

Conclusions

In general, Dr Greene raises a viewpoint that many will find controversial, but it is extremely important to discuss. The wholesale pursuit of an etiologic-based therapeutic approach for TMD is both premature and difficult to justify, since such treatments often have greater expense, risk, and morbidity than a symptom-based escalation-of-care model. When one looks closely (as Greene has), the data proving that a specific agent or even a combination of etiologic agents can be differentiated from other possible agents do not exist. The data showing a clear-cut causal link between 1 or more etiologic factors and a specific TMD are lacking (with some obvious exceptions, such as macro-trauma and autoimmune-based polyarthritic diseases). There is no proof that individual anti-etiological therapies actually can stop or reduce the etiologic agent they are supposed to affect. If I were asked whether Greene's commentary will affect how I actually practice and teach, I would respond that there is no conflict between my educational philosophy and approach to patients and his commentary. I have long recognized that typically our treatment will be symptom-driven and evidence-based, not etiology-driven. In addition,

although it may be difficult to achieve, I will still search for an etiology every time I sit down with a patient, since I believe this is my job as a diagnostician. If and when I discover evidence that suggests that etiology is unequivocally linked to symptomatology, this information will influence but not obviate the logic I use to select suitable treatment, since all care provided must be evidence-based and appropriately sequenced.

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CRITICAL COMMENTARY 3

THE ETIOLOGY OF TEMPOROMANDIBULAR DISORDERS: IMPLICATIONS FOR TREATMENT

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Charles Greene's article¹ is a useful summary of current understanding of temporomandibular disorders (TMD). It complements the U.S. National Institutes of Health (NIH) 1996 statement on the management of these disorders² and the European literature. For instance, Molins'

"From bite to mind" is a very similar look back at a career in temporomandibular pain.³ Dr Greene draws attention to the similarity between back pain and TMD, endorsing the recent treatment approach in back pain, ie, early but conservative intervention in an attempt to prevent chronicity.⁴

Undue attention has undoubtedly been given in the past to subclassifying disorders affecting the temporomandibular joint (TMJ)—the lumbar spine of the face. Concentration on clicks, locks, and noise leads the practitioner further and further into irreversible treatments, a route without much evidence-based support, since there is a high prevalence of joint sounds in the general population⁵ and a huge range of mandibular mobility.⁶ Confusion of non-pathologic and pathologic problems in the joint is probably unhelpful also. Of course, the etiologies of TMD are not clearly understood, but as Greene reminds us, this does not mean therapeutic disaster or therapeutic nihilism.

Rather than adopt a restricted view of pain, we should view TMD as one of an ill-understood group of chronic pain conditions that may involve the whole of the mouth and face. Unfortunately, descriptions of disorders and treatment tend to be influenced by the background of the specialist assessing the patient. Greene acknowledges this. While Greene has doubts about the application of biopsychosocial and multifactorial variables to the individual on the grounds that these aspects cannot all be assessed in an individual patient, this should move us to adopt better psychometric instruments, as in other pain conditions. A multidisciplinary clinic allows all aspects of a patient's problem to be assessed. Patients who see maxillofacial surgeons have symptoms described in terms of clicking, sticking, and locking of the TMJ and pain in the associated musculature. Ear-nose-throat surgeons may retain Costen's outdated notion that the pain results from missing molar teeth and may refer the patient to maxillofacial surgeons or restorative dental specialists. Greene reminds us that, despite advice from the NIH that "there is no evidence linking occlusal abnormalities with pain," patients' occlusions continue to be adjusted by ill-informed practitioners, often leading to more problems for patients, well described by Clark and clearly illustrated by Forsell et al in their review of occlusal treatment.⁷

Participants in the NIH conference in 1996² reviewed the issues regarding the management of orofacial pain, concluding that significant problems hampered present diagnostic classifications and treatment disorders. More than 4 years later, there is no greater clarity in classification. The American Academy of Orofacial Pain has recently recommended that such pains be diagnosed and treated in a manner consistent with the diagnosis and treatment of any system of joints and muscles in the body, ie, as "head and neck management" rather than "TMJ management." In addition, it

seems sensible to separate acute and chronic (over 6 months) TMD, particularly as they show major psychologic differences.⁸

Although Greene deliberately restricts his discussion to TMD, it is worth considering the various other widely recognized pain problems that affect the mouth and face, and often coexist with TMD. *Atypical or chronic facial pain* refers to pain in the non-joint, non-muscular part of the face, often described as a dull ache and frequently crossing the midline. The pain is deep, and treatment provided by clinicians is almost invariably conservative. As the International Association for the Study of Pain (IASP) does not recognize atypical facial pain as a diagnosis, the term *chronic facial pain* may be more useful. The IASP does recognize *atypical odontalgia*, a toothache without a demonstrable cause, which should probably be called *chronic odontalgia*.⁹ There are also odd burning pains in the tongue and gums, referred to as *oral dysesthesia* or *burning mouth syndrome*, which describe disturbances in oral sensation unrelated to any pathology. Up to 70% of the general population have orofacial symptoms, but only 5% seek treatment, the majority of whom are women.¹⁰

The association between the various facial pain problems is not clear, but patients frequently complain of more than 1 symptom, and it may be that patients start with joint symptoms and progress to more generalized pain. Patients with pain in the TMJ are generally younger than those with more generalized pain. It is unclear whether there is any clinical value in distinguishing between these pain problems, as treatment is identical for all. Furthermore, facial pain is rarely an exclusive problem; the majority of patients complain of many other bodily symptoms, such as irritable bowel, backache, and headache.¹⁰ Some patients have multiple sensitivities and dizziness. About 50% of patients with chronic facial pain also complain of chronic fatigue, and about 50% to 70% of pain patients suffer from sleep disturbance.¹⁰ In general, those with long-standing pain can continue normal activities, despite the pain being a daily or near daily occurrence.¹¹

Initiation and Maintenance

Many chronic facial pain patients specifically relate the onset of their symptoms to dental treatment itself. This is vital to recognize, since so many problems are related to excessive dental treatment. Other reported precipitating factors include infections, toxins, and life stress, such as

that associated with bereavement. However, once the pain is initiated, the patient may inadvertently exacerbate and thereby maintain the pain problem through his or her own actions. For example, some patients completely avoid movement of the jaw, which eventually results in muscular atrophy and greater joint stiffness. Others compulsively stretch and hyperextend the jaw numerous times each day, provoking local irritation. Frequent prodding and touching the painful areas of the face, teeth, or gums are also common in facial pain patients and are also likely to irritate already sensitive muscles and nerves. Underpinning these behaviors is the patient's mood state. High levels of anxiety, related to concerns about whether the pain might worsen, a possible undetected malignant cause for the pain, and so on, increase the perception of pain, as does depressed mood. Aside from the biochemical associations between pain and depression, depressive symptoms, such as loss of interest in daily activities and fatigue, are critical factors in developing and maintaining a preoccupation with physical symptoms. It is essential for the clinician to adopt an understanding of the whole patient to avoid harmful mechanical therapy.

Greene believes that we should aim to treat specific TMD diagnostic categories, regardless of individual etiologic factors. However, this assumes diagnostic categories to be inherently meaningful, which is currently unproven. Despite his advocacy of behavioral management techniques to combat the stress of illness, he risks propagating a mechanistic approach to TMD in ignoring individual reactions to pain as a stressor.¹²

Central Pain Mechanism

Greene sees the future in basic science research. It is possible that several discrete stimuli initiate chronic facial pain by a common final pathway that involves the generation of a central pain state through the sensitization of second-order nociceptive neurons. Derbyshire et al¹³ have shown increased activity in the cingulate cortex on positron emission tomographic scans of chronic facial pain patients, compared to patients with postextraction pain or pain-free patients. This is similar to the areas reported to show increased activity in fibromyalgia. Since the cingulate is the area concerned with attention, this may be the cerebral basis of somatization.

Chronic Symptoms

Chronic symptoms and syndromes pose a major challenge to medicine, as well as dentistry. They are common and frequently persistent, and are associated with significant distress, disability, and unnecessary expenditure of medical resources. In primary care in the UK, somatic symptoms and syndromes account for 20% of consultations. Among medical outpatients, somatic complaints accounted for 35% of new referrals in a UK study.¹⁴ The prevalence of emotional distress and disorder in patients who attend hospital with unexplained syndromes (such as irritable bowel syndrome) is higher than in patients with comparable medical conditions (such as inflammatory bowel disease), and many such patients are severely disabled.¹⁵

Antidepressant drugs and psychologic treatments are helpful, and response to treatment is similar in all diagnostic groups. Wessely et al suggest that patients seek help from doctors for symptoms, and doctors diagnose diseases to explain them.¹⁴ Greene would recognize this. Wessely and colleagues postulated that "the existence of specific somatic syndromes is largely an artefact of medical specialization. That is to say that the differentiation of specific syndromes reflects the tendency of specialists to focus on only those symptoms pertinent to their specialty, rather than any real differences between patients."^{14p936} Atypical facial pain and temporomandibular pain are in the dental domain, but chronic facial pain should be seen as part of a whole body disorder.

Prognosis and Impact

Treatment is most likely to be effective when the patient's pain is of recent onset.¹⁰ Successful treatment of facial pain of many years' duration is a much greater challenge. There is little understanding of prognosis in these patients, but there is growing evidence for psychologic distress as a consequence rather than a cause of pain,^{15,16} and this distress is likely to contribute to the persistence of symptoms. Such an approach frees Greene from his concern regarding the terms "biopsychosocial" and "multifactorial." Some patients improve quickly with conservative management, including physical therapy, occlusal splints, and antidepressants; others respond to cognitive therapy, hypnosis, and other forms of treatment.² However, improvement is sustained only when an attempt is made to resolve psychologic problems. Greene

correctly asserts that it is not clear who responds to what treatment or, indeed, what problems actually need to be treated. Assessment of disability may lead to more precise treatment guidelines. Only recently has facial pain been examined in terms of disability. Facial pain patients report that pain and fatigue adversely affect their quality of life. Typical problems, such as difficulties in mouth opening, affect their capacity to eat in public and enjoy a full social life. Disability, in terms of impact on mood, speech, self-image, taste, and digestion, has been shown to predict a significant proportion of associated psychologic distress.¹¹ Educational programs are an important part of the care of chronic pain patients.

Conclusions

There is a huge overlap between the symptoms of temporomandibular disorders, chronic pain, and other chronic disorders such as fibromyalgia,¹⁷ and patients rarely fit into rigid diagnostic categories. Greene wisely encourages further research, but states his faith in pathophysiology. While this may unearth the holy grail of etiology, such an endeavor must not be allowed to blight the clinical care of current sufferers, and as no single speciality receives the training required for the differential diagnosis and management of these pain disorders, there is a real need for a multidisciplinary examination of the condition.⁸

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