



## Burning mouth syndrome in Iraqi patients: a preliminary study of 38 cases.

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### Abstract

The complain of burning sensation in the mouth can be said to be a symptom of other disease or a syndrome in its own right of unknown etiology. In patients where no underlying dental or medical causes are identified and no oral signs are found, the term burning mouth syndrome should be used.

To obtain base line information on the prevalence of the oral problems and clinical features co-existing with burning mouth syndrome patients.

The study group consisted of 38 (11 males and 27 females) burning mouth patients, they were examined to evaluate the oral health status.

Of 38 patients, who verbalized their complaints, 63.1% complained of subjective oral dryness, 26.3% had taste disturbances; the most prevalent site with burning sensations was the tongue 65.7%.

Burning mouth syndrome patients in our environment are principally women, other symptoms include dryness and altered taste is common in those patients.

### Introduction

Burning mouth syndrome (BMS) is a complex, vexing condition in which a burning pain occurs, involve tongue, lip or widespread areas of whole mouth, without any obvious lesion<sup>(1)</sup>. It is characterized by both positive (burning pain, dysgeusia and dyesthesia) and negative (loss of taste and paraesthesia) sensory symptoms involving the lip and tongue, mainly the tip and anterior two-third<sup>(2)</sup>.

The exact cause of BMS often is difficult to pinpoint. The disorder has long been linked to a variety of other conditions<sup>(2, 3, 4, 5)</sup>:

Systemic factors such as nutritional deficiencies, diabetes, miscellaneous conditions such as psychogenic factors play great role<sup>(6, 7, 8, 9)</sup>.

Dental work and hypersensitive reaction mercury, denture or dental

components as etiologic factors must be considered also<sup>(10, 11, 12, 13)</sup>.

Some researchers also have suggested dysfunction in the nerve applying the mouth and tongue as a possible cause<sup>(14)</sup>.

A new interesting association have recently emerged between oral neuropathy and/or neurological transduction interruption induced by salivary compositional alteration and BMS<sup>(8, 15, 16)</sup>.

Candidiasis, geographic tongue, mucocutaneous conditions and stomatitis can cause mouth burns with visible changes to the oral mucosa<sup>(17, 18, 19, 20)</sup>.

The disorder has long been associated with a variety of other conditions including changes salivary flow<sup>(17, 21, 22, 23, 24)</sup>, as well as a

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probable alteration in taste<sup>(1, 4, 25, 26, 27, 28)</sup>.

The goal of this study is to provide an overview on the most important clinical symptoms and features co-existing with BMS in our environment.

## Materials & Methods

The study sample consisted of 38 patients of both sexes with age range from (20-80), referred to the College of Dentistry, University of Baghdad from November 2005 to September 2006, complaining from BMS.

The method of assessment followed closely a strictly coordinated management protocol based on conventional guidelines. A detailed history was taken of, duration of condition, site affected, severity, smoking, altered taste, the possible associations of the onset of burning sensation and the age of onset.

All patients were examined by the author under standardized conditions for oral mucosal lesions.

The patients were divided into subtypes according to Lamey et al<sup>(29)</sup>.

Type 1: Daily pain, not present upon a wakening, worsens as the day progresses (Non- Psychiatric).

Type 2: Constant pain (Psychiatric, chronic anxiety).

Type 3: Intermittent pain in unusual site (floor of mouth) usually association with allergic, contact stomatitis due to preserving agents and additives.

The following questions have been shown to help to identify people with, or at risk of developing salivary gland hypofunction.

- Does the amount of saliva in your mouth seem to be too little, too much or you do not notice it?
- Do you have any difficulties swallowing?

- Does your mouth feel dry when eating a meal?
- Do you slip liquids to aid in swallowing dry food? (Mahvash-2003)<sup>(30)</sup>.

## Results

Of 38 patients who verbalized their complaints, there was 11 (28.9%) males and 27 (71.0%) females, the mean age of the total sample was 52.9 years (mean age for males was 44.2 and for females 56.4 years).

Table-1, shows the age distribution by sex of the total sample, the sex predilection of BMS was in females in all age groups, except in (31-40) where there was a male predilection. A statistically significant relationship was found between the BMS and age of the patient.

The mean age of the onset of males was 43.1 years while females 42.8 years and 42.9 years for the total BMS patients.

The BMS group was subdivided according to the severity of the burning sensation. Type 1, 7 (18.4%) defined by daily pain where symptoms are absent upon a wakening but gradually increase in severity as the day progresses. Type 2, 18 (47.3%) is defined by constant pain day and night, these patients are very anxious. Type 3, 13 (34.2%) is defined by intermittent pain, with pain free intervals occurring in non-usual site such as the floor of the mouth and the posterior or pharynx (Table-2).

The BMS group was subdivided according to the anatomic site of burning sensation, sub group A (25 patients) with complaint limited to the tongue, and sub group B (13 patients) with burning sensation in other part of oral mucosa with statistically significant difference was detected (Table-3).

Regarding smoking associated with BMS problem, Table-4 demonstrates the statistically significant relationship between smoking and BMS.

#### • Oral Complain

Dry mouth was the main oral symptom observed 24 (63.1%), taste disturbance observed in 10 (26.3%), 3 cases of halitosis was detected, only one case of cancer phobia was recorded, (Table-5).

For the majority of BMS subjects, the onset is usually spontaneous with no known precipitating factor 27 (77.1%), However, from 11 (28.9%) of subjects relate the onset to a previous illness (Table-6).

### Discussion

The clinical feature of BMS include burning pain which can be localized just to the tongue and/or lip but can be more wide-spread and involve the whole of the oral cavity.

Our study demonstrated that a significant relationship between the BMS and age, patients aged (61-70) were mostly affected, this agree with the finding of other researchers<sup>(13, 14, 31)</sup>, on the other hand Eli, et al<sup>(32)</sup> stated that BMS primarily affected middle age women, however hormonal changes or psychological disorder may explain our result.

The M/F ratio varied considerable from one study to another; these contradictory results may be largely due to the differences in the study groups. The present data demonstrated that female predominance was noted among Iraqi patients and this is similar to that reported by others<sup>(25, 33, 34)</sup>, however, other authors noted that sex does not make any difference<sup>(31)</sup>.

In an attempt to group different types of patients, divided the syndrome into three types, BMS patients mostly presents as type 2, this agree with the finding of Lamey et al<sup>(29)</sup>. However,

this focusing on the psychological aspects of patients with BMS.

The typical complaint of BMS is localized to the tongue, this agree with the work done by (Muzyka & Rosssi and Zegarella)<sup>(33, 35)</sup>, such result is in disagreement with the results obtained from other studies<sup>(31, 36, 37)</sup>, they found that lip is mostly affected by BMS.

The cigarettes smoked had a highly significant relationship on the BMS, the explanation offered that tobacco may have direct effect on BMS; however, this need further study in the future.

In spite of normal clinical appearance of the oral mucosa in BMS subjects, burning sensation do have demonstrated in such patients, the present result had also been reported by (Grushkaa & Sessle)<sup>(38)</sup>, however this could be explained by the fact that peripheral or central dysfunction of small apparent never fiber and the psychogenic origin may play a role.

This finding is rather surprising to what was reported by Tammiala – Salonen – T et al<sup>(39)</sup>, they found that half of BMS patients had some clinically observable oral mucosal lesions.

The most frequently described oral symptoms is subjective dry mouth. It is interesting that a diminished of saliva in BMS has been found by five other researchers<sup>(17, 21, 22, 23, 24)</sup>.

In order to throw light if the BMS has anything to do with the dry mouth, it is clear in a study of this nature a cause and effect relationship between BMS and dry mouth is not possible, this may require a retrospective study with longitudinal design.

Another symptoms associated with BMS include taste disturbance. However other studies<sup>(1, 4, 25, 26, 27, 28)</sup>, agreed on this fact they demonstrated that BMS patients report a persistently altered (metallic) or bitter test, this may related to the fact that BMS

altered the peripheral taste mechanisms or altered sensory processing which occur following the small fiber neuropathic changes in the future.

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Table-1- Distribution of the sample according to the gender and age group

Age Group	Male		Female		Total	
	n	%	n	%	N	%
20 – 30	1	9.09	2	7.41	3	7.89
31 – 40	4	36.4	2	7.41	6	15.8
41 – 50	1	9.09	4	14.8	5	13.2
51 – 60	2	18.2	5	15.5	7	18.4
61 – 70	3	27.3	9	33.3	12	31.6
71 – 80	0	0	5	18.5	5	13.2
Total	11	100	27	100	38	100

\*Chi – Square S

Table-2- Classification of BMS subtypes Lamey<sup>(29)</sup>.

Type	Clinical Finding	Association	N	%
Type 1	Daily pain, not present upon a wakening, worsens as the day progresses	Non-psychiatric	7	18.4
Type 2	Constant pain	Psychiatric, chronic anxiety	18	47.3
Type 3	Intermittent pain in unusual site (floor of mouth)	Allergic, Contact stomatitis due to preserving agents and additives	13	34.3

Table-3- Distribution of the sample according to location of burning

Sub group A BMS limited to the tongue		Sub group B BMS in other part of oral mucosa	
N	%	N	%
25	65.7	13	34.2
**Chi – Square HS			

\* Chi – Square  $M=7.195$ ,  $F=5.658$ , Total 6.788,  $P<0.01$

\*\* Chi – Square = 25.007 ,  $P<0.00$

Table-4- Distribution of the sample according to smoking

Cigarette Smoking		Non Cigarette Smoking	
N	%	N	%
27	71	11	28.98
*Chi – Square HS			

Table-5- Distribution of the sample according to oral symptoms

Oral Complain	Male		Female		Total	
	n	%	n	%	N	%
Dry mouth	8	72.7	16	59.2	24	63.1
Taste disturbance	2	18.1	8	29.6	10	26.3
Halitosis	1	9	2	7.4	3	7.8
Cancer phobia	0	0	1	3.7	1	2.6
Total	11	100	27	100	38	100

Table-6- Distribution of the sample according to the onset of pain

The onset of pain	N	%
Spontaneous	27	77.1
Pain due to precipitating factor	11	28.9

\* Chi – Square = 10.129 ,  $P<0.001$