Importance of a stable maxillomandibular relation

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Would you feel secure if you knew your home was built on a shifting foundation?

Would you meticulously fit the gears in a car's transmission if you knew the shafts that supported these gears did not have firm supports in the gear box?

We have far too much common sense to do any of these foolish things. We know the end results would be failures.

How can we, as dentists, justify our precision restorative procedures when the dentures are fabricated on an articulator which has been set to mimic a sick or unstable temporomandibular joint (TMJ)? Can we make accurate dentures or restorations of dentitions when the TMJ is unstable? I maintain that such procedures may result in irreversible harm to patients.

Fortunately, most patients have considerable physiologic adaptability, because many dental restorations are made to whatever occlusal relation the patient may have. The dentist may be sufficiently sophisticated to avoid secondary problems, even though he makes only a cursory evaluation of the condition of the TMJ.

(1) He could possibly have sufficient knowledge and experience to judge the stability of the joint, but this could be only an educated guess.

(2) The extent of the restorative procedures may be minimal.

(3) Patient motivation may be so lacking that it is necessary to go ahead and hope for the best or to refuse to treat the patient.

(4) Economic status and available time on the part of the patient may preclude the possibility of rendering the highest quality of dental service.

TERMINOLOGY

For clarification, this article requires some comments on dental terminology. Sophisticated communication among dentists is made more difficult due to variations in the concepts of the meaning of some dental terms.

Read before The Pacific Coast Society of Prosthodontists, Palo Alto, Calif.

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The definition of centric relation, as defined by the *Glossary of Prosthodontic Terms*, is not in keeping with current available anatomic and clinical knowledge.[1] *Webster's Third New International Dictionary* states clearly that centric may be used as a noun or an adjective. Many of us feel that, as presently used in the dental literature, the term "centric" is truly a basket case.

"Centric occlusion" is another term that needs an improved definition. There are persons who can fully intercuspate their natural teeth only on one side at a time. This is often true in an advanced Eskimo (Moses) wear pattern.

In the dental literature, it is not uncommon to see the word "eccentric" used to describe mandibular movements, either to or from centric occlusion or centric relation. In reading *Webster's Dictionary*, it would seem that considerable poetic license is used to denote such mandibular excursions.

This dissertation on terminology has been included in this article as a protest against any person or group establishing themselves as dental dictators. The exchange of meaningful dental information is hampered when so much confusion and misuse of the English language exist. We must all remember that it is not necessarily so, just because I or some group says it is so. We must have clinical or authentic research material to substantiate the definition of a dental term.

DEFINING "TEMPOROMANDIBULAR JOINT"

What is a stable temporomandibular joint if we omit true organic pathologic involvement, bacterial infection, congenital growth abnormalities, or meniscus irregularities during translatory excursive movements of the mandible? My own definition is that it is a pain-free joint from which accurately taken maxillomandibular records may be duplicated over a period of several years without changes in the border movements of the mandible.

This definition purposely omits the multiplicity of codicils that would modify it—for example, the bending of the mandible.[2, 3] It also omits the possible changes in the interrelation of the maxillary bones.[4] Cranial osteopaths are acutely aware of many erroneous concepts the dental profession accepts as axioms. The research, as reported by Moffett and co-authors,[5] presents scientific proof that the remodeling of the bones of the TMJ may occur. These remodeling changes would, of course, alter the maxillomandibular relations of the mandible to the maxillae. It has been hypothesized that this is a rather slow process occurring over a period of years. It has also been suggested that this could be a part of the aging process. It has also been hypothesized that these reactions are accelerated by continued trauma to the joint as a result of malocclusion, bruxing, and the like.

LOCATING THE TERMINAL HINGE AXIS

Gnathologists normally locate the terminal hinge axis of the mandible as a basic anatomic landmark. A well-informed gnathologist is quite aware of the degree of inaccuracy possible when arbitrary means are used to locate the terminal hinge axis. This includes the caliper type of equipment, as well as measurements taken from portions of the ear.

Using the kinematically located terminal hinge axis as a starting point, the bruxing relations of the mandible to the maxillae are recorded by numerous pro-