Clinical Update

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What is Orofacial Pain?

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Introduction

The purpose of this clinical update is to explain the evolution of Orofacial Pain as a discipline from the dental profession's traditional concepts of temporomandibular disorders (TMDs) and to discuss its current status within Navy healthcare. A future clinical update will discuss the most contemporary diagnostic and management paradigms.

Background

Dentistry assumed the primary role for treating patients with pain in the region of the temporomandibular joint (TMJ) based upon an article published in 1934 by Dr. James Costen, an otolaryngologist. After presenting eleven anecdotal case reports, Costen theorized that "abnormal pressure" on the TMJ due to occlusal deficiencies from ill-fitting dentures was a frequent cause of periauricular pain and headache. Despite its limitations, the Costen paper was widely accepted and prompted the dental and medical professions to apply traditional dental principles to the diagnosis and management of periauricular pain and headache.

Over the ensuing years, numerous contradictory and sometimes injurious therapies have been employed in the treatment of TMDs. As a result of extensive patient suffering following several methods of treatment, and bitter controversies swirling between and within various healthcare professions, the National Institutes of Health (NIH) convened a Consensus Conference in May 1996 (1). At its conclusion, the conference panel summarized that the etiology, scope of symptoms, and effective treatment for TMDs had not yet been demonstrated. Now, nearly 6 years later, still no universally accepted concept that explains the pathophysiology of TMDs has been recognized (2).

What is Orofacial Pain?

The NIH Consensus Conference described TMDs as "a collection of medical and dental conditions affecting the TMJ and/or the muscles of mastication, as well as contiguous tissue components" (1). However, a growing body of evidence in the neuroscience, muscle physiology and cardiovascular literature is prompting investigators to redefine a number of chronic disorders, including TMDs. Now TMDs are being viewed as a subset of disorders under the larger heading of Orofacial Pain. The discipline of Orofacial Pain consists of all the entities classically listed under the label of TMDs and expands the concept of "contiguous tissue components" to include the brain, and in particular, the full extent of the trigeminal nerve system. Orofacial Pain is best defined as the differential diagnoses and management of pain and dysfunction affecting the sensory and motor functions of the trigeminal nerve system and the structures it innervates.

The emerging discipline of Orofacial Pain bridges a gap between traditional dental and medical practice. The significance of coexistent medical issues in patients with orofacial pain has often been ignored, but the following literature demonstrates the vital importance of such conditions:

1. More than 81% of patients who report TMD symptoms have additional pain sources and diagnoses beyond the facial region that will affect treatment (3).
2. Problems that are co-morbid with TMD complaints routinely include cervical pain, headache, fibromyalgia, myofascial pain, irritable bowel syndrome, interstitial cystitis, chronic fatigue syndrome, multiple chemical sensitivities, panic disorder and concentration deficits (4).
3. Compared to normal subjects, facial pain patients exhibit increased sympathetic nervous system responses, hypocapnia, decreased venous return, sleep deficits, altered receptive fields and greater fatigue, anxiety and depression (5).
4. Greater than 50% of the chronic TMD population has a history of physical or sexual abuse (6).
5. Noxious spinal cord input to the brain evokes cranial nerve activity that is monitored by the trigeminal system and can provoke responses that affect the masticatory system.

What do Orofacial Pain practitioners do?

Orofacial Pain practitioners assess sensory and motor disorders of the trigeminal system, co-morbid medical conditions and the physiologic disturbances that affect the perception of pain. Their medical-dental training enables them to render differential diagnoses and initiate management protocols for patients whose symptoms are often confusing or contradictory when viewed using traditional disease models. They address the diagnostic and therapeutic void that exists between non-odontogenic facial pain and medical practice. Patients are referred to orofacial pain services from a wide variety of medical, dental and allied health care providers.

Orofacial Pain practitioners are multidisciplinary in their approach to pain diagnoses and control. Their clinical skills are a blend of dentistry, psychology, neurology, anesthesiology, rheumatology, physical therapy, otolaryngology and rehabilitation medicine. Collateral duties for orofacial pain providers include writing medical boards and addendums, providing legal depositions, consulting with regional Tricare agencies and conducting continuing education about pain for dentists, physicians and other health care providers.

Do Orofacial Pain providers contribute to Dental Readiness?

The primary role of Orofacial Pain practitioners is to manage patients with non-odontogenic face pain. In the United States, 34% of the

general population experiences at least one attack of non-odontogenic facial pain that will significantly impede function. For any 6-month interval, 10-12% of that symptomatic population will experience recurring problems, and symptoms are overwhelmingly predominant during the ages of our active duty personnel, 18 to 45 (7). The presence of an orofacial pain provider in a command contributes to readiness by freeing dentists to address more traditional dental concerns and avoid becoming embroiled with time intensive patients that they may feel unprepared to treat. Likewise, the Navy orofacial pain community is committed to bringing information to "the deck plate" through a variety of continuing education efforts that familiarize primary care providers with basic orofacial pain evaluation and management. Such skills can enhance readiness and improve overall patient satisfaction by making providers more effective and efficient in all aspects pain management.

What is the future of Orofacial Pain in the Navy?

Pain management is attracting growing attention throughout all healthcare systems. For example, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has recognized the inadequacy of the treatment of pain in the United States. As of January 1 2001, JCAHO has mandated that pain assessment and management become an integral part of daily healthcare practice. To underscore their emphasis on improved pain management, JCAHO now requires a documented assessment pain as the "fifth vital sign". Aside from the issues related to quality patient care, healthcare agencies are also concerned about the cost of contracted pain management services. For example, over a recent two-year period, one Tricare region paid 1.5 million dollars to civilian providers for patients with head and face pain complaints because such care was unavailable through military facilities.

In view of the aforementioned, the Navy has taken proactive steps in the realm of pain management. As part of its commitment to improved treatment for pain, Navy Medicine has funded the first federal service Orofacial Pain Center and 2 year residency at the Naval Postgraduate Dental School, Bethesda, Maryland. The Orofacial Pain Center will accept up to 3 residents annually from any of the federal services. Residency training will focus on the most modern concepts of pain physiology, diagnosis and management. The center is based on the concept that pain evolves not only from potential tissue damaging stimuli, but also is a consequence of the way fatigue and anxiety affect nerve thresholds and brain function. Viewing pain as a physiologic disturbance caused by fatigue and anxiety as well as nociception represents a major paradigm shift in pain etiology and pain management that is being pioneered by the Navy Orofacial Pain community.

Based on conservative demographic data, the Dental Corps projects a need for 17 orofacial pain providers within the Navy healthcare system and 45 providers within the Tricare system as a whole. Clearly the opportunities for dental officers with orofacial pain training are unlimited.

Further Information

If you have questions about patient management issues, residency training, continuing education services or any other aspect about orofacial pain, please contact the authors or any of the other Navy orofacial pain practitioners listed below.

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References:

1. Management of Temporomandibular Disorders. National Institutes of Health Technology Assessment of Conference Statement. April 29-May 1, 1996. J Am Dent Assoc 1996 Nov;127(11):1595-606.
2. Greene CS. The etiology of temporomandibular disorders: implications for treatment. J Orofac Pain 2001 Spring;15(2):93-105; discussion 106-16.
3. Turp JC, Kowalski CJ, Stohler CS. Temporomandibular Disorders--pain outside the head and face is rarely acknowledged in the chief complaint. J Prosthet Dent 1997 Dec;78(6):592-5.
4. Aaron LA, Burke MM and Buchwald D. Overlapping conditions among patients with chronic fagitue syndrome, fibromyalgia, and temporomandibular disorder. Arch Intern Med 2000 Jan 24;160(2):221-7.
5. Carlson CR, Reid KI, Curran SL, Studts J, Okeson JP, Falace D, Nitz A, Bertrand PM. Psychological and physiological parameters of masticatory muscle pain. Pain 1998 Jun;76(3):297-307.
6. Curran SL, Sherman JJ, Cunningham LL, Okeson JP, Reid KI, Carlson CR. Physical and sexual abuse among orofacial pain patients: linkages with pain and psychologic distress. J Orofac Pain 1995 Fall;9(4):340-6.
7. Von Korff M, Dworkin SF, Le Resche L and Kruger A. An epidemiologic comparison of pain complaints. Pain 1988 Feb;32(2):173-83.

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