

Burning mouth syndrome

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ABSTRACT: Burning mouth syndrome (BMS) is defined as a chronic pain condition characterized by a burning sensation in the clinically healthy oral mucosa. This condition is probably of multifactorial origin, often idiopathic and its exact etiopathogenesis remains unclear. The diagnosis is difficult, it can be made only after excluding all known diseases and deficiencies that can cause an oral burning sensation. The treatment frequently involves medications and dentists should be able to evaluate, diagnose and properly manage these patients.

KEYWORDS: stomatodynia, chronic, orofacial pain, diagnosis, treatment.

1 INTRODUCTION

Burning mouth syndrome is an idiopathic burning discomfort or pain affecting people with clinically normal oral mucosa, in whom a medical or dental cause has been excluded [1–2]. Synonyms used to describe burning mouth syndrome include Glossodynia, Glos-sopyrosis, Stomatodynia, Stomatopyrosis, Sore tongue, and oral Dysaesthesia [3]. According to classification system initiated by the International Association for the Study of Pain, with additional data supported by the International Headache Society and the American Academy of Orofacial Pain, the term “burning mouth syndrome” (BMS) is a category of non-neuropathic orofacial pain with an intraoral localization [4–5].

The pain is bilateral in most cases, does not follow the anatomy of peripheral nerves, and is typically reported at more than one oral site, the tongue being most frequently affected [6-7]. Patients with BMS also frequently complain of dry mouth and loss of or altered taste [8-9].

The etiology of this disorder remains poorly understood. Although there is evidence that a dysfunction in central and/or peripheral nervous system plays an important causative role [10-11]. It has been hypothesized that psychological factors could explain the burning mouth symptoms [12–13]. Several studies have reported high frequency of psychiatric morbidity in BMS [12–14]. It has been proposed that BMS be classified into two clinical forms: primary or essential/idiopathic BMS and secondary BMS. Primary BMS has no identifiable organic local or systemic causes and a neuropathological cause is likely. Secondary BMS results from local or systemic pathological conditions susceptible to cause-directed therapy [15].

Although BMS has been recognized for more than 30 years, it is a poorly understood and usually ill-defined condition [16]. The focus of this article is to provide the clinician with an understanding of BMS and to offer guidance in diagnosing and treating the patient with this condition.

2 EPIDEMIOLOGY

Due to the variability in diagnostic criteria used in diagnosing BMS, accurate epidemiologic data is missing. According to the literature, BMS can affect 0.7–15% of the population [15]. It is much more common in women than in men and most commonly presents in middle and late age. The mean age of patients being 50 - 60 years [17].

3 ETIOPATHOGENESIS

The aetiology is multifactorial, involving interactions among local, systemic and psychological factors [15]. Systemic factors include diabetes, nutritional deficiencies, hormonal changes, and psychological disorders. Local causes include oral infections, allergies, galvanism, salivary gland dysfunction, salivary component changes, and dental treatment and failure [18]. Psychogenic factors include anxiety, depression, stress, life events, personality disorders, and phobia [19-20]. Other causes of burning mouth symptoms include side effects of radiation or chemotherapy, cranial nerve injury, Sjogren's syndrome, systemic lupus, Parkinson's disease, trigeminal neuralgia, herpes simplex, and herpes zoster [21-22]. Immunosuppressant medications may also be implicated and patients with immune dysfunction, such as in human immunodeficiency virus (HIV), may suffer from oral conditions that cause their burning [23]. Support for a neuropathic aetiology comes from studies that have shown altered sensory and pain thresholds in people with burning mouth syndrome [24].

The pathophysiology of BMS is unclear and has generated controversy over the years [15]. According to Suarez and Clark, there are two hypotheses for BMS worth discussing. The first involves the interplay of sensory and taste systems innervating the tongue, which are because of the chorda tympani branch of the facial nerve and the trigeminal nerve, and involves the concept of individuals being "supertasters." The second theory is that small fiber neurologic damage or deterioration in the oral cavity causes BMS symptoms [23]. More recently, Woda et al. proposed that burning mouth syndrome is associated with an alteration of gonadal, adrenal and neuroactive steroid levels. They suggested that chronic anxiety or stress results in a dysregulation of adrenal steroids, which will, in turn, lead to an altered production of neuroactive steroids in skin, mucosa and the nervous system [25].

4 CLINICAL FEATURES

By definition BMS patients experience symptoms without having any visible abnormality of the oral tissues. The mucosa looks clinically normal and well lubricated. The distribution of the burning sensation is nearly always bilateral but it does not follow anatomical land-marks. The commonly affected sites are the tongue and lips but all other areas of the mouth may be involved [26]. Many patients complain of burning in more than one area [16]. Usually the onset is spontaneous but at times there is a precipitating event such as dental treatment. Patients often describe their pain as burning, tingling, hot or numb feeling. It is not unusual also to experience changes of taste perception presenting as poor or altered taste, and a feeling of dryness of the mouth [15]. The timing of the symptoms is variable. Some patients complain of continuous discomfort whereas others find that it gradually increases during the day [27]. Symptoms can be affected by eating (hot and spicy food), drinking (alcohol) and talking. Some patients also report the pain increases when they are feeling more stressed or tired. BMS can be associated with other facial or bodily pain, but it rarely interferes with sleep [16]. A family and social history may reveal a variety of psychosocial features that play a role in this syndrome [28].

Different classification types have been proposed based on the daily fluctuations of the symptoms [29–30]. A more pragmatic approach is proposed by Scala et al. [5], who organize burning mouth syndrome into two clinical types: primary and secondary types. Primary type includes idiopathic, non-neuropathic BMS. Burning mouth sensations (formerly, secondary BMS) are associated with established organic/therapeutic-related etiologies (e.g., oral cavity disorders, including oral local neuropathy, systemic disorders, nutritional deficiencies, drug-induced, neurological and psychiatric abnormalities). Burning mouth sensations are symptoms of these alterations and nowadays, according to available literature, do not represent a distinct type of BMS. [31]

5 DIAGNOSIS

The diagnosis of burning mouth syndrome should be established only after all the other possible causes have been discarded by systematic analysis of the patient; it's a diagnosis by exclusion. There are no specific diagnostic tests, thus the diagnosis is made in the absence of visible oral lesions such as erythema, erosions, depapillated tongue [32]. The diagnosis is clinically based on history of presenting complaint, normal clinical examination findings and normal laboratory results. It is

very important to take a thorough past medical history and drug history. Details about quality, intensity, onset, occurrence, persistence, overall duration, evolution, and site(s) of pain symptoms are essential for the adequate assessment of pain [16].

Symptomatically, BMS must be differentiated from other conditions, that may produce BMS-like symptoms: [15-16-31]

- Candidiasis,
- Sjögren Syndrome,
- Scleroderma,
- Anemia,
- Diabetes,
- Vitamin deficiency (B1, B2, B6, B12, folate, iron),
- Hypothyroidism,
- Multiple sclerosis,
- Anxiety,
- Dehydration,
- Mouth breathing/nasal obstruction,
- Medication reaction,
- Radiation-induced stomatitis,
- Apthous stomatitis,
- Contact stomatitis,
- Erosive lichen planus,
- Pemphigus,
- Leukoplakia,
- Bacterial infection....

6 MANAGEMENT

Since the treatment is generally unsatisfactory and BMS is a chronic pain syndrome, it is necessary that patients are properly informed regarding the expectations that need to be realistic, appropriate [33].

The first step in the treatment of BMS is the differentiation of primary from secondary form because in the presence of the latter, therapy is directed to treating the causal disease. This etiologically directed therapy usually produces a good response [34]. 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.

The cure for primary BMS, however, remains elusive despite attempts with different classes of medication. The variable response rate to medical therapy is likely due to the multifactorial pathophysiology of idiopathic BMS, including irreversible processes. Treatment is aimed at management this disease as a type of chronic neuropathy. Investigated strategies include benzodiazepines, antidepressants, topical capsaicin, alpha-lipoic acid, hormone replacement therapy, anticonvulsants, biofeedback technique to modify parafunctional habits, and psychosocial therapies. [35]. As an adjunctive therapy method, acupuncture is referred to in the art as being beneficial for the relief of symptoms in patients with BMS [36]. When evidence of a psychogenic pain component is detected, specialists should also provide patients with adequate psychological support. This preliminary counseling, in fact, can have a great impact on the patients’ attitude and may often result in long-term beneficial effects [37].

For now, BMS remains a challenging medical condition to treat, and further research is required to determine the true efficacy of current management strategies for patients with this disorder. Future blinded randomized control trials with large sample size are necessary to provide new insight for use of various treatment modalities in BMS [34].

7 PROGNOSIS

There is no precise information pertaining to the natural history of BMS. However, it is known that improvement may occur within 6–7 years of onset in one-half to two thirds of patients. [20-38-39]. A recent retrospective study assessing 53 people with burning mouth syndrome (48 women and 5 men, mean duration of burning mouth syndrome 5.5 years) found a complete spontaneous resolution of oral symptoms in 11% of people who received no treatment. Overall, 30% of people experienced a moderate improvement, with or without treatment [40].

8 CONCLUSION

BMS is a chronic pain condition. It can be present over a number of years, but can also have remission periods. The complex and multifactorial etiology of BMS necessitates systematic and interdisciplinary approach for the proper management of these patients. A thorough understanding of the etiology and psychological impact of this disorder, combined with novel pharmacological interventions is required for better management. However, patients may have improvement of their pain. It is important to reassure the patients that BMS is not a part of a serious disease. Patients may require help from clinical psychologists to learn coping mechanisms

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