Temporomandibular Joint Imaging: Why?

In a recent opinion [1], concern was expressed over the use and abuse of imaging procedures for the diagnosis of temporomandibular joint (TMJ) disorders, referred to as the "TMJ pain-dysfunction syndrome." I believe that "internal derangement of the TMJ" is more appropriate terminology [2, 3]. We do not talk about shoulder, spine, or knee dysfunction syndromes. Clinical investigations explain why TMJ symptoms occur [2–7]. Imaging procedures, particularly MR imaging [2–8], are useful in showing the following: (1) the presence or absence of joint (TMJ) disease, (2) the type and stage of disease that is present, and (3) whether this disease is active or quiescent.

The "relative infrequency of any TMJ disease besides internal derangement" was referred to, as well as the "functional" component of this disorder [1]. This conflicts with recent investigations [3–7]. These patients are no different from other patients who have musculoskeletal pain. With regard to the efficacy (cost-effectiveness) of TMJ imaging, I ask, "What are we looking for, and who is looking?" If either the referring clinician or radiologist (or both) is unfamiliar with TMJ disease, then imaging efficacy assuredly will be reduced. With regard to "how" to image the TMJ, I have found that a short radiographic and lateral tomographic series is a cost-effective screening procedure [3, 8]. MR is the tertiary imaging study of choice for the TMJ [2–8].

The opinion [1] refers to the disparity that "has evolved between our ability to image and our understanding of the etiology, functional pathology, natural history, and proper treatment of disk dislocation and other derangements of the TMJ." This concern is absolutely correct. The field of TMJ diagnosis and treatment is undermined by shaky scientific foundation that blends fact and fancy—has been expressed more clearly by Dr. Schellhas. Setting the controversy for oneself over whether a sound scientific argument exists that disorders of the TMJ are largely organic rather than functional is difficult if the plethora of published articles in the "scientific" literature is perused. Similarly distressing is the disparity of opinion about the methods claimed to be effective in treating the large group of patients who have TMJ disorders.

The position Dr. Schellhas and his colleagues have taken is that indeed TMJ symptomatology has an organic basis, which forms the basis of rational treatment approaches. His statement that the TMJ is subject to the same types of diseases as the appendicular joints is a fact that I recognize as well. I have no doubt that derangements of the TMJ are related to occlusal problems and other disturbances of jaw function, even though at this point not all the necessary details

Kurt P. Schellhas
Center for Diagnostic Imaging
Minneapolis, MN 55416

REFERENCES

Reply

Regarding the letter of response by Dr. Schellhas to my opinion entitled "Imaging the Temporomandibular Joint, 1989" [1], I would like to make the following comments: First, my motivation for writing the article—the belief that much of the diagnosis and treatment of disorders of the temporomandibular joint (TMJ) in this country has a shaky scientific foundation that blends fact and fancy—has been expressed more clearly by Dr. Schellhas. Setting the controversy for oneself over whether a sound scientific argument exists that disorders of the TMJ are largely organic rather than functional is difficult if the plethora of published articles in the "scientific" literature is perused. Similarly distressing is the disparity of opinion about the methods claimed to be effective in treating the large group of patients who have TMJ disorders.

The position Dr. Schellhas and his colleagues have taken is that indeed TMJ symptomatology has an organic basis, which forms the basis of rational treatment approaches. His statement that the TMJ is subject to the same types of diseases as the appendicular joints is a fact that I recognize as well. I have no doubt that derangements of the TMJ are related to occlusal problems and other disturbances of jaw function, even though at this point not all the necessary details
of that relationship are understood, and that joint disorders other than internal derangements occasionally occur.

The difficulty I have is that the physician-dentist community at large is not united in its approach to TMJ problems. This stems in part from the diversity of specialists and generalists who involve themselves in this area of medicine; the TMJ has been claimed by everyone but not really by anyone. It also comes about because ignoring the TMJ in medical and dental curricula causes inadequate education about the TMJ. A third reason is the quagmire of misinformation that mixes fact and fancy. How do you get such a diverse group to agree that the TMJ is important? A fourth reason is that the medical world has been neglecting the TMJ in its primary care activities.

The TMJ is an important joint, and its function is vital to many aspects of the patient’s overall health. It is a joint that is involved in many different medical problems, and it is often the source of pain that is difficult to localize.

I have been working on this issue for some time, and I believe that we need a standard terminology to refer to any abnormality in which disk material projects into the spinal canal. This would include true nuclear herniation as well as what now is termed disk bulging. This would make it possible to use the expression disk protrusion the same way the word “osteopenia” is used in conventional spinal radiology.

My reasons for these suggestions are as follows: (1) In many cases, I find it difficult to decide if herniation of the nucleus pulposus is present; (2) if herniation may not be the only clinically significant disk abnormality (i.e., annular protrusion may be clinically significant); and (3) the meaning of the word protrusion is ideal for the use I propose. Also, it does not have the benign connotation of the term disk bulging (a consequence of years of reports on CT scans).

I am not my intention to have radiologists avoid making a decision by using a term such as disk protrusion. Certainly, in many instances, they can be sure that the herniated nucleus pulposus is present. It is just that we need an expression that allows us the flexibility of describing a significant extradural disk abnormality independent of whether we think the abnormality is a herniated nucleus pulposus. I think that the term disk protrusion serves this purpose.

Alfred L. Horowitz
Resurrection Medical Center
Chicago, IL 60631

REFERENCE


Reply

I fear that Dr. Horowitz’s simplification is exactly the thing that we should avoid. I agree that a disk that goes beyond its margins is, by definition, a protruding disk. However, the protrusion may be “generalized,” which denotes a degenerative process but does not necessarily imply that a lesion is or is not clinically significant. Also, the protrusion may be “focal,” which by definition would be a herniation of the intervertebral disk. This does not indicate whether the lesion is clinically significant. The herniation could lie between the roots in the midline without compressing any root, or it could be so small that it does not displace or compress the roots. The conclusion that a generalized protrusion of the intervertebral disk is present should be followed immediately by the statement, “This most likely is due to disk degeneration,” to make the interpretation clear.

Juan M. Taveras
Massachusetts General Hospital
Boston, MA 02114

Letters are published at the discretion of the Editor and are subject to editing.

Letters to the Editor must not be more than two double-spaced, typewritten pages. One or two figures may be included. Abbreviations should not be used. Material being submitted or published elsewhere should not be duplicated in letters, and authors of letters must disclose financial associations or other possible conflicts of interest.

Letters concerning a paper published in the AJNR will be sent to the authors of the paper for a reply to be published in the same issue. Opinions expressed in the Letters to the Editor do not necessarily reflect the opinions of the Editor.