

Where Do We Go From Here?

Awareness of chronic pain and the complexities of pain management is increasing in the US and around the world, and the recognition of orofacial pain as a specialty has added another layer to the exceptionally advanced training and skillset required to practice dentistry. Dentists manage patient pain and discomfort daily, and oftentimes, the dental treatment provided relieves patients of acute and excruciating conditions—in fact, dentists are better trained to control pain when compared to many other health care providers. In view of more than 30 years of experience in this field, I see this progress and the impressive accumulation of knowledge, but I also believe that we need to start thinking differently.

Initially, the field of chronic orofacial pain focused mainly on the various forms of TMD (a term used liberally to encompass a variety of conditions). However, with time, conditions such as neuropathic orofacial pain, neurovascular pain, transition from acute to chronic pain following simple dental procedures, and chronic pain associated with other medical conditions are now part of the orofacial pain practice. Today, the focus has expanded from specific procedures to the patient's overall wellbeing.

But despite the progress made in our understanding of the underlying mechanisms leading to chronic pain and the new classification systems and research diagnostic criteria implemented, the treatment we provide for chronic orofacial pain conditions is still limited. Combinations of appliances, trigger point injections, biofeedback, physical therapy, and pharmacologic treatments for TMD have been in use for decades, with few advancements and varied success rates. There are no new treatment modalities or medications, and systematic reviews often reiterate the conclusions that there is insufficient evidence and that further, high-quality research is required.

The most noteworthy developments in recent years include topical medications and botulinum toxin injections. However, additional large-scale studies are required to confirm the efficacy of these treatments and define indications for use.

The holistic approach presented in the last issue of this journal by Tara Renton, and educated trial-and-error of different treatment combinations, are probably the best approaches we can provide. International efforts should help with developing holistic approach protocols as well.

Often, the diagnosis of orofacial pain patients is not simple. Patients may present with some features of musculoskeletal pain, but also show other signs

and symptoms that may fit neuropathic or neurovascular pain. Usually, we will come up with a differential diagnosis list, eventually selecting one condition as the primary diagnosis.

The complexity of chronic pain and the interaction(s) among the peripheral, autonomic, and central nervous systems may complicate the clinical presentation and make a single diagnosis insufficient or inaccurate for describing each patient's condition. Furthermore, the lack of definite association between an event (trauma or any other trigger) and the chronic pain can place patients on a spectrum of conditions that are not typical for one diagnosis. This makes finding a suitable treatment option even more challenging.

I believe that a personalized treatment approach will be more beneficial to our patients. While our field is not yet ready for genetic screening and treatment matching based on genetic profile, we should try to use existing tools and knowledge in order to profile patients and to link those profiles to the best treatment option.

For more than two decades, we have studied the use of quantitative sensory testing (QST) in order to diagnose and accordingly treat orofacial pain conditions. Profiling and clustering of patients based on QST profile could help in treatment selection, even though the variability of results among patients is relatively high.

Over the last 10 years, we have been working on profiling patients (and laboratory animals) based on their inhibitory pain modulation efficiency. Painful conditions can undergo modulation—either suppression or augmentation at the central nervous system level. The inhibitory modulation system is known to be activated by painful stimuli, exercise, and muscle isometric contraction.¹

A faulty pain modulation system has been shown to be associated with various chronic pain conditions, including trigeminal neuropathies and migraine headaches, and possibly with TMD, although there are conflicting results.² Interestingly, even among healthy subjects, pain modulation efficacy is reduced with age,³ which may explain the increase in chronic pain among older adults.

Patients with less efficient pain modulation have been shown to suffer more from chronic postsurgical pain and experience greater therapeutic efficacy from specific medications. This may suggest that a patient's pain modulation profile can be used as a tool for predicting the development of chronic pain and the individual response to pain management.

In a recent study published in this journal,⁴ we have shown that in some patients with chronic masticatory myalgia (CMM), nonstrenuous exercises can induce delayed hypoalgesia and alleviate pain. Further research should evaluate the inclusion of exercise as a treatment protocol for CMM patients with this specific profile.

We can study possible associations between specific profiles (such as pain modulation profiles and more) of chronic pain patients and different treatment modalities. This may require extensive work; however, phenomena that are known to have a global effect on pain, such as placebo, exercise, hypnosis, or even meditation, will potentially have better results with the use of this information.

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References

1. Nir RR, Yarnitsky D. Conditioned pain modulation. *Curr Opin Support Palliat Care* 2015;9:131–137.
2. Moana-Filho EJ, Herrero Babiloni A, Theis-Mahon NR. Endogenous pain modulation in chronic orofacial pain: A systematic review and meta-analysis. *Pain* 2018;159:1441–1455.
3. Edwards RR, Fillingim RB, Ness TJ. Age-related differences in endogenous pain modulation: A comparison of diffuse noxious inhibitory controls in healthy older and younger adults. *Pain* 2003;101:155–165.
4. Nasri-Heir C, Patil AG, Korczeniewska OA, et al. The effect of nonstrenuous aerobic exercise in patients with chronic masticatory myalgia. *J Oral Facial Pain Headache* 2019;33:143–152.

