Vol. 00 No. 00 ■■ 2018

EDITORIAL

Is burning mouth a syndrome or a disorder? A commentary

Why is it that burning mouth continues to be referred to as a "syndrome"? This enigmatic and long-described pain disorder has been defined by several international organizations.[1-3] In 1994, the International Association for the Study of Pain (IASP) defined burning mouth syndrome (BMS) "(also known as glossodynia, glossopyrosis, oral dysesthesia, or stomatodynia) as a chronic oral mucosal pain or discomfort that has no identifiable causative lesions and is not caused by any other condition or disease."[1] The IASP recognized the clinical features to include burning, tingling, pricking, or discomfort. In 2004, the International Headache Society [IHS]) defined BMS as "an intraoral burning sensation for which no medical or dental cause can be found."[4] In the latest IHS revision (2018), BMS is defined as "an intraoral burning or dysesthetic sensation, recurring daily for more than two hours/d over more than three months, without clinically evident causative lesions."[2] The World Health Organization [WHO]), which publishes the *International Classification of Diseases* (ICD), endorses a similar definition in their 2016 classification system (ICD-10 code). Here, glossodynia (K14.6), which includes additional terms, such as *glossopyrosis* and *painful tongue*, is described as "painful sensations in the tongue including a sensation of burning."[5] The definitions published by these organizations have been updated several times over the years, and many other entities and authors also have provided input into our understanding of this disorder.[3,6-12] These definitions provide clinical perspective, yet differences between the descriptions are clearly evident. Despite the many attempts to define this pain disorder more specifically, the name of the condition—"burning mouth syndrome"—has not been critically assessed and scrutinized for years.

Appropriately naming a medical condition is an important undertaking. The ICD, which is managed by the WHO, is responsible for disease nomenclature. The WHO recently called upon scientists and national organizations to follow best practices in naming new "human infectious" diseases to minimize unnecessary negative effects ...."[13] And, it is logical to extend this to all human disorders, with the goal of improving the understanding of diseases, disorders, and conditions to achieve optimal treatment outcomes. Best practices state that a "disease name should consist of generic descriptive terms, based on the disease symptoms and more specific descriptive terms when robust information is available on how the disease manifests, who it affects, its severity or seasonality."[13]

These guidelines promote consideration of why the word *syndrome* is being used for burning mouth. Merriam-Webster defines *syndrome* as "a group of signs and symptoms that occur together and characterize a particular abnormality or condition."[14] Implied in this definition is a common cause or biologic abnormality that leads to physiologic changes, contributing to a collection of clinical and physical features. Key to the definition of *syndrome* is a predictable group of clinical and physical features that are present in a wide range of persons affected by the *syndrome*.

Notably, patients who have burning mouth *syndrome* do not *always* display a consistent set of clinical features. Thus, the features are *not* present across the full gamut of affected persons, and the findings are not consistent with the word *syndrome*. Although associated features (i.e., anxiety, depression, hyposalivation, xerostomia [subjective feeling of dry mouth]), taste abnormalities, and paresthesia have been reported to occur in this population,[2] the frequency of patients displaying these clinical features is variable and not often addressed fully in the diagnostic workup.[15-20] Also, diagnostic and treatment outcomes are variable.[21,22] For example, when a topical or local anesthetic is administered to affected individuals, sometimes it alleviates the burning sensation, and in other patients, the anesthetic has no effect or worsens the discomfort.[8,23,24] In as much as the etiology and pathophysiology of burning mouth remain an enigma[25-28] and there is lack of a predictable set of clinical features other than a burning sensation that each patient will display, it is time to consider this condition as a "disorder" (i.e., an abnormal physical condition), not a "syndrome."

As such, we recommend that the WHO, the IASP, and the IHS begin discussing a change in terminology to "burning mouth disorder." These discussions would benefit from the inclusion of practitioners who treat these patients and appropriate knowledge experts. We and others addressed this topic 15 years ago, yet little has been done to make a nomenclature change.[29] We recently rekindled this discussion at the World Workshop on Oral Medicine (WWOM) VII during the September 26−27, 2018, meeting in Gothenburg, Sweden, and this meeting served as an impetus for us to offer our expertise and promote future discussions on this topic. Our expectation is that this name change will take a

similar path that nomenclature for "temporomandibular disorders" did, as that term evolved decades ago from *Costen syndrome* and *temporomandibular joint syndrome*.[30-33] This step is necessary to clarify the many aspects of burning mouth disorder that require further elucidation and investigation so that effective clinical management can be achieved.

ACKNOWLEDGMENTS

We gratefully acknowledge the following organizations and companies that provided unrestricted financial support for WWOM VII: American Academy of Oral Medicine; European Association of Oral Medicine; British Society for Oral Medicine; National Institute of Dental and Craniofacial Research, Oral Diseases; Henry Schein Cares; Colgate; Xerostom; Dermtreat; World Dental Education Foundation; and Unilever.

In addition, we express our sincere appreciation for the opportunity to collaborate with the full WWOM VII Steering Committee. This committee provided the conceptual framework and logistical support to produce the WWOM VII Conference in September 2018 in Gothenburg, Sweden. In addition, the Steering Committee provided scientific and editorial critiques of this manuscript. The names of the members of the entire Steering Committee is listed below (in alphabetical order): Martin S. Greenberg (USA), Timothy A. Hodgson (UK), Siri Beier Jensen (Denmark), A. Ross Kerr (USA), Peter B. Lockhart (USA), Giovanni Lodi (Italy), and Douglas E. Peterson (USA).

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https://doi.org/10.1016/j.oooo.2018.12.011

REFERENCES

1. Burning mouth syndrome. In: Merskey H, Bogduk N, eds. *Classification of Chronic Pain. Descriptions of Chronic Pain Syndromes and Definitions of Pain Terms*, 2nd ed. Seattle, WA: IASP Press; 1994:74-75.
2. Headache Classification Committee of the International Headache Society (IHS). The International Classification of Headache Disorders. 3rd ed. *Cephalalgia*. 2018;38:1-211.
3. Continuous Neuropathic Pain. In: De Leeuw R, Klasser GD, eds. *Orofacial Pain: Guidelines for Assessment, Diagnosis and Management*, 6th ed. Chicago, IL: Quintessence; 2018:95-96.
4. Headache Classification Subcommittee of the International Headache Society. The International Classification of Headache Disorders. 2nd ed. *Cephalalgia*. 2004;24:9-160.
5. World Health Organization. International Statistical Classification of Diseases and Related Health Problems 10th Revision 2016. Available at: http://apps.who.int/classifications/icd10/browse/2016/en-/K00-K14. Accessed November 23, 2018.
6. Lamey PJ, Lewis MA. Oral medicine in practice: burning mouth syndrome. *Br Dent J*. 1989;167:197-200.
7. Scala A, Checchi L, Montevecchi M, Marini I, Giamberardino MA. Update on burning mouth syndrome: overview and patient management. *Crit Rev Oral Biol Med*. 2003;14:275-291.
8. Gremeau-Richard C, Dubray C, Aublet-Cuvelier B, Ughetto S, Woda A. Effect of lingual nerve block on burning mouth syndrome (stomatodynia): a randomized crossover trial. *Pain*. 2010;149:27-32.

9. Jaaskelainen SK. Pathophysiology of primary burning mouth syndrome. *Clin Neurophysiol*. 2012;123:71-77.
10. Fortuna G, Di Lorenzo M, Pollio A. Complex oral sensitivity disorder: a reappraisal of current classification of burning mouth syndrome. *Oral Dis*. 2013;19:730-732.
11. Gurvits GE, Tan A. Burning mouth syndrome. *World J Gastroenterol*. 2013;19:665-672.
12. Klasser GD, Grushka M, Su N. Burning mouth syndrome. *Oral Maxillofac Surg Clin North Am*. 2016;28:381-396.
13. Lindmeier C, Davies OL. WHO issues best practices for naming new human infectious diseases. *World Health Organization*. 2018. Available at: www.who.int/topics/infectious_diseases/naming-new-diseases/en/. Accessed November 16, 2018.
14. Merriam-Webster Dictionary. 2018. Available at: www.merriam-webster.com/dictionary/syndrome. Accessed November 16, 2018.
15. Bergdahl M, Bergdahl J. Burning mouth syndrome: prevalence and associated factors. *J Oral Pathol Med*. 1999;28:350-354.
16. Soares MS, Chimenos-Kustner E, Subira-Pifarre C, Rodriguez de Rivera-Campillo ME, Lopez-Lopez J. Association of burning mouth syndrome with xerostomia and medicines. *Med Oral Patol Oral Cir Bucal*. 2005;10:301-308.
17. Suh KI, Lee JY, Chung JW, Kim YK, Kho HS. Relationship between salivary flow rate and clinical symptoms and behaviours in patients with dry mouth. *J Oral Rehabil*. 2007;34:739-744.
18. Eliav E, Kamran B, Schaham R, et al. Evidence of chorda tympani dysfunction in patients with burning mouth syndrome. *J Am Dent Assoc*. 2007;138:628-633.
19. Malik R, Goel S, Misra D, Panjwani S, Misra A. Assessment of anxiety and depression in patients with burning mouth syndrome: a clinical trial. *J Midlife Health*. 2012;3:36-39.
20. Davies SJ, Underhill HC, Abdel-Karim A, et al. Individual oral symptoms in burning mouth syndrome may be associated differentially with depression and anxiety. *Acta Odontol Scand*. 2016;74:155-160.
21. Zakrzewska J, Buchanan JA. Burning mouth syndrome. *BMJ Clin Evid*. 2016 Jan 7;2016. pii: 1301.
22. de Souza IF, Marmora BC, Rados PV, Visioli F. Treatment modalities for burning mouth syndrome: a systematic review. *Clin Oral Investig*. 2018;22:1893-1905.
23. Formaker BK, Mott AE, Frank ME. The effects of topical anesthesia on oral burning in burning mouth syndrome. *Ann N Y Acad Sci*. 1998;855:776-780.
24. Treldal C, Jacobsen CB, Mogensen S, et al. Effect of a local anesthetic lozenge in relief of symptoms in burning mouth syndrome. *Oral Dis*. 2016;22:123-131.
25. Grushka M, Epstein JB, Gorsky M. Burning mouth syndrome and other oral sensory disorders: a unifying hypothesis. *Pain Res Manag*. 2003;8:133-135.
26. Moghadam-Kia S, Fazel N. A diagnostic and therapeutic approach to primary burning mouth syndrome. *Clin Dermatol*. 2017;35:453-460.
27. Feller L, Fourie J, Bouckaert M, et al. Burning mouth syndrome: aetiopathogenesis and principles of management. *Pain Res Manag*. 2017;2017:1926269.
28. Bender SD. Burning mouth syndrome. *Dent Clin North Am*. 2018;62:585-596.
29. Rhodus NL, Carlson CR, Miller CS. Burning mouth (syndrome) disorder. *Quintessence Int*. 2003;34:587-593.
30. Costen JB. A syndrome of ear and sinus symptoms dependent upon disturbed function of the temporomandibular joint. 1934. *Ann Otol Rhinol Laryngol*. 1997;106:805-819.
31. Perry HT. Temporomandibular joint dysfunction: from Costen to the present. *Ann Acad Med Singapore*. 1995;24:163-167.
32. Okeson JP. Current terminology and diagnostic classification schemes. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 1997;83:61-64.
33. Dym H, Israel H. Diagnosis and treatment of temporomandibular disorders. *Dent Clin North Am*. 2012;56:149-161.