Review Article

Burning Mouth Syndrome: An Overview

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ABSTRACT

Burning mouth syndrome is one of the most enigmatic oral pain complaints that presents in clinical practice. The etiopathogenesis of BMS is not known, though different psychological and biological factors have been implicated. There is also increasing body of evidence pointing to neuropathic origin. Although effective therapies have been identified in concrete cases, a treatment modality offering efficacy in most cases of BMS remains to be established .This article is an effort to review and update this complex disorder.

KEYWORDS: burning mouth syndrome, neuropathy, pharmacological therapies, alternative therapies.

INTRODUCTION

Burning mouth syndrome is a chronic pain syndrome characterized by burning pain in the oral mucosa, usually without accompanying clinical and laboratory findings. This condition is probably of multifactorial origin, often idiopathic, and its pathogenesis remains largely enigmatic. As a result, patients with inexplicable oral complaints are often referred from one health care professional to another without effective management.

Burning pain without mucosal or skin lesions, however, represents the typical symptom of chronic neuropathic pain conditions resulting from nerve damage, and in recent years a neuropathic basis of BMS has been better identified through the use of more sensitive diagnostic techniques. This new evidence, in increasingly larger groups of BMS subjects, suggests a common background of neuropathy in the pathogenesis of this syndrome. As a result, it seems more appropriate to recognize two clinical forms of BMS---- "primary BMS" or essential idiopathic BMS for which organic local/systemic causes cannot be identified; and "secondary BMS" resulting from local/ systemic pathological conditions and thus potentially sensitive to etiology-directed therapy. According to these criteria, 'idiopathic" BMS as well as the "secondary" form may represent two distinctive subgroups of the same "pathological entity."

Consequently, the initial approach to diagnosis of BMS is to identify and manage potential precipitating factors. Secondary BMS patients may initially present with similar clinical and psychosocial features, but are distinguishable with careful diagnosis that often enables successful management of symptoms.

CLINICAL FEATURES

The term "BMS" clinically describes a "variety of chronic oral symptoms that often increase in intensity at the end of

each day, and that seldom interfere with sleep". Accordingly, two specific clinical features define this syndrome: (1) a "symptomatic triad", which includes unremitting oral mucosal pain, dysgeusia, and xerostomia; and (2) "no signs" of lesion(s) or other detectable change(s) in the oral mucosa, even in the painful area(s). Full-blown syndrome is commonly observed in specific subgroups of patients, such as peri-/post-menopausal women. In the remaining cases, "oligosymptomatic" (pain and dysgeusia or pain and xerostomia) or "monosymptomatic" (pain only) forms of BMS are the most frequent presentations. More recently, increasing attention has been given to the altered perception of sensory/chemosensory functions as well as to the changes in the psychological profile of many BMS patients. As a result, both disturbances should be included in the clinical spectrum of BMS**.** There is a strong female predilection, with most female being postmenopausal and age of onset being approximately 50 years. There are many symptoms associated with burning mouth syndrome which generally do not conform to anatomic boundaries. The tip of the tongue is the most common location (71%), followed by the lips (50%), lateral border of the tongue (46%), dorsum of the tongue (46%) and palate (46%).

DIAGNOSIS

The procedure for differentiating "primary" from "secondary" BMS includes clinical/laboratory tests that are specifically meant to identify local/systemic factors associated with the syndrome.

MANAGEMENT

VARIOUS THERAPEUTIC MODALITIES

Many pharmacological agents administered topically or systemically, have been proposed to overcome the pain in BMS. Based on the reported new evidence of changes in peripheral autonomous innervation in BMS, topical administration of drugs has recently been considered. In particular, daily topical use of clonazepam (¼ or ½ tablet applied 3 times each day for sucking) has shown partial to complete pain relief in most patients with idiopathic BMS. Low doses of capsaicin, applied 3 or 4 times topically on the area(s) where the pain is localized, appear to be quickly effective in alleviating the pain in BMS subjects.

Patients with a stronger psychogenic component may be unresponsive to these medications. In these cases, the most effective pain management is the systemic administration of mood-altering drugs. Long-term treatment with benzodiazepine-class drugs (anxiolytics) may be clinically useful in BMS subjects. Other mood-altering drugs in BMS include anti-depressants. Low doses of tricyclic anti-depressants are characterized by an analgesic action, independent of their anti-depressive effect. Sertraline, paroxetine, and amisulpride are reported to be well-tolerated and effective after a four- to eight-week administration in BMS subjects. Analgesic doses of anti-depressants should be adjusted according to the individual response and may be particularly indicated in BMS patients with minor depression.

Patients who do not respond to any of the above treatments (resistant BMS) should undergo "cognitive" or

"cognitive/behavior" therapies, since they probably have, in their BMS spectrum, a strong and complex psychogenic component of the pain. The purpose of psychodynamic therapy is to allow each patient to understand the causes of his/her symptoms.

Important pharmacological and alternative therapies used in BMS are being described below.

ANTIDEPRESSANTS

Since problems such as depression and anxiety play an important role in modulating pain perception, and are able to increase or decrease nerve transmission from the peripheral pain receptors and thus modify individual perception of the pain, treatment has been provided in the form of antidepressants among patients with BMS. Both tricyclic antidepressants and serotonin reuptake inhibitors are used to treat neuropathic pain. Antidepressants which have been studied for BMS treatment are trazodone, paroxetine, sertraline, moclobemide and doxepin.

ANTISYCHOTIC DRUGS

Antipsychotic drugs that have been used for treating this syndrome are amisulpride, levosulpride and olanzepine. Amisulpride is a selective dopamine antagonist. Its effect along with other antidepressants has been showed in the study conducted by Maina et al in 2002.

ANTICONVULSANTS

It has long been appreciated that there are similarities between epilepsy and neuropathic pain and antiepileptic drugs may also have an analgesic effect in neuropathic pain. Among these groups of drugs mention should be made of gabapentin and clonazepam. Many authors have shown patients with BMS to suffer sensory alterations such as changes in heat tolerance, hypogeusia and dysgeusia, and increased excitability of the palpebral reflex, related to dysfunction of the dopaminergic system at central nervous system (CNS) level. Such dysfunction would comprise reduced dopaminergic inhibition and thus increased neuron excitability. Dysfunction of the dopaminergic system would justify systemic administration of the antiepileptic drugs gabapentin and clonazepam, which act upon the gabaergic system - enhancing its activity in an attempt to counter dysfunction of the dopaminergic system.

Topical clonazepam presently seems to be the best option with healing of almost half of the patients.

C FIBRE NOCICEPTOR DESENSITIZER

CAPSAICIN

The effect of capsaicin on the pain in burning mouth syndrome depends on the underlying pathophysiological mechanism of the process involved in the patient's pain. The effect of the capsaicin is to desensitize the c-fiber nociceptors, thus exciting significant effects on painful disorders arising from these afferents.

NON STEROIDAL ANALGESIC BENZIDAMINE HYDROCHLORIDE

Benzidamine hydrochloride is a non steroidal drug with analgesic, anti-inflammatory and antimicrobial properties. Its mechanism of action is

not entirely known, but the drug may effect formation of thromboxanes and alter the rate of prostaglandin production, and thereby inhibiting platelet aggregation and stabilizing cell membranes.

DRUGS USED AGAINST PEPTIC ULCERS

SUCRALFATE

Sucralfate was selected by Campisi et al on grounds that it protects the digestive mucosa. It strongly adheres to the ulcer. It precipitates surface proteins at ulcer base and act as a physical barrier for preventing acid, pepsin and bile from coming in contact with the ulcer base. The ulcer healing dose of sucralfate is 1 gm taken 1 hr before three major meals and at bed time for 3-4 weeks.

ANTIOXIDANT

ALFA LIPOIC ACID (ALA)

Alfa lipoic acid is a natural antioxidant, unique free radical protector having excellent bioavailability. It is a sulfur containing substance that is readily converted to and from its reduced form, dihydrolipoic acid. It also elevates cellular levels of glutathione whose low levels cause oxidative stress, inflammation and nerve damage leading to peripheral neuropathy. It is therefore possible that BMS may be a neuropathy related to free radical production and low levels of intracellular glutathione and that alpha lipoic acid may be beneficial in at least some of the patients with this complaint.

TOPICAL ANAESTHETIC AGENTS

As neuropathic pain frequently is associated with a peripheral ectopic generator, it is logical to use a topical anesthetic to desensitize the painful site. This approach may decrease the neuronal firing and relieve the pain or burning sensation. Topical lidocaine (5%), xylocaine and benzocaine are used frequently on the oral mucosa.

ALTERNATIVE THERAPIES

ELECTROCONVULSIVE THERAPY FOR BURNING MOUTH SYNDROME

ECT can be considered to be an option for treating individuals with enduring and intractable intraoral burning pain. A 66-year-old woman with BMS type 1, which is characterized by daily burning pain associated with circadian variation, underwent electroconvulsive therapy (ECT). After the completion of 12 ECTs, the pain markedly diminished and the pronounced ECT effect persisted over the subsequent 24-week period of observation.

COGNITIVE BEHAVIOURAL THERAPY (CBT)

CBT is a psychotherapy based on cognitions, assumptions, beliefs, and behaviors, with the aim of influencing negative emotions that relate to inaccurate appraisal of events. The general approach, developed out of behavior modification, Cognitive Therapy and Rational Emotive Behavior Therapy, has become widely used to treat various kinds of neuroses and psychopathology, including mood disorders ,anxiety disorders and burning disorders

COMPLETE SYSTEMS AND PRACTICES

These practices include ayurveda, homeopathy and naturopathy. Ayurveda has shown promise in BMS with the use

of Daru Halad, a type of Turmeric, which is used in paste form in combination with honey for topical application. Homeopathy suggests use of Acid Nitricum or Merc Sol for BMS, both 200 potency, depending on the patient's clinical findings and history.
Naturopathic medicine emphasizes the ability of the body to heal and maintain itself. Various therapeutic methods of Naturopathy are found to minimize the effects of stress such as unfocussed anxiety, depression, hypertension, chronic lethargy, infectious diseases, neuropathic pain and neuro-hormonal imbalances. Natural elements such as colors, aromas of plants, herbs and flowers find their use in treating stress related disorders.

MIND BODY INTERACTIONS

It aims at teaching the patient to become aware of the tension and learn to relax it. These includes various therapies like humor therapy, music therapy, meditation and hypnotherapy.

BIOLOGICAL BASED THERAPIES

HERBAL TREATMENT

Herbal medicine tends to treat specific causes of pain and burning. Some of them includes Hypericum perforatum extract (St. John's wort oil), willow bark tincture and Rose glycerite.

DIETARY AND LIFESTYLE CHANGES

Preliminary studies have found that low dietary levels of vit C, vit A, vit E and fibres are associated with increased burning sensations. Therefore patients should take fruits and vegetables containing high levels of these antioxidants.

CONCLUSION

Burning Mouth Syndrome remains an interesting, though poorly understood condition in the field of oral medicine. The first step in the management is arriving at an accurate diagnosis and ruling out all the secondary causes of this disorder. Although effective therapies have been identified in concrete cases, a treatment modality offering efficacy in most cases of BMS remains to be established.

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