; these start as yellow-white patches but disappear before acquiring the typical appearance of geographic lesion.

Type 4: Geographic lesions elsewhere in the mouth, without the presence of a geographic tongue.

Although its etiology is unknown, many different conditions, such as pustular psoriasis, Reiter’s syndrome, atopy, stress may be associated with GS. The condition is more common in men than women. No particular age group shows an increased tendency to GS.

The purpose of the present paper is to report two additional cases of GS and to describe a possible connection between this condition and patients’ emotional status.

CASE 1

33 year-old woman applied to our clinic for routine dental examination. Her medical history was unremarkable. Extraoral examination revealed hyperkeratosis on her left hand. There were no skin lesions present except the hyperkeratosis of hand. Intraoral examination showed multiple erythematous lesions surrounded by a narrow white margin on the right buccal mucosa, mucobuccal fold, the right upper labial mucosa and the dorsum of the tongue (Figure 1–3). The lesions varied in size and had well-defined, white, slightly raised, circinate borders. No evidence of vesicle formation was noted. There was fissuring of the dorsum of the tongue. She was unaware of mucosal lesions but she was suffering from burning of tongue after consuming hot or spicy foods. Patient expressed that she has been under stressful condition during the last three months because of her mother’s health problems and intensity of symptoms has increased during this period. Patient was referred to Dermatology Clinic for the evaluation of lesions on her hand and possible relationship between skin and oral mucosal lesions. Skin lesions of her hand were diagnosed as “contact dermatitis”. Therefore, it was concluded that skin and oral mucosal lesions were not related.
Oral lichen planus and acute atrophic candidiasis were considered as differential diagnoses. Lichen planus could be excluded as the clinical appearance was not consistent with this condition. A smear from the lesions of oral mucosa for the evaluation of oral candidiasis was negative. Her dermatologist decided to take biopsy, but the mucosal lesions disappeared on appointment day. However, no scars were left at the sites of the previous lesions. An incisional biopsy was performed for tongue lesions. Microscopic examination of the biopsy specimen showed acanthosis in the surface epithelial layer, subepithelial neutrophil infiltrates and the formation of microabscesses and chronic inflammatory infiltrate in submucosa. Microscopic diagnosis was “geographic tongue”. Benzydamine HCl and triamcinolone acetonide were used for symptomatic treatment. We offered to avoid topical factors that exacerbate her symptoms, such as very hot, spicy, or acidic foods. A two weeks follow-up conducted with the patient revealed only the migratory behavior of these asymptomatic lesions. The clinical diagnosis of geographic stomatitis was made.
CASE 2

43 year-old man had applied to our clinic for toothache. In his medical history, patient expressed that he has been under medical treatment until he was 19 years old, due to congenital hypothyroidism. Currently he is not using any medication. He has been undergoing psychological treatment since 1993 because of over nervousness, instability to control himself and problematic relations in the working environment.

Extraoral examination was unremarkable. During intraoral examination it was detected that he had fissured tongue and there were bilaterally, slightly raised, erythematous lesions on the buccal mucosa (Figure 4). The lesions had white, circinate borders. In these regions, there was no symptom in the burning or pain characteristics. Also the patient expressed that he was unaware of this condition. Result of the smear taken from the lesion region in order to detect possible existence of candida albicans showed normal flora. Full blood test results, vitamin B12 and folate levels were normal. 15 days later when he applied to clinic with these results, it was seen that there were same type of lesions in the nearby regions of lower labial mucosa and comissura labiorum. However, mucosa at the sites of previous lesions was completely normal (Figure 5). Although lesions were migrating, they were similar in sight. Due to all these characteristic attributions, no biopsy was taken and the disease diagnosed as “geographic stomatitis”. Nonetheless, the patient was directed to internal medicine department. Due to detection of hypercalcsuri in urinalysis examination the patient is directed to urology department. In his abdomen CT and renal USI, renal cortical cysts were seen in both of his kidneys. Suspected of internal hernia in the right hemi region of the abdomen, radiology department requested intestinal passage examination. Results were normal.

Patient monitored for a year with regular periods. It was observed that the intensity and localization of the lesions changed and this situation was attributed to his emotional stress.

DISCUSSION

In the literature limited numbers of GS cases were reported, however some of the researchers think that its real incidence is more than expected since the disease mostly proceed in asymptomatic nature and easy to diagnose when encountered together with geographic tongue. Nevertheless, Bouquot and Gundlach reviewed data on 23616 white American and found no patient with geographic stomatitis. Daneshpazhooh et.
denote that this lesion is rarely encountered in the population.

Etiology of GS is not understood completely. There is no certain difference between geographic tongue lesions and GS but GS defined as the type of these lesions encountered in the oral mucosa. Geographic tongue can be related to atopic conditions (hay fever, eczema, and asthma), reactive bronchitis, allergy, hormonal disturbances (pregnancy, juvenile diabetes mellitus), nutrition deficiencies, anemia, gastrointestinal anomalies, infectious agents and lithium therapy. Psychological status as an etiological factor has considerable effects. Both of these patients had psychological problems. We have observed that alteration in the intensity of the lesions was correlated with the patient’s emotional status. Patients having a psychological treatment supported this view.

Differential diagnosis includes atrophic candidiasis, erosive lichen planus, psoriasis, Reiter’s syndrome, lupus erythematosus, leukoplakia, allergic or hypersensitivity reaction to a food, flavoring or drug. Diagnosis of GS is usually made without biopsy. Medical history and physical examination may be helpful in differentiating GS from the oral lesions of psoriasis and Reiter’s syndrome, which have similar histological changes. Reiter’s syndrome characterized by the triad of conjunctivitis, urethritis, arthritis. The histopathological appearance of specimen from patient with geographic tongue and GS has been well described as a psoriasiform pattern. Psoriasiform lesions of the oral mucosa described by Weathers et al. in 1974 are characterized by psoriasiform mucositis and can be divided into three distinct clinical entities; geographic tongue, geographic stomatitis, and intraoral psoriasis. Diagnosis of GS is usually based on their clinical appearance; pattern of migration, lack of symptoms, chronicity of lesions. Ralls and Warnock claim that GS may represent an incomplete form of either psoriasis or Reiter’s syndrome. It was also shown that geographic tongue and psoriasis are associated with human leukocyte antigen HLA Cw6.

Pogrel and Cram reported GS occurring in 19 of 100 patients with severe relapse of cutaneous psoriasis. Therefore, exposed skin should be examined in patients with GS. However, association between GS and psoriasis is not yet understood completely and may be coincidental.

The lesions tend to change location, pattern, and size within minutes to hours. The disease is characterized by exacerbation and remission periods. As regards duration of exacerbation, lesions show variation. While in some patients lesions are healing within two weeks, in some patients they continue to develop for more than a year. Lesions resolve without residual scar formation. These may last days, months, or years. When lesions recur, they tend to appear at a new location, thus producing migration effect. However, Weathers et al. have reported that all geographic lesions are not migrated and they divided these lesions two subgroup as erythema circinate perstans and erythema circinate migrans. Brooks and Balciunas showed that only 34% of the patients had a history of migration of the lesions. Therefore, we have preferred using the term “geographic stomatitis” rather than the term “migration”, which is being used up to date.

Although GS has not appeared within all geographic tongue patients, almost all patients with GS, geographic tongue has been observed. Fissured tongue is also frequently observed among GS patients. Both our cases had fissured tongue, but only one of them had geographic tongue as convenient with the literature.

The majority of patients are asymptomatic but occasionally patients may suffer from pain, itching or burning sensation. Patients should be told to avoid topical factors that exacerbate their symptoms, such as smoking, very hot, spicy, acidic foods, and dried, salty nuts. Symptomatic treatment may include mouth rinsing with topical anesthetics, antihistamines, steroids or combination of these. Anemia should be ruled out with the appropriate laboratory tests. Replacement of iron or zinc, if these elements are deficient, may help relief of symptoms. The
disease may cause anxiety and fear of cancer\(^5\). Patients who have a fear of cancer may refer to medical help for control of emotional stress.

**CONCLUSION**

Geographic lesions have been recorded for a long time but our knowledge of this condition is still inadequate. The reason of this insufficiency may be harmless nature of the vast majority of lesions. Dental practitioners should be aware that geographic lesions are not only confined to the tongue, but also can affect occasionally oral mucosa elsewhere in the mouth.

**REFERENCES**


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