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Nodular migratory tongue lesions: atypical geographic tongue or a new entity?

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Benign migratory glossitis, also known as geographic tongue (GT), is a chronic inflammatory disease of the tongue [1]. Patients affected by GT typically present lesions showing oval red areas circumscribed by a well-defined white rim which produce a map-like aspect [2,3]. These lesions usually change in size, shape, pattern and location over time, and are characterized by alternating periods of exacerbation and spontaneous regression or complete remission [2–5]. The migratory feature is, indeed, one of the clinical peculiarities of this benign condition. Prevalence of benign migratory glossitis in the general population ranges from 0.78% to 5% showing a female gender predilection, with a F:M ratio of 2:1 [1,6]. GT affects with a greater incidence children and 30-years young adults and its frequency decreases with age [1,3,4]. A relation between GT and high IgE level, asthma and eczema has been reported, showing a high prevalence of GT in atopic patients [4,6].

A 50 years old woman referred a nodular lesion involving the dorsum of the tongue. The lesion appeared monthly and were characterized by a fast-growing phase followed by pain and burning sensation which last for few days. It appeared cyclically in different area of the tongue and it resolved spontaneously within the next few days (3 to 7 days). The clinical history was negative for systemic diseases and drug intake. The patient had already undergone complete blood count, allergy blood tests, submandibular gland echography and magnetic resonance imaging (MRI) of the head and neck. Complete blood count reported normal results. Moreover, complement factors (C3 and C4), C-reactive protein (CRP), immunoglobulin A (IgA), vitamin B complex, vitamin D and thyroid-stimulating hormone (TSH) showed normal values. A slight increase in immunoglobulin E (IgE) level was noticed (113 kU/L; reference value <100 kU/L). Blood allergy test for a panel of 12 allergens, ANA (antinuclear antibodies), ENA (Extractable Nuclear Antigen), anti-tissue transglutaminase (tTG-IgA) and HLA-B*51 blood research, were negative. Echography and MRI did not reveal any submucosal mass involving the tongue's tissues. Previous therapy with amoxicillin (1 g twice daily) and metronidazole (250 mg four times a day) for 6 days was prescribed by her dentists, while topical (betamethasone 1 mg mouthwash) and systemic (prednisone 25 mg) corticosteroid therapies have been prescribed by otorhinolaryngologist. Both therapies provided no reduction in onset frequency nor in symptoms duration.

At the first examination a clinical picture of benign migratory glossitis was observed [1,2] (Fig.1). Three weeks later the clinical picture appeared completely different: a nodular red lesion, 2 cm in size, with firm elastic consistency at palpation, was localized on the left dorsum of the tongue (Fig.1). Incisional biopsies were performed extending deeply to the submucosal and muscular layers. The clinical history and previous MRI allowed to exclude submucosal neoplastic lesions and infectious diseases [7,8].

Histopathological analysis revealed the presence of psoriasiform hyperplasia with spongiosis of the epithelium and exocytosis of neutrophils with the formation of small intraepithelial collections. The

submucosal chorion presented interstitial lymphoplasmacytic infiltration with associated numerous eosinophils and fewer neutrophils. The inflammatory infiltration extended up to the lingual muscle with progressive reduction and was mainly composed of CD3 positive T-lymphocytes. No Langerhans cells were detected on CD1a immunostaining. Research on cytomegalovirus(CMV) infection and fungal infiltration was negative(Fig.2). Clinically, the lesion underwent completely spontaneous regression during the next week. At subsequent dermatologist's examination, no cutaneous lesions were observed and clinical skin signs of psoriasis were excluded. Forty days later a similar painful nodule, associated to swallowing and speech impairment, appeared on the opposite side of tongue's dorsum(Fig.3).

A weekly injection of triamcinolone acetonide 40 mg/ml was performed, in different areas of the tongue, for three weeks. However, after 50 days without lesions, a further painful nodule occurred on the central-posterior dorsum of the tongue. This recurrence was treated with three weekly injections of betamethasone 4mg/2ml. Complete resolution of the clinical picture was observed and no further recurrence was noticed at 9 months follow-up.

Etiology of geographic tongue is still unknown, but a family history of this condition is frequently reported by the patient. Thus, a genetic predisposition, with a polygenetic inheritance model, has been supposed[3,9,10]. In literature, association between GT and various conditions and diseases have been proposed(Tab.1)[3,6,11]. Psoriasis showed the strongest association with GT, while for the other conditions only weak evidences are reported[3,6,11]. Tobacco smoking showed, instead, an inverse correlation with GT[3,4]. Psoriasis is a chronic skin inflammatory disease, with genetic and autoimmune basis, which may involve also the joints[3-5]. Its prevalence in the general population is approximately 1-3%(worldwide ranges from 0.51% to 11.4%), affecting both genders at any ages, with a predilection for 5th and 6th decades[4,5]. Diagnosis is usually clinical and based on the identification of skin lesions which may be localized or generalized[4,5].

GT has been reported as the oral manifestation more commonly associated to psoriasis disease[3-5,12]. Approximately 10% of the patients affected by psoriasis have shown benign migratory glossitis and GT is 3-times more frequent in psoriatic patients than in the general population[3-5]. An increased association between benign migratory glossitis and psoriasis, up to 34%, has recently been reported [1]. Moreover, the presence of GT is associated to a greater severity of psoriasis disease, worse treatment response and decreased patients' quality of life[1,5]. It has been supposed that the presence of GT in a normal patient may indicates an increased probability of future psoriasis onset[4,13]. Many authors assert that, in order to establish a diagnosis of oral psoriasis, the co-existing presence of skin psoriatic lesions is necessary[4]. Some Authors has also supposed that GT may be considered as an early manifestation of psoriasis[3,14].

This extremely unusual case showed a clinical picture similar to GT during the remission phase. The nodular lesions are characterised by the same migratory feature and histopathological findings comparable to GT and psoriatic disease. However, erythematous nodular lesions are absolutely unconventional in benign migratory glossitis and, to the best of our knowledge, no cases have been reported. It is still not clear if we can classify this clinical case as an atypical form of GT or define it as a separate entity under the name of “nodular migratory glossitis”.

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TABLES

Tab.1: Diseases and conditions which have been associated with GT in literature.

Diseases and conditions associated with geographic tongue

Psoriasis

Atopic dermatitis

Allergies

Celiac Disease

Reiter syndrome

Drugs: oral contraceptives, lithium, antihypertensives

Down syndrome

Pregnancy

FIGURES LEGENDS

Fig.1: At the first examination, typical clinical picture of GT was observed (a). A nodular red lesion with firm elastic consistency at palpation appeared on the left side of the tongue's dorsum (b).

Fig.2: Histopathological examination revealed the presence of psoriasiform hyperplasia with spongiosis of the epithelium and exocytosis of neutrophils; submucosal chorion presented interstitial lymphoplasmacytic infiltration with associated numerous eosinophils and fewer neutrophils.

Photomicrographs at 5x (a) and 20x (b) magnification

Fig.3: A second painful nodular lesion appeared on the opposite side of the tongue, approximately 40 days after previous lesion's remission.

Conflict of interest disclosure

The authors have no conflict of interest to disclose.

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Ethical committee approval and informed consent

The study was performed in compliance with the recognized international standards, including the principles of the Declaration of Helsinki. Approval of the ethical committee was not needed for clinical case reports, each procedure has been performed according to the institutional clinical guidelines. Data and sample were collected under patient's informed written consent, guaranteeing anonymity.

Contributors section

N.L. wrote the manuscript, collected the clinical data and followed the patient during diagnosis and treatment

L.M. reviewed the manuscript and performed the histopathological diagnosis

E.V. reviewed the manuscript and followed the clinical case

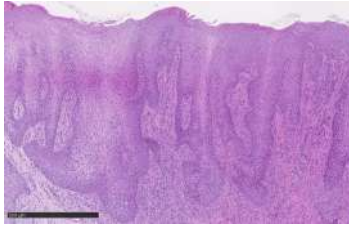
G.L. reviewed the manuscript and followed the patient during diagnosis and treatment



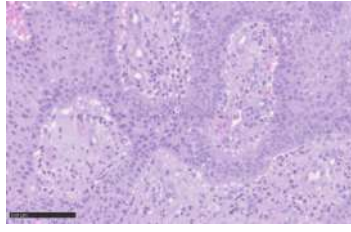
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