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Burning Mouth Syndrome- A Review

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Abstract

The term 'burning mouth syndrome' (BMS) refers to a chronic oral burning pain, diagnosed in the absence of any visible mucosal abnormality or other organic disease. The challenge is the initial recognition of the condition by clinicians. The second challenge is that psychogenic factors are a probable cause in the majority of cases and the complexities of such morbidity represents an area in which many clinicians do not have a comfortable awareness. BMS therefore presents as an idiopathic condition distinct from the symptom of oral burning that can potentially arise from various local/systemic pathologies and these must be excluded prior to its diagnosis. Within this later group are precipitating factors including nutritional deficiencies, hormonal changes associated with menopause, local oral infections, denture-related lesions, Xerostomia, hypersensitivity reactions, medications and a number of systemic conditions

including diabetes mellitus. Many systemic and local disorders can cause a burning sensation localized at the oral mucosa, but 'true' idiopathic. This article focuses on review of burning mouth syndrome.

Introduction

BMS is defined as a burning pain in the tongue or other oral mucosal membrane in absence of clinical and laboratory abnormalities. Burning mouth syndrome (BMS) is defined by the International Association for the Study of Pain as burning pain in the tongue or other oral mucous membrane associated with normal signs and laboratory finding lasting at least 4 to 6 months[1,2].These definitions and classifications show the difficulty for the patient and the practitioner evaluating these individuals, the patient is experiencing continuous burning pain in the mouth without any obvious clinical signs, but the practitioner is unable to definitively diagnose these symptoms even with the use of diagnostic testing or imaging.

Etiology

The cause of BMS is currently unknown. The etiology is presumed to be multifactorial involving the interaction between biologic (neurophysiologic mechanisms) and psychologic factors. There are a number of possible local and systemic causes of burning mouth syndrome, including[2] (Table 1 & 2)

Table - 1

LOCAL	
1. Denture factors 2. Dental treatment 3. Mechanical factors 4. Parafunctional habits	• Clenching • Bruxism • Tongue posturing • Myofascial pain 5. Allergic contact stomatitis 6. Neurologic 7. Infection 8. Hyposalivation

Table – 2

SYSTEMIC	
1. Deficiencies • Iron (anemia) • Vitamin B_{12} • Folate • Zinc • B complex vitamins 2. Endocrine • Diabetes • Thyroid disease • Menopause • Hormonal deficiencies 3. Hyposalivation	• Connective tissue disease • Sjogren syndrome • Sicca syndrome • Drug-induced • Anxiety or stess 4. Medication • Angiotensin converting enzyme (ACE) inhibitors • Antihyperglycemic 5. Psychologic • Depression • Anxiety • Obsessive compulsive disorder • Somatoform disorder • Cancerphobia • Psychosocial stressors

Classification:

There have been several proposed classification schemes to better characterize and define BMS. One such classification contains three subtypes according to variations in pain intensity over 24 hours.

Type 1 is characterized by patients having burning every day. The burning is absent on waking but presents as the day goes on being maximal in the evening. This type may be linked to systemic disorders, such as nutritional deficiencies and endocrine disorders. Approximately 35% of patients who have BMS give such a history.

Type 2 is characterized by burning that occurs every day is present on awakening and often makes falling asleep at night difficult. This subgroup of patients often report mood changes alterations in eating habits and decreased desire to socialize which seem to be attributable to an altered sleep pattern. Approximately 55% of patients who have BMS describe such a history.

Type 3is characterized by intermittent burning, present only on some days with burning affecting unusual sites, such as the floor of the mouth, buccal mucosa and throat. These patients frequently display anxiety and allergic reactions, particularly to food additives. About 10% of patients who have BMS report this pattern of symptoms. This classification is not universally accepted, however, nor is it considered essential for management of the patient who has BMS[2].

Symptomatology

Most individuals who have moderate to severe burning in the mouth is the main symptom of BMS and can persist for months or years. For many people, the burning sensation begins in late morning, builds to a peak by evening, and often subsides at night. Some feel constant pain; for others, pain comes and goes. Anxiety and depression are common in people with burning mouth syndrome and may result from their chronic pain.

Other symptoms of BMS include:

- tingling or numbness on the tip of the tongue or in the mouth
- bitter or metallic changes in taste
- Dry or sore mouth.
- pain
- Xerostomia
- dysgeusia

Physicial examination

In true (idiopathic) burning mouth syndrome (BMS), no clinically evident lesions should be in the oral cavity, including the most symptomatic areas. A thorough examination should be conducted to investigate alternate diagnoses.[4]

Head and neck examination

Oral inspection may identify any areas of atrophy erythema, leukoplakia, erosion, or ulceration bimanual

palpation of the tongue, tonsils, and floor of the mouth aid in evaluating deep tissues for masses or infections.

- Dental examination may reveal damage to enamel or worn teeth (a sign of bruxism/clenching) or protrusion of the front teeth/malocclusion (a sign of tongue thrusting).
- Palpation of the jaw, muscles of mastication, neck, shoulder, and suprahyoid muscles for tenderness suggests temporomandibular joint disorder or bruxism.
- Palpation for submental, submandibular, cervical, and supra/infraclavicular lymphadenopathy may identify signs of possible infection or neoplasm.
- Palpation of the thyroid gland may suggest thyroid disease.

Other

- Examination of the skin and nails may indicate possible nutritional deficiencies.
- Examination of the joints and skin may suggest connective tissue diseases.

A complete neurologic examination with particular attention to sensory disturbances may be supportive of a systemic disorder, such as diabetes or B12 deficiency[4].

Diagnosis

The apparent variety of factors associated with BMS and its complex presentation in many patients highlights the difficulties inherent in management. The common denominator is time and this crosses the boundaries of work up, treatment, reassessment and the overall clinical course: (1) a detailed history similar to that for any pain complex; (2) a detailed clinical examination; (.!) the positive elimination of organic disease: (4) a detailed discussion with the patient; (5) patient acceptance of the diagnosis; (6) patient acceptance of a psychogenic component; (7) confirmation of the diagnosis (TABLE 3) (8) ongoing management and maintenance: and (9) referral at any stage for further assessment and treatment.[2]

Table 3

Clinical tests for burning mouth syndrome	
Hematologic tests: • Complete blood count/differential • Glucose • Thyroid studies • Nutritional factors, • Autoimmune panel Oral cultures: fungal, viral, or bacterial if • Infections suspected Imaging: • MRI, CT scans, and nuclear medicine, if deemed necessary to rule • out systemic considerations • Gastric reflux studies	• Suspected Allergy testing if needed, especially fora dental panel and allergens • Trial of discontinuation of certain medications, including ACE • inhibitors • Psychometric tests: SCL- 90R, MPI, Hospital Anxiety and Depression • Scale, and Beck Depression Inventory • Salivary flow rates for whole unstimulated (0.3-0.4 g/min) and o Stimulated (0.75-2.0 g/min) saliva • Salivary uptake scans if low salivary flow rates and Sjogren syndrome

Imaging

Imaging is rarely indicated but may be useful to identify specific causes of secondary burning mouth syndrome (BMS), as follows:

- CT scans of the head may be useful if a mass lesion is suspected.

MRI of the head, brain, and/or spinal cord may assist in diagnosing mass lesions

Other Diagnostic Test and Procedure[2]

The patient's history and examination should direct the use of the following tests (Table 4):

Table 4

• Bacterial culture (especially anaerobes) • KOH of lingual scraping • Fungal culture • Biopsy of tongue or mucosa • Sialometry • Schirmer's test • Laryngoscopy or endoscopy if reflux is suspected. • Lumbar puncture with gel electrophoresis • Patch testing for methylmethacrylate mercury, cobalt chloride, benzoyl peroxide, petrolatum cadmium sulfate, octyl gallate, benzoic acid, propylene glycol, peanuts, chestnuts, cinnamon, sorbic acid, and nicotinic acid among others. • (either neoplastic or infectious) or neuropathies such as multiple sclerosis.

Management of patients with BMS

BMS is usually multifactorial, and these patients require an organized approach to take the various etiologies into account. The history of pain should be established, including duration, intensity (on a 1 to 10 scale), site, and factors that improve or worsen the pain. Inquiries should also be made about increased salivation, dry mouth, altered taste, the diet, the use or oral antiseptics, the type of toothpaste, habits such as chewing gum, smoking, and taking alcoholic beverages. Other information includes any relation between pain and the use of dental fixtures and prostheses, parafunctional behavior (bruxism, tongue compression between teeth), and the use of medication and its xerostomia causing potential. A psychological history is also extremely relevant, including questions about anxiety, depression and cancerphobia. A dental evaluation should also be done to recommend improved dental care and adequate use of dental fixtures.

The following treatments **for primary burning mouth syndrome** (BMS) have been suggested with variable evidence to support their use (Table 5).[5]

Table 5

Clonazepam (low-dose) dissolvable wafers (may be better than tablets)
Alpha lipoic acid
Intermittent oral capsaicin
Psychotherapy (cognitive behavioral modification, relaxation)
Topical capsaicin
Hormone replacement therapy
SSRIs
Tricyclic antidepressants
Oral lidocaine
Near infrared irradiation of the stellate ganglion, to inhibit sympathetic discharge and improve blood flow to the tongue in glossodynia (still experimental)
Laser therapy
Topiramate
Olanzapine

Treatments for **secondary burning mouth syndrome (BMS**) include the following[6,7] **(Table 6)**:

Table 6

• Discontinuation of medications that may cause xerostomia, such as anticholinergics or psychotropics
• Substitution of medications that may cause oral burning (If an ACE inhibitor, ARB, or antiretroviral is suspected, trying another medication in the same class is reasonable.)
• Adjustment of levothyroxine dosing
• Oral nystatin
• Abstinence from smoking and oral tobacco use
• Avoidance of allergens
• Adjustment of dentures (refitting and/or substituting materials)
• Chewing sorbitol-containing gum to stimulate saliva
• Pyridostigmine, Pilocarpine, or other sialogogues
• B vitamin supplementation
• Iron supplementation
• Folate supplementation
• Neuropathic analgesics

Medications[6] **(Table 7)**:

Table 7

Clonazepam
Diazepam
Amitriptyline
Nortriptyline
Doxepin
Fluoxetine
Paroxetine
Sertraline
Chlordiazepoxide
Capsaicin
Olanzapine
Topiramate

Conclusion

Burning mouth syndrome remains a fascinating though poorly understood, condition in the field of Oral medicine & Diagnosis and Management of BMS is not a easy task. There is only a little evidence based material to assist the practitioner when dealing with these individuals. Complaint of patient represents chronic pain condition where in medical management is indicated. It is wise for us, being oral medicine practitioner to diagnose and assist in the management of this complex patient.

Reference

[1]. Eduardo Chimenos Küstner , Maria Sueli Marques Soares, Burning mouth and saliva. Medicina Oral 2002; 7: 244-53.

[2]. Scala, L. Checchi, M. Montevecchi, I. Marini. Update on burning mouth syndrome : overview and patient

management. Crit Rev Oral Biol Med 14(4):275-291 (2003).

[3]. Buchanan J, Zakrzewska J. Burning Mouth Syndrome. Clinical Evidence Issue 4 Dec. 2000; p 753–757.

[4]. S Teven A, M Iyamoto and V Incent B, Z Iccardi. Burning Mouth Syndrome. Oct/nov 1998 number 5 & 6 volume 65:343-347.

[5]. Mínguez-Serra MP, Salort-Llorca C, Silvestre-Donat FJ. Pharmacological treatment of burning mouth syndrome: A review and update. MedOral Patol Oral Cir Bucal 2007;12:E299-304.

[6]. Salort-Llorca C, Mínguez-Serra MP, Silvestre FJ. Drug-induced burning mouth syndrome: a new etiological diagnosis. Med Oral Patol Oral CirBucal. 2008 Mar1;13(3):E167-70.

[7]. Daniel Charland, Andrew Heinola, Anita Luk. Burning Issues in the Treatment of Burning Mouth Syndrome: An Evidence Based Study of the Literature.