Case Report
DOI: 10.22037/jds.v39i1.34871 ISSN 2645-4351

Burning Mouth Syndrome in a Medically Compromised Geriatric Patient: A Case Report and Review of Literature

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(*Submitted: 15 May 2021 – Revised version received: 7 September 2021 – Accepted: 9 October 2021– Published online: Winter 2022*)

Objectives Burning mouth syndrome (BMS) is defined as "intra-oral burning or dysesthetic sensation, recurring daily for more than 2 hours per day for more than 3 months, without clinically evident causative lesions". It can be associated with related symptoms, such as dry mouth and dysgeusia. The etiology of BMS remains unknown, although a number of local, systemic and psychological factors have been proposed as being of etiopathogenic importance.
Case A 55-year-old male patient reported with a complaint of burning sensation in the roof of mouth and tongue for the past 4 months. The patient was under anti-hypertensives and anti-coagulants for the past 4 years and also had moderate reflux esophagitis. Intraoral examination revealed generalized pallor involving the dorsal surface of the tongue and the palatal mucosa, and diminished salivary flow. When tested for unstimulated salivary flow rate, it was < 0.5 mL/min.
Conclusion All the laboratory results were within normal limits. After careful assessment and counselling, he was referred to a gastroenterologist for further treatment and was reassured that the burning sensation he had felt was associated with his gastric issues.
Keywords Burning Mouth Syndrome; Gastroesophageal Reflux; Xerostomia; Dysgeusia

Introduction

Burning mouth syndrome (BMS) is defined as "intra-oral burning or dysesthetic sensation, recurring daily for more than 2 hours per day for more than 3 months, without clinically evident causative lesions".[1] It is also known as burning tongue syndrome, glossodynia, glossopyrosis, and stomatopyrosis. It is a chronic idiopathic condition, in which a burning pain is experienced in the tongue or in the oral mucous membranes. It can be associated with related symptoms, such as xerostomia (dryness of the mouth) and dysgeusia (altered taste perception or a persistent bitter or metallic taste).[2]

The etiology of BMS remains unknown, although a number of local, systemic and psychological factors have been proposed as being of etiopathogenic importance.[3] There is no universally accepted classification system for idiopathic BMS. BMS has been classified into two categories: primary or essential/idiopathic BMS and secondary BMS. The primary type refers to cases where the local or systemic causes cannot be identified, and involves peripheral or central neuropathological pathways. The secondary type is associated with local, systemic or psychological factors.[4] Lamey and Lewis classified BMS into type 1 BMS, associated with systemic diseases such as nutritional deficiencies, diabetes mellitus, etc., type 2 associated with psychological disorders, and type 3 BMS related to allergic reactions or local factors.[5] The usefulness of this classification system is primarily related to the correlation of the diagnosis with patient prognosis. It seemed that patients suffering from type 2 were more resistant to different types of treatments. Herein, we report a case of BMS caused due to an underlying gastroesophageal reflux disease (GERD) and explain the importance of treating the underlying condition.

Case Report

A 55-year-old male patient reported with a complaint of burning sensation in the roof of his mouth and his tongue for the past 1 month. History revealed a mild burning sensation associated with dry mouth for the past one month with a history of difficulty in swallowing. Medical history revealed that the patient was under anti-hypertensives and anti-coagulants for the past 4 years. He had also consulted a general physician for recurrent heartburns, which revealed to be moderate reflux esophagitis and was prescribed 20 mg omeprazole twice daily and was suggested a gastroscopy. However, the patient did not opt for it. After taking medication, the heartburn had subsided. He discontinued the medication after his symptoms alleviated. Two weeks later, he reported to our clinic with a burning sensation in his palate and dorsum of the tongue. On intraoral examination, there was generalized pallor involving the dorsal surface of the tongue (Figure 1) and the palatal mucosa (Figure 2). The salivary flow was diminished

(sticking of mouth mirror to the buccal mucosa), suggestive of xerostomia. When tested for unstimulated salivary flow rate, it was <0.5 mL/min. Routine laboratory tests including complete blood count and liver function tests were all within the normal limits. He was prescribed lycopene and after considering his history he was counselled regarding his GERD which he had left untreated, and was referred to his gastroenterologist and was strongly advised to undergo a gastroscopy to evaluate his GERD. After careful assessment and counselling, he was referred to a gastroenterologist for further treatment and was reassured that the burning sensation he had felt was associated with his gastric issues.

Figure 1a and b: Dorsum of the tongue

Figure 2: Palate

Discussion

The frequency of BMS increases with age in both women and men, and is the highest in women aged 60-69 years[6-7], probably due to biological, sociocultural, and psychological factors. In our case, the patient was a 55-year-old male who was under medication for hypertension and on anti-coagulants.

The anterior part of the tongue is most commonly affected, followed by the labial mucosa and occasionally the palate. The burning pain is often accompanied by tingling or numbness and the sensation of dryness of the mouth.[8] In our case, the patient experienced burning sensation in the dorsum of the tongue and the palate with dryness of the mouth.

Its etiology is multifactorial involving various local, systemic, and psychogenic causes. Female gender, peri- and post-menopausal women, depression and anxiety, Parkinson's disease, and chronic medical conditions including gastrointestinal and urogenital diseases are risk factors for developing BMS.[9] The main symptoms commonly seen in patients with BMS include pain in the oral mucosa: burning, scalding, tingling, numb feeling, stinging sensation in the oral cavity, dysgeusia (altered taste perception), and xerostomia. Other associated symptoms include thirst, headache, pain in the temporomandibular joint, and tenderness/pain in the masticatory and neck muscles, shoulder, and suprahyoid muscles. In our case, the patient presented with a burning sensation and resorted to symptomatic relief with medications rather than treating the underlying problem (GERD).

BMS is an important clinical condition with aggravating symptoms, directly and indirectly impacting the quality of life, which often places a recognizable burden on the patient and health care system. Clinical consultations with a practicing gastroenterologist are common practice in today's medicine for patients with BMS. This review focuses on various aspects of BMS, including its epidemiology, pathophysiology, etiology, clinical presentation, differential diagnosis, classification, clinical diagnosis, current treatment, and general prognosis.

When diagnosing BMS[9], it is imperative to take a thorough medical and social history. A thorough clinical examination of oral mucosa should be done to rule out local and systemic causes.[10] Also, measurement of salivary flow rate and assessment of taste function are imperative.

The diagnostic criteria developed by Scala et al., for the diagnosis of BMS are as follows.[11]

Fundamental criteria

1. Daily deep bilateral burning sensation of oral mucosa
2. Burning sensation for at least 4-6 months
3. Constant intensity or increasing intensity during the day
4. No worsening on eating or drinking
5. Not interfering with sleep

Additional criteria

1. Dysgeusia and/or xerostomia
2. Sensory or chemosensory alterations
3. Mood swings or psychopathological changes

Pain that gets worse over the day, decreased pain on eating and with sleep, absence of clinical findings, abnormal tastes (usually metallic, bitter or sour) or dysgeusia, and complaint of dry mouth in presence of

normal saliva flow are other findings which help in diagnosis of BMS.[11] The etiology of BMS necessitates systematic and interdisciplinary approaches for proper management of such patients. Although many drugs and treatment methods have been proposed for management of BMS, none of them proves to be a gold standard and is not satisfactory enough. The administered treatment remains empirical and largely based on personal and physician's opinions. Treatment planning should be tailored for each patient. Making the correct clinical diagnosis of BMS is of paramount importance for its management. Patients should be informed that BMS is a complex disorder for which there is no exact cure and treatment is purely symptomatic, and therefore expectations of the outcome of treatment should not be unrealistic.[12] It is crucial that the patient understands the diagnosis and has a realistic understanding of the likelihood of being cured. These have a great impact on patient's attitude and may often result in long-term beneficial effects.[13]

GERD is a common condition characterized by the reflux of gastric contents into the esophagus. According to the International Consensus of the Montreal, GERD is defined as "the condition that develops when the retrograde passage of gastric contents causes troublesome symptoms and/or complications that result in an impairment of the quality of life of these patients".[14]

Since BMS is a multifactorial disease, no single drug or treatment procedure can result in complete remission of all symptoms. The management can be broadly administered through topical or systemic medications and behavioral interactions. Medications used for BMS include antidepressants, analgesics, antiepileptics, antifungals, antibacterial agents, sialagogues, antihistamines, anxiolytics, antipsychotics, vitamins and minerals.

Topical medications:

Topical application of capsaicin (0.025%) as a desensitizing agent inhibits substance P.[15] Oral rinse with 0.15% benzydamine hydrochloride, tabasco sauce with water, and pepper have proven to be effective, but with inconsistent results.[16] Topical application of clonazepam (by sucking a tablet of 1 mg) for 14 days has also provided relief.[17]

The most commonly used local anesthetic agent, lidocaine, was not shown to be effective due to its short duration of action. Topical application of 0.5 mL Aloe Vera gel at 70% concentration 3 times a day combined with tongue protector was found to be effective for reducing the burning and pain sensation of the tongue.[18]

Systemic medications:

Tricyclic antidepressants such as amitriptyline, desipramine, imipramine, clomipramine and nortriptyline (starting dose of 5-10 mg/day and gradually increasing to 50 mg/day) are useful in treating BMS. Some authors contraindicate these drugs in patients with xerostomia. Selective serotonin reuptake inhibitor antidepressants like sertraline (50 mg/day), and paroxetine (20 mg/day) for 8 weeks, and duloxetine at a dose of 30-60 mg/day, a dual action antidepressant that inhibits both serotonin and noradrenaline result in significant improvement of oral burning sensation.[19]

Alpha-lipoic acid (600 mg/day) with gastric protection, either alone or in combination for 2 months, acts as an antioxidant and a powerful neuroprotective agent that prevents nerve damage by free radicals, regenerating other antioxidants such as vitamin C and E, and can increase the intracellular levels of glutathione, thereby significantly decreases the symptoms in patients with dysgeusia.[20]

Systemic capsaicin (0.25% capsules) has proven to be effective in reducing the pain intensity. Benzodiazepines such as alprazolam (0.25 mg to 2 mg/day) may be useful in patients with anxiety. Supplementation with vitamin BC capsules, B12, folic acid and minerals like iron, and zinc can significantly lower the mean serum homocysteine level and boost up the blood hemoglobin level with reported complete remission of oral symptoms.[21]

Psychological counselling and reassurance can be an effective treatment for BMS. In 24% of patients, there was a reduction of symptoms and an improvement of psychological status with only behavioral therapy. It was successful in the present case as well [22] where GERD was mimicking BMS. These patients are often referred to gastroenterology clinics with a suspected diagnosis of GERD, due to burning quality of pain. However, GERD can be differentiated from BMS due to the intermittent nature of the symptoms in GERD. A detailed history, including past medical history, current medications, previous dental procedures, and use of dental prosthetics should be elicited. Additionally, particular attention should be paid to symptoms of anxiety and depression, given their association with idiopathic BMS.

Conclusion

The etiopathogenesis of BMS seems to be complex. Diagnosis and management of BMS are not easy for oral healthcare professionals. A thorough understanding of the etiology and psychological impact of this disorder, combined with novel pharmacological interventions is required for better management. The clinically normal appearance of the oral mucosa, which contrasts with patients' pronounced complaints, and the time criterion constitute important factors in differential

diagnosis. In all cases, a modern interdisciplinary approach is needed to solve the diagnostic dilemmas of BMS.

Conflict of Interest

No Conflict of Interest Declared ■

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How to cite:
Shunmugavelu K, Ramya V , Vijayakumar V, Manda Balaji S, Cynthiad E, Hashire S, Mukundan RN. Burning Mouth Syndrome in a Medically Compromised Geriatric Patient: A Case Report and Review of Literature. J Dent Sch 2021;39(1):33-36.