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Temporomandibular Disorders and Orofacial Pain

GUEST EDITOR
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The orofacial pain clinician must understand the difference between peripheral and central mechanisms of pain. Particularly, one has to understand the process of central sensitization as it relates to the various orofacial pain conditions to understand orofacial pain. Understanding leads to more effective treatment.
Myogenous Temporomandibular Disorders: Diagnostic and Management Considerations
James Fricton

Myogenous temporomandibular disorders (or masticatory myalgia) are characterized by pain and dysfunction that arise from pathologic and functional processes in the masticatory muscles. There are several distinct muscle disorder subtypes in the masticatory system, including myofascial pain, myositis, muscle spasm, and muscle contracture. The major characteristics of masticatory myalgia include pain, muscle tenderness, limited range of motion, and other symptoms (e.g., fatigability, stiffness, subjective weakness). Comorbid conditions and complicating factors also are common and are discussed. Management follows with stretching, posture, and relaxation exercises, physical therapy, reduction of contributing factors, and as necessary, muscle injections.

Joint Intracapsular Disorders: Diagnostic and Nonsurgical Management Considerations
Jeffrey P. Okeson

This article reviews common intracapsular temporomandibular disorders encountered in the dental practice. It begins with a brief review of normal temporomandibular joint anatomy and function followed by a description of the common types of disorders known as internal derangements. The etiology, history, and clinical presentation of each are reviewed. Nonsurgical management is presented based on current long-term scientific evidence.

Temporomandibular Disorders: Associated Features
Ronald C. Auvenshine

Temporomandibular disorder (TMD) encompasses a number of clinical problems involving the masticatory muscles or the temporomandibular joints. These disorders are a major cause of nondental pain in the orofacial region, and are considered to be a subclassification of musculoskeletal disorders. Orofacial pain and TMD can be associated with pathologic conditions or disorders related to somatic and neurologic structures. When patients present to the dental office with a chief complaint of pain or headaches, it is vital for the practitioner to understand the cause of the complaint and to perform a thorough examination that will lead to the correct diagnosis and appropriate treatment. A complete understanding of the associated medical conditions with symptomology common to TMD and orofacial pain is necessary for a proper diagnosis.

Temporomandibular Disorders and Headache
Steven B. Graff-Radford

Headache is a common symptom, but when severe, it may be extremely disabling. It is assumed that patients who present to
dentists with headache often are diagnosed with a temporomandibular disorder (TMD), although many may have migraine. TMD as a collective term may include several clinical entities, including myogenous and arthrogenous components. Because headache and TMD are so common they may be integrated or separate entities. Nevertheless, the temporomandibular joint (TMJ) and associated orofacial structures should be considered as triggering or perpetuating factors for migraine. This article discusses the relationship between the TMJ, muscles, or other orofacial structures and headache.

Psychological Factors Associated with Orofacial Pains
Charles R. Carlson

This article develops the case for why trigeminal pain is a unique and challenging problem for clinicians and patients alike, and provides the reader with insights for effective trigeminal pain management based on an understanding of the interplay between psychologic and physiologic systems. There is no greater sensory experience for the brain to manage than unremitting pain in trigeminally mediated areas. Such pain overwhelms conscious experience and focuses the suffering individual like few other sensory events. Trigeminal pain often motivates a search for relief that can drain financial and emotional resources. In some instances, the search is rewarded by a treatment that immediately addresses an identifiable source of pain; in other cases, it can stimulate never-ending pilgrimages from one health provider to another.

Temporomandibular Disorders, Head and Orofacial Pain: Cervical Spine Considerations
Steve Kraus

Head and orofacial pain originates from dental, neurologic, musculoskeletal, otolaryngologic, vascular, metaplastic, or infectious disease. It is treated by many health care practitioners, such as dentists, oral surgeons, and physicians. The article focuses on the nonpathologic involvement of the musculoskeletal system as a source of head and orofacial pain. The areas of the musculoskeletal system that are reviewed include the temporomandibular joint and muscles of mastication—collectively referred to as temporomandibular disorders (TMDs) and cervical spine disorders. The first part of the article highlights the role of physical therapy in the treatment of TMDs. The second part discusses cervical spine considerations in the management of TMDs and head and orofacial symptoms. It concludes with an overview of the evaluation and treatment of the cervical spine.

Temporomandibular Joint Surgery for Internal Derangement
M. Franklin Dolwick

Surgery of the temporomandibular joint (TMJ) plays a small, but important, role in the management of patients who have...
temporomandibular disorders (TMDs). There is a spectrum of surgical procedures for the treatment of TMD that ranges from simple arthrocentesis and lavage to more complex open joint surgical procedures. It is important to recognize that surgical treatment rarely is performed alone; generally, it is supported by nonsurgical treatment before and after surgery. Each surgical procedure should have strict criteria for which cases are most appropriate. Recognizing that scientifically proven criteria are lacking, this article discusses the suggested criteria for each procedure, ranging from arthrocentesis to complex open joint surgery. The discussion includes indications, brief descriptions of techniques, outcomes, and complications for each procedure.

Neuropathic Orofacial Pain: Proposed Mechanisms, Diagnosis, and Treatment Considerations
Christopher J. Spencer and Henry A. Gremillion

The most common reason patients seek medical or dental care in the United States is due to pain or dysfunction. The orofacial region is plagued by a number of acute, chronic, and recurrent painful maladies. Pain involving the teeth and the periodontium is the most common presenting concern in dental practice. Non-odontogenic pain conditions also occur frequently. Recent scientific investigation has provided an explosion of knowledge regarding pain mechanisms and pathways and an enhanced understanding of the complexities of the many ramifications of the total pain experience. Therefore, it is mandatory for the dental professional to develop the necessary clinical and scientific expertise on which he/she may base diagnostic and management approaches. Optimun management can be achieved only by determining an accurate and complete diagnosis and identifying all of the factors associated with the underlying pathosis on a case-specific basis. A thorough understanding of the epidemiologic and etiologic aspects of dental, musculoskeletal, neurovascular, and neuropathic orofacial pain conditions is essential to the practice of evidence-based dentistry/medicine.

Four Oral Motor Disorders: Bruxism, Dystonia, Dyskinesia and Drug-Induced Dystonic Extrapyramidal Reactions
Glenn T. Clark and Saravanan Ram

This article reviews four of the involuntary hyperkinetic motor disorders that affect the orofacial region: bruxism, orofacial dystonia, oromandibular dyskinesia, and medication-induced extrapyramidal syndrome-dystonic reactions. It discusses and contrasts the clinical features and management strategies for spontaneous, primary, and drug-induced motor disorders in the orofacial region. The article provides a list of medications that have been reported to cause drug-related extrapyramidal motor activity, and discusses briefly the genetic and traumatic events that are associated with spontaneous dystonia. Finally, it presents an approach for management contraindications, side effects and injections are covered. Indications and complications for each procedure are discussed, including techniques, outcomes, and complications for each procedure.

A Critical Review of the Use of Botulinum Toxin in Orofacial Pain Disorders
Glenn T. Clark, Alan Stiles, and Sheldon G. Gross

This article reviews the use of botulinum toxin (BoNT) for the treatment of various chronic orofacial pain conditions. The review includes the results of randomized, double-blind studies that have shown BoNT to be effective in the treatment of chronic orofacial pain conditions. The article also discusses the potential side effects and contraindications of BoNT treatments.

Complementary and Alternative Medicine for Orofacial Pain
Cynthia D. Myers

This article discusses the use of complementary and alternative medicine (CAM) for the treatment of orofacial pain. The article reviews literature on the general adult population and highlights the effectiveness and safety of CAM treatments for persistent pain. The article also discusses the role of biofeedback, relaxation, and other CAM therapies in the management of orofacial pain.

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A Critical Review of the Use of Botulinum Toxin in Orofacial Pain Disorders
Glenn T. Clark, Alan Stiles, Larry Z. Lockerman, and Sheldon G. Gross

This article reviews the appropriate use, cautions, and contraindications for botulinum neurotoxin (BoNT) and reviews the peer-reviewed literature that describes its efficacy for treatment of various chronic orofacial pain disorders. The literature has long suggested that BoNT is of value for orofacial hyperactivity and more recently for some orofacial pain disorders; however, the results are not as promising for orofacial pain. The available data from randomized, double-blind, placebo-controlled trials (RBCTs) do not support the use of BoNT as a substantially better therapy than what is being used already. The one exception is that BoNT has reasonable RBCT data to support its use as a migraine prophylaxis therapy. The major caveat is that the use of BoNT in chronic orofacial pain is "off-label".

Complementary and Alternative Medicine for Persistent Facial Pain
Cynthia D. Myers

This article discusses complementary and alternative medicine (CAM), reviews literature on the prevalence of use of CAM by the general adult population in the United States and by patients with persistent facial pain, and summarizes published, peer-reviewed reports of clinical trials assessing the effects of CAM therapies for persistent facial pain. Results indicate that many patients use CAM for musculoskeletal pain, including persistent facial pain. Preliminary work on selected complementary therapies such as biofeedback, relaxation, and acupuncture seems promising; however, there are more unanswered than answered questions about cost-effectiveness, efficacy, and mechanisms of action of CAM for persistent facial pain.

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