RISK FACTORS OF BURNING MOUTH SYNDROME: UN UPDATE

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Abstract: Burning mouth syndrome has never been associated with a specific medical conditions, although associations were reported with a wide variety of health and chronic pain conditions. The painful mouth syndrome revealed the lack of specific criteria for diagnosis. Stomatodynia is characterized by the existence or coexistence of local, general and psychological etiologic factors. Local factors, the most frequently involved was candidiasis, incorrectly adjusted dentures, contact allergies and oral parafunctions. Among the general factors that recordered a higher frequency, we mention : menopause, diabetes, previous medications and iron deficiency anemia. Regarding the psychological factors, there were identified: stress, anxiety, depression, mental lability and mental disorders.

Key words: burning mouth syndrome, tongue pain, glossodynia, menopause, dry mouth.

INTRODUCTION

Burning mouth syndrome (BMS) is manifested in some patients gradually with increasing intensity of pain and other symptoms over time, and in others the onset is sudden and precipitate. Most patients can not identify a cause of disease and attributed the apparent onset of a previous dental procedures, systemic diseases or treatment with antibiotics. Thus, for some patients, neurological changes that are possible causative factor subsequent to viral infection, or a neurotoxic effect of local anesthetics. (1)

Due to difficulties in understanding the long-term pain induced by painful mouth syndrome and its complex clinical picture, there were suggested a large number of etiologies. Most studies suggest that oral burning is frequently accompanied by dry mouth and thirst (despite lack of evidence of decreased salivary flow in most patients), altered taste and additional allegations of pain, including facial pain and pain in other areas. (2)

Taste and pain are mediated by small diameter fibers, while salivary stimulation is controlled sympathetic and parasympathetic nervous system. An interesting aspect is that, while burning sensation and altered taste are reduced by food, rinse with an anesthetic solution increases oral pain and decreases changes of taste. (6)

Personality characteristics, including depression and anxiety are frequently reported in patients with BMS and may influence pain or may be secondary to chronic pain. The significance of diurnal variation of pain is unknown, but may be associated with postural changes in blood flow or changes in the central nervous system (CNS) during sleep. (4,7)

Although most patients can not identify an apparent cause of the disease onset, approximately 37% of patients, related symptoms to previous dental procedures, or treatments with antibiotics. Thus, for some patients, there is the
possibility that neurological changes can be the etiological factor, by virtue of viral infection, or the neurotoxic effect of local anesthetics. (5)

Interestingly, there is a large discrepancy between the severity and the patient accused disorders (painful subjective complaints) and the absence of clinical changes of oral mucosa.

Regarding the epidemiology of burning mouth syndrome is found that the epidemiological data are limited, which leads to lack of specific criteria for diagnosis. (8) However, the studies of population groups highlights the existence of this syndrome prevalence between 0.7% and 15%. It should be noted that numerous patients studies refers to BMS symptoms rather than painful mouth syndrome itself. (3,9)

**MATERIAL AND METHODS**

A group of 339 patients were examined and diagnosed with acute pain of the oral cavity, between 2008 – 2010. Evolution on the number of these patients was as follows : in 2008 we had a total of 142 patients, in 2009 were a total of 77 patients examined and in 2010 a total of 120. (fig. 1)

![Figure 1](chart.png)

In the group of patients analyzed, we identified the existence of 12 diseases of the oral mucosa. (fig.2)
Within the study group of 339 patients, painful mouth syndrome was observed in a number of 118, representing a 34.80% share of the total. (fig.3)

For a more complete picture of people diagnosed with BMS was necessary to know the place of residence, age distribution, sex, occupation, etc..

Patients diagnosed with painful mouth syndrome are in a 89% urban, rural areas being represented by the difference. This high proportion of urban patients show greater concern for their oral hygiene and treatment of such diseases. (fig.4)
The sex distribution is significant, in terms of prevalence for stomatodynia, in females. Thus, from the total number of 118 patients, BMS has affected 84 women and 33 men, which implies a distribution of 28% men and 72% women. It concludes that BMS affected more women than men. (fig.5) Age distribution of patients diagnosed with BMS is characterized by a concentration in people over 50 years, at a rate of 72.9% of the total. Our study confirmed the views of experts on the disease prevalence for females and people aged over 50 years. By correlating the distribution by sex and age structure, it can be said that BMS affects, in particular in post-menopausal women. That conclusion is part of the general conclusions drawn from clinical trials specialist. (fig.6)

In our study, we found that patients complained of pain in multiple areas of the oral cavity: the back of the tongue, lower lip, palate, oral mucosa, third front and edges of the tongue, upper and lower buccal vestibule. Of these, the most frequently affected by painful mouth syndrome (93%), are the top and edges of the tongue, followed by the back of the tongue - 3%. (fig. 7)
RESULTS AND DISCUSSION

Due to difficulties in understanding the long-term pain induced by BMS and complex clinical picture, there were suggested a large number of etiologies. Each of these postulated causes of pain was explained only for a small groups of patients. With the growing understanding of the profound role that taste damage plays in the pathogenesis of burning mouth syndrome, numerous etiologies can now be considered part of a comprehensive model of the disease. BMS has never been associated with a specific medical conditions, although associations were reported with a wide variety of health conditions and chronic pain conditions, including headache. Patients with BMS often have high blood glucose levels, but showed no consistent or causal.
relationship. Despite reports suggesting a significant relationship between painful mouth syndrome and ulcerative or erosive mucosal lesions, periodontal and geographic tongue, most studies have reported no significant changes in the intraoral soft or hard tissue. Similarly, chemical irritation and allergic reactions to dental materials and galvanic currents between dissimilar metals have been identified as major causes of painful mouth syndrome. (3,10)

In the initial consultations carried out in the Ambulatory of Oral and Maxillofacial Surgery Iasi, patients reported that the onset of disease was generally slow (59% of them), the symptoms gradually evolved and in 41% of them disease was installed suddenly as a result of previous dental maneuver, mental stress or shock. In terms of symptoms, patients accused pain, tingling, burning, numbness, swelling, and stinging. Approximately half of the patients complained pain continuing character, and the other half, pain intermittent nature. (fig.8)

Regarding local factors, in the 97 patients (82.2% of total), we encountered: 35.6% with chronic candidiasis generated or contributed to diabetes mellitus, xerostomia, corticosteroids, pernicious anemia: 26, 3% with dentures, mainly those removable. The pain headquarters was located at the gums of maxillary alveolar process and hard palate and on the floor of the mouth; 11% with contact allergy at methyl methacrylate, epoxy or other resins, such as new dentures and prosthetic field applied; 6.8% with oral parafunctions like motor tics of language (rubbing, rolling, rotation) or bruxism caused by prosthetics that led to the burning sensation of oral mucosa; 2.5% with migratory glossitis which determines
the phase of exacerbation depapillation and burning sensation on the tongue, exacerbated during periods of stress. (Fig.9)

Fig.9

General factors were found in 83 patients (70.3%), except that the 38 patients displayed the presence of two or more concomitant factors. In the target group was found the following general etiological factors: Menopause - 53.4% of the total. It is recognized as the most frequent factor in the genesis of nonspecific oral pain in females. This factor in conjunction with the general vasomotor phenomena, psychological symptoms or other disorders that can accompany the events around menopause, can causes oral discomfort and symptoms like burning sensation, altered taste, swelling, tingling, etc.

Diabetes mellitus was present in 18.6%. It is remembered as the important etiologic factor in genesis of stomatodynia, in a significant percentage due to high frequency of diabetes in Romania; Medications frequently due to a state of increased morbidity and in many cases the application of radiotherapy was another important issues in the emergence of glossodynia (16.1%); Anemia was found in 11.4%. The most common forms in the present study were iron deficiency anemia (which is due to iron deficiency from the reactions of the stomach or repeated bleeding) and pernicious anemia (released as a result of vitamin B12 malabsorption syndrome). (fig.10)

Regarding psychological factors involved in the etiology of stomatodynia for a total of 29 patients (24.8% of the total) were found: the states of stress – 1.8%, mental lability – 5.1%, psychiatric disorders (sometimes hidden or undiagnosed) -17%. (fig.11)

Patients diagnosed with BMS have presented a series of general problems associated flourishing a high proportion of hypertension 21%, anemia 16% and 16% diabetes mellitus, which together represent 53% of the reported general illnesses associated. (fig.12)
Disorders recordered above, require specific treatments, which may be also a cause for stomatodynia. Besides general diseases, the studied patients presented others oral disorders associated with metabolic syndrome. Candidiasis showed a 33% share of total stomatodynia associated diseases. The following weights in the hierarchy have oral thrush by 18% and irradiated tongue carcinoma by 15%. We therefore affirm once again that the presence of Candida albicans may be a causal factor of burning mouth syndrome. (fig.13)
CONCLUSIONS

Burning mouth syndrome is a painful or non-specific pain syndrome, disturbing and uncomfortable, characterized by tingling or burning sensation located in different areas of the oral cavity, which predominate on the tongue, symptoms not accompanied by clinical evidence. BMS revealed the lack of specific criteria for diagnosis. Stomatodynia is characterized by the existence or coexistence of various factors. From local ones, the most frequently involved are: candidiasis, incorrectly adjusted dentures, contact allergies and oral parafunctions. Among the general factors that have a higher frequency are: menopause, diabetes, previous medications and iron deficiency anemia. With regard to psychological factors were identified: stress, anxiety, depression, mental lability and mental disorders.

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