

DIAGNOSIS AND TREATMENT OF ORAL BURNING SYNDROME

DIAGNÓSTICO E TRATAMENTO DA SÍNDROME DA ARDÊNCIA BUCAL

DIAGNÓSTICO Y TRATAMIENTO DE LA SÍNDROME DE ARDOR BUCAL

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The objective of this study was to conduct a literature review on the factors associated with the diagnosis and treatment of burning mouth syndrome (SAB) that the dental surgeon should be able to recognize. The databases considered were: PUBMED, MEDLINE, LILACS and SCIELO in the period from 2000 to 2014, with use of descriptors connected to SAB. Were found 25 articles and the results showed two categories – *Diagnosis of SAB and Treatment of SAB*. Different therapeutic modalities exist, however these are palliative, where the association of psychological disorder, depression and anxiety in patients is a common finding. It is concluded that further studies are needed for the elucidation of the pathogenesis of the SAB, in order to provide better quality of life for patients, and a greater awareness of the modalities of treatment.

Descriptors: Diagnosis; Burning mouth syndrome, Therapeutics.

O objetivo desse estudo foi realizar uma revisão de literatura sobre os fatores associados ao diagnóstico e tratamento da síndrome de ardência bucal (SAB) que o cirurgião-dentista deve estar apto a reconhecer. As bases de dados consideradas foram: PUBMED, MEDLINE, LILACS e SCIELO no período de 2000 a 2014, com uso de descritores ligados a SAB. Foram encontrados 25 artigos e os resultados mostraram duas categorias - *Diagnóstico do SAB e Tratamento do SAB*. Verificaram-se diversas modalidades terapêuticas, porém estas são paliativas, na qual a associação de transtorno psicológico, depressão e ansiedade nos pacientes é um achado comum. Novos estudos são necessários para a elucidação da patogênese da SAB, a fim de proporcionar melhor qualidade de vida para os pacientes, e um maior conhecimento das modalidades de manejo e tratamento.

Descritores: Diagnóstico; Síndrome da ardência bucal; Terapêutica.

El objetivo de este estudio fue realizar una revisión de literatura sobre los factores asociados con el diagnóstico y tratamiento del síndrome de ardor bucal (SAB) que el cirujano dentista debe ser capaz de reconocer. Las bases de datos consideradas fueran: PUBMED, MEDLINE, LILACS y SCIELO en el período de 2000 al 2014, con uso de descriptores involucrados con SAB. Fueron encontrados 25 artículos y los resultados mostraron dos categorías - *Diagnóstico do SAB y Tratamiento del SAB*. Diversas modalidades terapéuticas existen, sin embargo éstos son paliativos, donde la asociación de trastorno psicológico, depresión y ansiedad en pacientes es un hallazgo frecuente. Nuevos estudios son necesarios, para la aclaración de la patogénesis de la SAB y, para ofrecer mejor calidad de vida para los pacientes y un mayor conocimiento de las modalidades de tratamiento.

Descriptores: Diagnóstico; Síndrome de boca ardiente; Terapéutica.

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INTRODUCTION

People with symptoms of pain, dryness and burning sensation or firing in the mouth seeking dental care, are treated in different ways without reaching a diagnosis or decisive prognosis¹.

The Burning Mouth Syndrome (BMS) is characterized by pain in the oral cavity with or without inflammatory signs but without specific lesions²⁻⁴. A synonymy for BMS includes glossodynia, oral dysesthesia, glosso-pyrosis, glossalgia, stomato-pyrosis, and estomatodinia⁵.

The BMS is a relatively common condition and occurring more in postmenopausal women and elderly or middle-aged, with no predominance of ethnic and socioeconomic classes⁶.

The presence of pain in the mouth, taste changes and salivation, without clinically detectable lesions in the buccal mucosa, are characterized as a pathognomonic triad for BMS. The pain feels like burning, moderate to severe and can persist for years, affecting the side edges and the tip of the tongue. There may be soreness in the gums, lips, and buccal mucosa, without visible clinical changes to the oral and pharyngeal examination^{4,5,7}.

In patients affected by BMS, there is increased pain sensation during the day, in states of stress, fatigue, excessive speaking, the intake of spicy and hot foods, occurring improves eating cold foods, with the completion of some kind work and/or distraction. The burning sensation does not follow the anatomy of peripheral nerves and typically affects more than one site⁵.

The complaint of lips and dry mouth, intense salivation, hypogeusia and dysgeusia, and change in taste especially for metallic, salty or bitter are often found in patients with the Syndrome^{5,7}. The patient's salivary composition with the BMS can present changes such as increasing the amount of potassium, proteins, and phosphates, making saliva thicker and sticky⁷.

The etiology of BMS is still unknown, but local, systemic and psychogenic factors are identified as triggers of the disease, thus demonstrating, its multifactorial side⁷.

The BMS patients seek help from specialists like dental-surgeons, otolaryngologist, dermatologist, and make use of corticoids, painkillers, antibiotics, estrogen, retinoids, and psychotropic⁸.

The realization of anamnesis, general physical examination, examination of the oral cavity and minute oropharynx, are fundamental to prevent the treatment based on trial and error⁵.

Aiming to collaborate in expanding the knowledge of health professional, about the procedures useful in the diagnosis and choice of treatment modalities of the BMS, the objective of this study was to conduct a literature review of the factors associated with the diagnosis and treatment of the disease that Dental-Surgeon must be able to recognize.

METHOD

This is a review of publications in indexed magazines, about the burning mouth syndrome, considering the period from 2000 to 2014, in the databases PubMed, MEDLINE, LILACS, and SciELO.

The following descriptors were used for the search: glossodyn, stomatodyn, etiopathogenesis, treatment, orofacial pain, burning mouth syndrome, neuropathic pain, oral phantom pain, etiology, psychogenic factors, neuroinflammatory model, neuroplasticity, neuropathic theory, hormone disorders, drug-induced, antihypertensive drugs, angiotensin-converting enzyme inhibitors, angiotensin II receptor antagonists, clinical trials, clinical cases, antidepressants, analgesics, management, pathophysiology, evaluation, xerostomy.

For the classification of the studied subject, there was an initial reading, which originated themes.

RESULTS

After analysis of the publications, 25 publications were considered, being: 5 monographs, 18 scientific articles, and two book chapters, who met the study objective. The study presented two categories, namely: *BMS Diagnosis and BMS Treatment*

DISCUSSION

BMS Diagnosis

The BMS can be defined as a clinical entity characterized by pain and/or burning sensation located in a particular region or to extend across the buccal mucosa without the detection of lesions or standard regular changes^{1-4,6,9,10}. The pathogenesis of this disease is still unknown, making it difficult to advance in the investigation of an effective treatment^{3,11,12}.

The BMS carriers are characterized by being anxious, suspicious, depressed, worried, socially isolated and with shaken bodily and emotional functions, with a tendency to get tired easily, suffer from muscle tension, usually have a monotone voice and are affected by possible palpitations and indigestion. Are generally hypochondriacs, cancerofóbicos individuals, and they experience or go through stressful experiences. They may have degrees of mental disorder and neurotic tendencies^{3,12}.

Local irritants such as spicy foods, hot liquids, carbonated beverages, coffee and strong tea, some juices, toothpaste, and mouthwashes are capable of exacerbating the discomfort¹³. The dysfunction of the masticatory system leads to the appearance of parafunctional habits, such as bruxism, triggering the burning sensation in the oral mucosa⁴. Smoke, alcohol, reflux and made dentures for years and not adapted act as irritants agents on the buccal mucosa, desiccating it and causing discomfort¹².

An important BMS aggravating is dry mouth (xerostomia) as a result of decreased function of the salivary glands, with advancing age, and the side effect of the use of medications such as antispasmodics, antidepressants, antipsychotics, relaxing musculoskeletal, antiparkinsonian, anti-arrhythmic, antihistamines, anticonvulsants, anxiolytics, benzo-diazepane, appetite moderators, diuretics, and antihypertensive^{4,12,13}.

In patients with BMS, salivary significant changes were documented in potential hydrogenic (pH), buffer capacity, proteins, mucin, and immunoglobulins. Changes in salivary constituents seem to

have a meaning in the Syndrome, in the case of the general reduction in salivary flow and suggest the involvement of the sympathetic and parasympathetic function, as well as neuropathic injury in disease development^{7,4}.

It is believed that the BMS may be the result of specific systemic diseases or nutritional deficiencies, including B vitamins and iron. However, it has not been found a consistent relationship, since the treatment and correction of the findings do not diminish the oral burning and other associated complaints⁵.

A higher incidence of soft tissue lesions of the mouth, such as gingivitis, periodontitis, ulcerated or erosive lesions or geographic tongue, fissured, scalloped or erythematous, Sjogren's syndrome, other connective tissue diseases, and Diabetes mellitus has been reported in patients with BMS, and the possibility that the conditions can cause irreversible neuropathic changes, was not entirely explored¹¹.

The BMS may be a neuropathic condition mediated centrally or peripherally with different etiologies. Considering the increased mouth burning after rinsing with topical anesthetic, it has been suggested that oral burning can be a central neuropathic condition that results in decreased peripheral inhibition of trigeminal nerve¹¹. Changes of taste and tolerance for heat pain are noted in patients with BMS, involving the loss of function of nerve fibers of small calibre¹¹. The mechanism by which the nervous system is involved in the BMS remains unexplored and known^{4,7}.

In BMS, there are reports of cases of burning mouth arising from the use of angiotensin-converting enzyme inhibitors (ACE) inhibitors such as captopril, enalapril, and lisinopril, which suffered remission after discontinuation of medication¹⁴. The loss of sense of taste is reported with the use of ACE inhibitors, suggesting a link between pain, taste and BMS^{7,12}.

The BMS is more prevalent in women after menopause, with epidemiological data suggesting a balanced involvement between men and women¹⁵. If menopause can be considered as a factor related to with the

syndrome, its mechanism is not clear yet, because it suggests that oral burning is not reversed with treatment for hormone replacement⁷.

The characterization of the syndrome may start by the constant burning complaint in the mouth without any injury detected on physical examination of the oral cavity¹⁶. Patients report a feeling of burning mouth, which starts in the morning and, in most cases, tends to intensify throughout the day. The presence of burning symptom may be associated with diseases and/or systemic changes, including Sjögren's syndrome, radiation therapy of head and neck, and hormonal changes⁷.

The diagnosis of BMS is eminently clinical. The presence of any lesion, the syndrome hypothesis will be discarded. During the clinical examination, the oral structures must be checked and, if they are within the normal range, trying to locate the source of pain. In addition to the detailed anamnesis, it seeks to know the emotional state of the person.

As complementary diagnostic resources, the mycological examinations such as culture for fungi, hematology, serum iron levels, vitamin B12, hormonal dosage, salivary secretion and serologic tests for antibodies of Sjogren's syndrome, can be used. It is advisable, before establishing the final diagnosis of BMS, that the dental surgeon should discuss with other health specialist and talk with the family¹⁷.

BMS Treatment

The ignorance of a particular cause for the BMS and the multiplicity of possible etiologic factors associated with the condition, make the clinical management of patients a daunting task¹².

In the BMS, it seeks to employ palliative measures to eliminate factors, local or general, that aggravate symptoms. These measures include, among others, the use of artificial saliva, the stimulation of salivary flow, prostheses adjustment, dental calculus removal and oral hygiene care¹¹. The mental condition cannot be underestimated, constituting an important orientation,

referral to psychological or psychiatric assessment¹².

In patients with BMS, there is a significant incidence of *Candida* species, where the remission of symptoms for the syndrome occurs after instituted antifungal therapy. For individuals with disabilities of B vitamins and presenting BMS, the replacement therapy has proven effective. In xerostomy associated with BMS, the use of artificial saliva, moisturizing gels, mouth rinses, topical application of fluoride and sialogogues, contributed in studies for the remission of the symptoms of the syndrome¹⁸.

In the absence of factors that might explain the symptoms presented in BMS, a pharmacological therapy has been recommended to alleviate the hassle in the disease. The use of analgesics, corticosteroids, sialagogues, antidepressants, benzodiazepines and anticonvulsants may be a good option for setting the diagnosis of BMS^{4,18,19}.

The main reason for failure in the treatment of BMS, appears to be the failure in access to associated factors⁵, as in the case of patients with deficiency of serum lithium developing BMS whose replacement makes the symptoms disappear¹².

The BMS has been treated with tricyclic antidepressants (TCA) with a low dose, based on the initial reports of the effectiveness of analgesics that relieve mouth burning¹¹. Many tricyclic have been used, including amitriptyline, desipramine, nortriptyline, imipramine, and clomipramine, although only amitriptyline has been evaluated in controlled clinical trials⁷.

Studies suggest that benzodiazepines, including clonazepam, can be effective in BMS⁷. Clonazepam has been proven effective at mitigating the dysgeusia taste and dry mouth added to the burning mouth present in BMS⁷.

Other drugs and treatments recommended for the symptomatic relief of burning mouth present in the BMS, include topical capsaicin; tranylcypromine sulfate, monoamine oxidase inhibitor in combination with diazepam; beyond the systemic

mexiletine anesthetic, a use-dependent sodium channel blocker, being indicated for painful neuropathic conditions^{3,7}.

Treatments for BMS, sometimes are shown as empirical and, although in most cases are based on clinical protocols described in the literature. Once discarded the role of local factors, the syndrome treatment should be performed as if the professional would be faced with a pain of neuropathic type^{20,21}.

The history of pain in the BMS is very important as a contributing factor in the diagnosis of the syndrome. This should be evaluated for the duration, intensity, location, relief or worsening factors, the presence of abundant salivation or xerostomia, type of food, altered taste, use of mouthwash, type of toothpaste, habits such as chewing gum use, cigarette, alcoholic beverages, pain related to the use of prosthetic devices, presence of parafunctional movements, daily used medication and psychological history^{22,23}.

Because of the difficulty of finding a permanent and effective way of treatment, may be suggested the following treatment regimens^{2-4,11}:

- Local or topical treatment

2% Lidocaine (topical use): reduces pain symptoms without causing increased burning sensation at first;

0.025% and 0.075% topical capsaicin: natural neuropeptide obtained from plants of the Solanaceae family, which produces an effective analgesia selective in localized pain syndromes, when used as a single drug or in combination with oral medications. Should be used twice daily, morning and afternoon during three weeks;

Laser Therapy: analgesic alternative, probably due to increased production of β -endorphin and serotonin, in the prostaglandins control in the biostimulation of the muscle fibers.

-Systemic treatment

Anxiolytic benzodiazepines: should be used at an initial dose of 0.25 mg/day, up to 3 mg/day until symptoms have subsided without the occurrence of side effects of the drug;

Tricyclic antidepressants (amitriptyline, nortriptyline, clomipramine): use an initial dose of 10 mg/day and can be increased to 10 mg every day, up to 40 to 70 mg/day, divided in three daily doses, use up the reduction of symptoms or the appearance of side effects; the maximum dose must be 150 mg/day;

Antidepressants serotonin inhibitors: Use 50 mg/day for 2 weeks, and then 150 mg/day until symptoms subside;

Mood stabilizers (lithium): use 0.4 to 1.2 g/day to replacement of serum levels from 0.60 to 1.20 mEq/L;

Anticonvulsants: the initial dose must be 100 mg/day, increasing 100 mg/day every 4 days or 7 days, partitioned into three daily times, until remission of symptoms or appearance of side effects;

Antispasmodic with action on the smooth muscles (chlordiazepoxide): use 5mg/night, increasing 5 mg every 4 days ou 7 days, 3 times a day, until symptoms subside or appearance of side effects;

Alpha-lipoic acid: use 800 mg/day during 8 weeks until the reduction of symptoms.

The psychotherapy indication has also been suggested for the BMS treatment and can bring benefits to patients, especially those that appear anxious, depressed, tense and cancerofóbicos^{3,21,23,24,25}.

CONCLUSION

Although the possible etiologic factors have been suggested for the syndrome, its specific cause remains unknown and, consequently, there is no effective treatment. It is suggested that the BMS may be the result of specific systemic diseases such as Sjogren's syndrome, systemic changes such as xerostomy, dysgeusia, head and neck radiotherapy, hormonal changes and neuropathic changes, and nutritional deficiencies, including B vitamins and iron.

The pathogenic mechanisms of BMS remain unknown. It appears, therefore, that the disease is closely related to psychological changes, but not scientifically proven yet.

The ignorance of a specific cause of the syndrome and the multiplicity of possible etiologic factors associated with the

condition, make the clinical management of these patients a challenging task. The dental surgeon must be prepared to recognize the various manifestations of signs and symptoms of BMS, and can seek the best treatment modality for partnership with other healthcare specialties to help the patient who has the syndrome.

Further studies are required to ensure that, to elucidate the cause of the syndrome to provide a better quality of life to patients with BMS.

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CONTRIBUTIONS

Guilherme Henrique Borges participated in the conception, design, analysis and writing of the articles. **Marcelo Sivieri Araujo** contributed in the design and critical review.