J Oral Maxillofac Surg
67:935-936, 2009

Temporomandibular Disorders in Surgical Practice: Does Science Support Treatment Decisions?

Arthroscopic surgery of the knee had become the most frequent minimally invasive surgery performed by orthopedic surgeons. Debate had ensued over whether lysis and lavage or arthroscopic arthroplasty provided superior results. The Houston VA medical center developed a study design to address that issue, but like all good randomized clinical trials it needed a placebo group. To blind the placebo group to research subjects and observers, the investigators proposed a sham surgery. Placebo subjects were to be given a general or regional anesthetic, incisions were to be made, but the arthroscope was not to be inserted into the joint and no therapeutic procedure was to be carried out. The institutional review board agreed that the study was meritorious and ethical. The results of the study appeared as the lead article in the *New England Journal of Medicine*.[1] Its findings were that neither treatment group offered improved clinical outcomes over the placebo group. While orthopedic professional groups disputed the findings of the study, in 2003, Medicare decided it would no longer cover arthroscopy for osteoarthritis of the knee.

The experience of our colleagues in orthopedics should alert oral and maxillofacial surgeons to the need for practice based upon sound supporting science. In the field of temporomandibular disorders (TMDs), after 3 decades of research since McCarty and Farrar identified internal derangement of the temporomandibular joint and a procedure to treat it, we are scantly closer to understanding TMDs in clinical practice, their diagnostic features, or appropriate treatment decisions.

It is true that investigations into the molecular aspects of TMDs have identified cytokines associated with inflammatory symptoms. The quality and response of the hard and soft tissues of the region have been extensively studied. Research into the immunology, bacteriology, and local response of TMDs is offering the promise of new treatment. The association of TMDs with systemic disorders has been evaluated. The nature of muscle function and metabolism offer insight into the myogenous nature of many of these disorders. Our understanding of the neurologic and behavioral aspects of pain continues to advance. Despite these advances, most patients being treated for TMDs continue to undergo therapy that was standard in the 1970s. For today's patient with pain and dysfunction of the temporomandibular joint, little has changed.

Wrongly, many clinicians assume this is because there is nothing new in this arena and those traditional methods that depend on blood and plastic remain appropriate contemporary clinical instruments. Contrary to conventional wisdom, there remains a very high level of interest in temporomandibular disorders and treatment is evolving rapidly. Of the 5,321 articles in PubMed on temporomandibular joint surgery, an additional 37 were published in just the first 2 months of 2009. Typically in the field of temporomandibular disorders, of these 37 papers, 8 were case reports or technical notes, 14 were descriptive review papers, and 15 were clinical studies. How does the quality of these 15 human research studies meet the CONSORT and STROBE recommendations for clinical research? Unfortunately just 3 of the 15 clinical studies had any control group. These 3 papers have the scientific strength to offer insights into diagnosis and treatment. Juhl et al examined whether third molar removal increased the incidence of TMDs.[2] Natiella compared the collagen of normal and diseased joints.[3] Saridin et al examined the metabolic activity of patients with clinical hyperactivity.[4] Also of note is that *JOMS* remains the leader in TMD investigation with 9 of the first 15 human research papers in 2009 appearing in *JOMS*.

Despite the extensive contributions of scientists, TMD research is not translating effectively into clinical practice. The peer-reviewed literature alone does not seem an adequate means of advancing treatment of TMDs. The capricious and ill-considered actions of payers have not served our patients well. As a specialty, oral and maxillofacial surgery needs to lead in clinical practice as well as in science. Perhaps it is time for a consensus conference to consider advances in diagnosis and treatment of TMDs and to propose standardized diagnostic criteria and practice guidelines. The conference, like the third molar consensus conference in 1993, can serve as a springboard to multicenter and multidisciplinary research. Most im-

portantly, a consensus conference on TMDs can alert practicing surgeons to the enormous advances that have already been achieved.

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doi:10.1016/j.joms.2009.03.002