

CASE REPORT



Burning mouth syndrome: A case report

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Abstract

Burning mouth syndrome (BMS) or oral dysesthesia syndrome causes chronic pain in the orofacial region without any detectable causes. The most commonly manifested clinical features are xerostomia, burning sensation in the mouth, and dysgeusia. These manifestations ideally show a diurnal pattern, in which they are less in the morning and worsen as the day progresses and classically subside at the night time. BMS has multifactorial etiology. This report describes a case of BMS in a 35-year-old female patient.

Introduction

The burning mouth syndrome (BMS) is often characterized by burning, itching, and/or stinging in the oral cavity without any obvious etiology. It usually persists for at least 4–6 months. The most commonly involved sites are the tongue, lips, and oral mucosa. BMS is often accompanied by xerostomia, resulting in multiple carious teeth and dysgeusia. The onset of BMS is often spontaneous. Most commonly, the peri-/postmenopausal women has a predisposition. The other etiologies of BMS is seen to be associated with a large variety of conditions such as oral infections, thyroid disease, drug use, psychiatric illnesses, dental treatment, vitamin/mineral deficiencies, and others.^[1,2] Many oral sites can be affected such as the tongue, lips, and palate. The tongue is the most common site in the oral cavity.^[3] The clinical treatment is usually complex since there is no uniform management protocol. In all the cases of BMS, both the physiological and psychological symptom components should be addressed. The acceptance of psychological factors by the patient is an important aspect of treatment for BMS, but, in clinical condition, this in itself may present a challenging situation.^[4]

Here, we are reporting a case of the BMS in a 35-year-old female patient.

Case Report

A 35-year-old female patient [Figure 1] reported with a complaint of burning sensation in the mouth for 1 month and multiple decayed teeth in the upper front tooth region for 6 months. A history of burning sensation with dry mouth was present. The patient also gave a history of difficulty in swallowing. General physical examination revealed pallor on the nail beds and lower palpebral conjunctiva. Extraoral examination revealed bilateral crustation on the angle of the mouth, suggestive of angular cheilitis [Figures 2 and 3]. On intraoral examination, there was generalized pallor involving labial and buccal mucosa, palatal mucosa, and dorsal surface of the tongue [Figure 4].

The salivary flow was diminished (sticking of mouth mirror on the buccal mucosa), suggestive of xerostomia. Depapillation of the tongue was also evident. On hard tissue examination, there was the presence of deeply carious teeth in relation to 11, 12, 21, 22, and 45 multiple root stumps in relation of 13, 14, 17, 23, 25, 26, 34, 35, 36, 37, and 47, and the missing teeth were 24 and 46 [Figure 4]. The provisional diagnosis of BMS was given and the differential diagnosis of iron deficiency anemia and Plummer–Vinson syndrome was given. The patient was advised for complete blood count and hemogram. The hematological report revealed the results given in Table 1.



Figure 1: Front profile of the patient



Figure 3: Angular cheilitis on the left corner of the mouth



Figure 2: Angular cheilitis on the right corner of the mouth



Figure 4: Intraoral picture showing pale oral mucosa, multiple carious teeth, and depapillated tongue

The hemoglobin percentage was very low (6.4%). Red blood cells count, red cell indices, and hematocrit were also low. The final diagnosis of BMS secondary to iron deficiency anemia was given.

Discussion

The BMS was first described in the mid of 19th century, and it was further characterized in the early 20th century by Butlin and Oppenheim as glossodynia. Later, BMS has been referred to as sore tongue, glossopyrosis, stomatodynia, oral dysesthesia, and stomatopyrosis. It was first categorized in 2004 by the International Headache Society as a distinct disease and defined primary BMS as “intraoral burning sensation in patient for which no other medical or dental cause is present.” The recent diagnostic features consist of daily burning sensation or persistent pain in the mouth having clinically normal oral mucosa after excluding the other local and systemic diseases.

When there is a burning sensation in the oral cavity without any abnormality in the oral mucosa, then these burning

sensations are termed as BMS. Various sites in the oral cavity can be affected and the most common site is the tongue.

The intensity of the burning sensation can vary in a day from moderate to severe.^[5] BMS is generally classified under the idiopathic oral dysesthesia and is usually associated with the chronic orofacial pain and disturbance in oral sensation.

In most of the patients, the pain is spontaneous in onset, without any identifiable precipitating factor, and approximately one-third of patients has the time of onset due to other reasons such as a recent illness, dental procedure, or medication course (including antibiotic therapy).^[6,7]

Possible relationship between BMS and taste activity had been shown by recent studies. It is important to rule out the psychiatric aspect of BMS. BMS is also related to the depression, mood swings, increased anxiety, and emotional instability. The most common diagnosis which is related to BMS is depression, followed by the anxiety disorders and sleep disorders. These conditions act as triggering factors of symptoms of the BMS.^[8] Approximately 90% of female patients in BMS in various research

Table 1: Hematological report of the patient

| Parameter | Test result | Biological reference range |
|----------------------|--------------------|----------------------------|
| Complete blood count | | |
| RBC count | 4.0 millions/cumm | 3.8–5.0 millions/cumm |
| Total WBC count | 5400 cells/cumm | 4000–11,000 cells/cumm |
| Platelet count | 374,000 cells/cumm | 150,000–400,000 cells/cumm |
| Hb | 6.4 g/dl | 11.7–15.5 g/dl |
| HCT | 23.6% | 35–45% |
| Red cell indices | | |
| MCV | 57.7 fl | 81–100 fl |
| MCH | 15.6 pg | 27–34 pg |
| MCHC | 27.1 g/dl | 31–36 g/dl |
| Differential count | | |
| Neutrophils | 52% | 40–75% |
| Lymphocytes | 38% | 20–50% |
| Monocytes | 04% | 02–10% |
| Eosinophils | 06% | 01–06% |
| Basophils | 00% | 00–01% |

HCT: Hematocrit, Hb: Hemoglobin, WBC: White blood cell, RBC: Red blood cells, MCH: Mean corpuscular hemoglobin, MCHC: Mean corpuscular hemoglobin concentration, MCV: Mean cell volume

studies have been postmenopausal. In these patients, systemic and topical hormonal replacement therapy has been found to be ineffective.^[9,10]

Classification

Based on etiologies

1. Primary type: Idiopathic, non-neuropathic BMS.
2. Secondary: Burning mouth sensations are associated with established organic/therapeutic related etiologies (e.g., oral cavity disorders, including oral local neuropathy, nutritional deficiencies, systemic disorders, and drug-induced, psychiatric, and neurological abnormalities).^[11,12]

Based on the daily variation of the symptoms

1. Type 1 BMS (35%): Characterized by daily pain that is not present on awakening but progresses throughout the day with the greatest problems occurring in the evening hours.
2. Type 2 BMS (55%) patients awake with a constant daily pain.
3. Type 3 BMS (10%) patients have intermittent pain with symptom-free intervals and the pain occurs in unusual sites, such as the buccal mucosa, floor of mouth, and throat.^[13]

The diagnosis of the BMS is mainly based on the detailed history of the patient and clinical features such as sudden or intermittent pain; there is an increase in pain sensation during day, bilateral pain, decrease in pain sensation with eating or sleeping, and more importantly the presence of normal laboratory findings. No single uniformly effective management for BMS is available. These patients are generally under medications for

depression, chronic pain, benzodiazepines, and several other local and systemic therapies.

Conclusion

BMS is an oral dysesthesia condition occurring mostly in females, and it is mostly a complicated condition to treat.^[14] There are various etiologies which are complex and interact with each other, which have been put forward for this condition, among which the psychological features is a prime cause. There is still a lack in the standard management protocol to treat such patients. Both psychological and physiological aspects must be kept in mind and considered as a possibility. Dental practitioners should understand the manifestation and etiology in primitive stage to manage the patient effectively.

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