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Use of 808 NM diode laser for the treatment of geographic tongue

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Abstract

Purpose: The aim of this case report is to report a case of symptomatic migrant glossitis successfully treated with LLLT.

Materials and Methods: Treatment was made by Laser B cure (DenMat Italy) - 808 Nm, 0.25 watts - during 1-minute cycles for 6 consecutive times.

Results: Treatment of migrant glossitis was successfully and the patient was free of any kind of symptom.

Conclusion: Therapy with LLLT could be successfully used without any adverse events in the treatment of migrant glossitis.

Keywords: LLLT, Tacrolimus, Micobacterium, vitamin deficiency, migrant glossitis therapy

1. Introduction

Geographic tongue or benign migratory glossitis is defined as an inflammatory disorder with unknown etiology, characterized with a decrease in the number of papillae in the dorsum and lateral border of the tongue circumfusing with the formation of red, round patches and often white borders that give the tongue a map-like appearance ^[1]. Its prevalence has been reported to be 2-3%, occurring more often in children, with a slight preference for females, and with its frequency reducing with age. Lesions tend to change location, pattern and size over time, affecting mainly the back and side edges of the tongue. In most cases it is asymptomatic. However, some patients may report pain or burning sensation, especially during ingestion of spicy or acidic foods. Although the main etiology of geographic tongue remains unknown, some factors including emotional stress, vitamin deficiency, allergy, genetic factors, immune disorders and systemic diseases are known to play a causative role. Recently it is proposed an association between geographic tongue and the bacterial colonization profiles of the tongue ^[2]. The authors found that Spirochaetes were significantly more abundant in patients with geographic tongue compared to controls. Micobacterium, Leptospira, Methylothermobacter, and Lactococcus were significantly associated with lesion sites ^[2] It remains unknown if this change in the oral microbiota is a consequence of the lesions or of factors associated with the initiation and progression of the disease. There is a link between geographic tongue and psoriasis skin disease. A geographic tongue is significantly more frequent in psoriatic patients ^[3]. The lesions need to be treated in case of presence of pain, burning sensation, taste diminution, cancer phobia or aesthetic concerns ^[1]. Several topical and systemic treatment are proposed in the literature, like Triamcinolone Acetonide, Tacrolimus, topical steroids (beta-metasone) ^[1, 4, 5, 6]. Despite the use of Laser in the oral soft tissue wound healing is documented, in the literature there are not work about the use of this device in the treatment of migratory glossitis ^[7, 8]. The aim of this work is to report a case of symptomatic migrant glossitis successfully treated with a type of a low power laser.

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2. Materials and Methods

A 36 years old male healthy patient, went to our observation, with a tongue multiple erosions rounded on the left side and in the tip of the tongue with a well-defined margin, aching in the presence of salty and spicy foods especially in the tip. He was undergone to antibiotic therapy in the last 15 days, for a larynx inflammation. From a clinical evaluation a diagnosis of



Fig 1



Fig 2

The next day the patient was free of any symptoms while chewing, salty and spicy foods and after 7 days there was a remission of the tip lesion, meanwhile the untreated lesion on the left of the tongue was only smaller in size (fig. 3).

Tacrolimus is an immunosuppressive macrolide and its anti-inflammatory action is similar to that of cyclosporine, which involves the inhibition of interleukin 2 (IL-2) production by T cells. As well as pimecrolimus, topical formulations of tacrolimus have been established for the treatment of atopic dermatitis. Recently, topical tacrolimus has been shown to be effective in the treatment of oral lichen planus and psoriasis [5]. Side-effects such as burning sensation at the site of application, transient taste disturbance, intermittent headaches, and rarely patchy hyperpigmentation of the oral mucosa as a result of topical tacrolimus treatment were reported [9]. The use of topical triamcinolone Acetonide could be responsible to transient irritation at the side of application more than Tacrolimus.

[9] In the literature there is a case of Cushing syndrome in a baby after topical application of Beta-metason, and a case of hyperpigmentation after application of topical corticosteroids [10, 11]. In a work the author documented a case of a patient with rapid onset of extensive varicella zoster infection in tacrolimus-treated skin like side effects [12]. Another side effect more frequent is that oral topical corticosteroids are connected with an improvement of oral candidosis [13, 14]. The topical steroids have a low adhesive capacity to the mucosa and often

needed of much more dose to solve the lesions. So is very important to find a different method without adverse-effects to treat this condition. The use of LLLT in the oral wound healing is documented in the literature, but not in the therapy of migrant glossitis. A recent paper report a case of afta major treated successfully with a single session of LLLT [8]. The use of LASER with 808 nm of wavelengths is documented in the literature, in a work is demonstrated its effectiveness on oral pain when used prior to composite

benign migrating glossitis was made (fig. 1, 2).

The patient refuses the application of ointments or other topical agents for the strong tendency to relapse. We decide to try to treat the lesion on the tip of the tongue with the application of Laser B cure (DenMat Italy), 808 nm, 0.25 watts. The laser is activated in 1-minute cycles for 6 consecutive times, keeping the light at about 1 cm from the lesion.

restoration for symptomatic non-carious cervical lesions unresponsive to desensitizing agent; and in another study laser with this wavelength is considered the best for the control and elimination of the endodontic microbiota [15, 16].



Fig 3

3. Conclusion

Therapy with this kind of LASER could be successfully used without any adverse events in the treatment of migrant glossitis.

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