LETTERS TO THE EDITOR

Orthodontics and TMJ disorders

To the Editor:

I am compelled to respond to Dr. Reynders "Review of the Literature" article entitled "Orthodontics and Temporomandibular Joint Disorders" that appeared in the June 1990 issue of the AM J ORTHOD DENTOFAC ORTHOP. It is unfortunate that the profession continues to be burdened with material of this nature under the guise of serious scientific investigation.

The author has conducted a study with a thinly veiled, predetermined conclusion involving four interrelated objectives:

1. To substantiate the denial of any relationship between temporomandibular joint disorders and dental malocclusion.
2. To attempt to dissociate orthodontic treatment, in general, from having a causal relationship to TMJ disorders.
3. To exonerate the traditionally oriented orthodontic community employing fixed appliances and retraction therapy from the charges of iatrogenically creating TMJ disorders.
4. To discredit authors whose writings and clinical experiences claim (a) a strong relation between TMJ disorders and dental malocclusion, (b) stable orthodontic results with enhanced facial and dental cosmetics and no untoward TMJ by-products resulting from their treatments, (c) routine success in the elimination of TMJ disorders by means of their "physiologic" approach to treatment, and (d) that the extraction of teeth and retractive orthodontic methods commonly employed in the treatment of dental malocclusion are primary causes of TMJ disorders.

Dr. Reynders, a former research associate and clinical instructor in the Department of Orthodontics of Northwestern University, has divided 91 publications from 1966 through 1988 that are concerned with the relationship of orthodontics to temporomandibular joint disorders into three basic categories—viewpoint publications, case reports, and sample studies.

Of the 91 publications, 55 are classified as viewpoint publications, a group that is discounted by the author as being unworthy of serious consideration, essentially because of an alleged lack of controls. I believe it is no accident that most of the viewpoint group is comprised of authors who hold conventional treatment to be re-

sponsible for inciting TMJ disorders and who also claim success in eliminating these problems by means of their philosophy of treatment.

Among the 55 viewpoint publications is an article by this writer entitled "Clinical Implications of Mandibular Repositioning and the Concept of an Alterable Centric Relation." Another article that was omitted totally was "Physiologic Response to Dental Malocclusion and Misplaced Mandibular Posture: The Keys to Temporomandibular Joint and Associated Neuromuscular Disorders," by Levy in *Basal Facts, The International Journal of Biologic Stress and Disease, 1981.*

The second group characterized by Dr. Reynders as case reports comprises 30 publications. Case reports generally fare about as poorly as the viewpoint publications for a variety of stated reasons. It is interesting to note that "23 of the 30 case reports conclude that orthodontic treatment can have a curing effect on temporomandibular disorders." Dr. Reynders does not discuss what manner of orthodontics claims responsibility for the reported cures.

Sample studies comprise the third group of publications. There are only six sample studies cited, two of which are essentially repeats of each other by the same main author, C. Sadowsky in 1980 and 1984, respectively. The sample study group clearly enjoys Dr. Reynders' favor, although two of the six authors who found that orthodontics can cure TM disorders were suspect in Dr. Reynders' view.

The author's personal bias, overall purpose, and frustration, evident throughout the publication, is neatly summed up in his conclusion: "it is surprising that, although some of these carefully designed sample studies were published in the early 1980s, the authors of viewpoint publications and case reports have largely ignored these findings and have continued to saturate the literature with their biased data."

Contrary to Dr. Reynders' charge of ignoring his sample studies, a primary purpose of this response is to address directly two of the six studies this writer is familiar with, the Sadowsky and Begole report (Am J Orthod 1980) and the Sadowsky and Polson report (Am J Orthod 1984). As previously indicated, the two articles are essentially a repeat of the same theme.

Two groups of patients were observed and evaluated for signs and symptoms of TMJ disorders over a period of time. One group of patients displaying dental malocclusion ("abnormal maxillomandibular relationships as well as malaligned teeth") were treated by means of conventional fixed appliance orthodontics ("retraction and/or extractions"). A roughly equal number of patients also displaying dental malocclusion were not treated and served as the control. The prevalence of TMJ signs and symptoms of the two groups were subsequently compared and found to be more or less equal. Dr. Sadowsky's conclusion therefore was that no relationship existed between those patients orthodontically treated for the "correction" of their dental malocclusion and those who were untreated. These studies were intended to exonerate the orthodontic community employing conventional orthodontic treatment from the charges of having iatrogenically incited TMJ disorders as a consequence of their treatment.

The conclusions reached in the Sadowsky studies are important indeed, but for a different reason than that intended by their authors or cited by Dr. Reynders and others. They establish not an *exoneration,* but an *indictment* of the "fixed-mandible school of orthodontics" that has concerned itself primarily with the alignment of teeth while perpetualizing maxillomandibular mismatches by masking procedures involving tooth extraction and surgery (Class III surgery excepted).

The Sadowsky treatment results reflect a cosmetically enhanced but continued dental malocclusion (unaltered maxillomandibular relation) and physiologic insult that have merely been masked and are thus worthless as an objective measure of TMJ treatment or cause, except in a negative sense. Dr. Sadowsky's treatment experience differs totally from that of dentofacial orthopedists who are able to identify TMJ causality and routinely eliminate symptoms by improving the neuromuscular/skeletal system relationship while providing dental and facial cosmetics, simultaneously. Dentofacial orthopedists rendering these services frequently have the opportunity to demonstrate the relationship between malpositioned jaws (dental malocclusion) and TMJ disorders by changing the mandibular posture, thereby inducing or eliminating symptoms of a TMJ disorder virtually at will.

A physiologic curative potential is available to the function-oriented orthodontist (dentofacial orthopedist) that has nothing to do with the issue of fixed or removable appliances. The orthodontist's unique opportunity and ability to correct maxillomandibular mismatches, and by extension the associated muscles and temporomandibular articulation, becomes routinely feasible by proper tooth movement and the reshaping of the dental arches in a conducive manner that intimately involves the patient's occlusal proprioception.

The issue is not whether fixed or removable appliances are employed (an unrelated and unimportant point belabored by Dr. Reynders); it is whether the entire stomatognathic system consisting of teeth, jaws, associated muscles and ligaments, and the TMJ articulation is considered in rendering care. Orthodontic treatment *does not* cause or cure TMJ disorders. Orthodontic treatment does, however, have the *potential* to do either, predicated on whether the treatment enhances physiologic homeostasis or produces physiologic insult.

A crucial aspect of treating many dental malocclusions requires the corrective physiologic realignment not just of the teeth but of the mandible as well. My experience concerning the intimate relationship of dental malocclusion and TMJ disorders spans more than 25 years and involves the treatment of hundreds of orthodontic/TMJ cases, most of which are fully documented,

stable, and free of symptoms. As with the work of many others who employ physiologic as opposed to mechanistic concepts in their treatment, the questions raised in this review have long since been settled. Successful treatment requires that we follow the anatomic requirements of our patients; conventional orthodontics mandates that treatment structure the patient's dentition to conform to arbitrary manmade standards, often at the expense of the TMJ and associated neuromusculature.

It is ironic, but predictable, that the void created by the orthodontists' abdication and denial of his role and responsibility in TMJ disorders would be filled by others less equipped. At the present time most treatment is directed to palliative symptom removal. Patients who have this affliction and are treated by other than a function-oriented orthodontist can at best expect a lifetime of pain management rather than cure.

The basic sciences have long since discredited the fixed-jaw hypothesis in all areas of dentistry (e.g., P.H. Levy, guest editor "An Alterable Centric Relation in Dentistry") *Dental Clinics of North America*, July 1975.) The real question of Dr. Reynders is "How much longer can those who control the dental school curriculum and the major professional publications suppress the truth in a rising tide and awareness of iatrogenic disease?"

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