Clinical Perspective

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OROFACIAL MYOLOGY AS IT RELATES TO AN ORTHODONTIC PRACTICE: A PERSONAL VIEW

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I am writing with congratulations to the members of the International Association of Orofacial Myology on the considerable growth that has taken place in the profession in the last few years. I have had the opportunity to use the services of several therapists helping with myofunctional problems, and it has been a valuable experience for me and my patients. I have made a number of observations that I hope may be of some value to you.

Problems of oral muscle posture can delay a patient in achieving a proper relationship of various teeth during orthodontic treatment. Vertical spaces between the upper and lower teeth can usually be forced closed one way or another; however, they will not stay in contact if the tongue or lip is interposed.

I feel that it is imperative that the anterior teeth remain in contact following orthodontic treatment since the incisors and cuspids function as a protection mechanism for the posterior teeth and temporomandibular joint. The teeth function as a mutually protective system in an ideal occlusion. Anterior teeth serve to disengage the posterior teeth in lateral and protrusive movements, while the posterior teeth serve as vertical stops which prevent the mandible from closing with a force that would damage the supporting structures of the anterior teeth.

Electromyographic research by Williamson (Brandt, 1981) has shown that the activity of the masticatory closing muscles is greatly diminished if the posterior teeth are apart. The temporomandibular joint is protected in this mutually protected occlusion scheme since in any protrusive or lateral movement the anterior teeth disengage the posterior teeth and prevent contraction of the muscles. The temporomandibular joints can frequently be over-loaded during bruxing habits occurring during the day or night if this protection mechanism is not intact.

The facial appearance of a patient and social graces during eating are greatly improved when the facial muscles and tongue function are appropriate. Parents are very appreciative when this is accomplished.

Advancements in technique and status for orofacial myology have been delayed by a few unfortunate circumstances, which I will discuss as one man's opinion.

1. The terminology used in the past has been confusing, non-descriptive and unprofessional. Terms such as tongue thrust and reverse swallow, should be eliminated entirely. "Tongue thrust" implies that the problem is an active one only. It omits the consideration that dental anterior or posterior open bite problems may be due to posturing problems of the tongue, airway problems, lip incompetence, tongue size, skeletal discrepancies and

even neurological problems. The term "reverse swallow" deserves very little comment. It does not describe the problem and further confuses the public since the patient is not regurgitating and the parent or patient knows this.

2. The assessment of orofacial myofunctional disorders has been over-simplified. It is unfortunate that therapists have been asked to correct impossible problems and then been subjected to criticism when the problem was not solved. A severe skeletal open bite for instance is a diagnostic problem. If the orthodontist closes the anterior open bite by over-erupting the anterior teeth, the bite cannot be expected to stay closed regardless of therapy. If the anterior teeth are over-erupted with orthodontic mechanics, orthodontic therapy did not treat the real problem, which is frequently over-eruption of posterior teeth. The anterior teeth therefore were in a vertical position which was normal or close to normal to begin with. The skeletal problem may involve deficient posterior facial height or excessive anterior facial height as well as severe antero-posterior problems. Differential diagnosis is essential to determine why the patient has an anterior open bite.

3. Most favorable therapeutic results are obtained when a multidisciplinary approach is used and when the timing of myofunctional therapy is optimum. The orofacial myologist needs to be aware of the factors producing a poor tongue and/or lip position and address all of the issues. This requires a multidisciplinary approach where the orthodontist and the orofacial myologist have excellent communication regarding the case. Airway problems must be carefully assessed and an astute otolaryngologist who is aware of the potential unfavorable facial growth in patients with airway problems needs to be a part of the team. This may mean educating the otolaryngologist (or pediatrician) by means of well documented cases, and making him/her aware of the need for adequate airway. This relationship can be established with certain otolaryngologists, and the result is gratifying. Other professionals, such as physical therapists, frequently need to be members of the team in the management of temporomandibular joint problems.

Appropriate timing of therapy is another ingredient for success. Personally, I prefer to advise parents at the initial consultation appointment that we will be looking at the tongue and lip posture problem and making an assessment of various habits as we proceed. I can then discuss the total problem with the orofacial myologist at a later date, considering all of the factors mentioned

previously. I prefer that both parents be present at my consultation so that all questions can be answered using whatever examples and visual aids are necessary since one or both parents may have "heard" that correcting a "tongue thrust" is impossible. I talk freely about any controversy.

I refer to the orofacial myologist at different stages of orthodontic treatment depending on the problem. If an airway problem is discovered, it is addressed prior to beginning orthodontic treatment. If an anterior open bite is due to poor tongue posture or lip wedging, I usually refer later in treatment when spaces are nearly closed and the oral environment is more favorable for the therapy.

Generally speaking, if there is a space available, the tongue will be there filling the space. In the case where several deciduous teeth are missing in the mixed dentition stage and the permanent teeth are unerupted, I wait until the permanent teeth are at least partially erupted to reduce the available space for the tongue (and make the situation more favorable for the therapist).

The certification program for the orofacial myologist is a major step forward for the profession. It shows concern for quality care and indicates that the therapist is willing to invest extra time and effort regarding personal study, and a willingness to be observed and assessed by their peers while they are working with patients. The written examination should address all of the issues mentioned above and recertification at a specified interval would, I think, be an added major benefit.

In summary, orofacial myology is challenging work. What are some of the ingredients to success?

1. The team approach which was discussed previously. This disorder is typically a multifactorial problem.

2. Commitment of the patient. Motivation is a key ingredient requiring a skilled clinician. If the patient will not cooperate s/he should be dismissed and the orthodontist should be notified of the situation in a written report.
3. Understanding on the part of the patient and parents. Good visual aids are very important, slides before, during and after therapy are helpful. Video taping of the patient helps awareness, reinforces progress and has been shown to be one of the best motivational aids available.
4. Follow-up after the course of treatment is completed. This is critical. Too few therapists include this in their program.
5. Parental support. Patients sense a lack of support very quickly. Having both parents present at the initial exam and spending adequate time to demonstrate the problem effectively and answer questions is imperative. A parent should attend as many treatment sessions as possible.
6. Looking for other habits is essential. The patient, parent, orthodontist and orofacial myologist may be unaware of these through casual observation. Lip wedging, lip sucking, digit sucking and pencil biting would be examples.
7. Support by the orthodontist in the manner of referral, involvement during therapy, and positive feedback to the patient and therapist.

It is well worth striving for the long term benefits that can be provided for our patients. This is an exciting time as all health professionals learn more about human structures and function. By keeping comprehensive records that can be used to teach others as well as to learn oneself, the prospect for an exciting career through the teamwork approach is excellent.

REFERENCE

- Brandt, Sidney. (1981). Dr. Gene Williamson on occlusion and TMJ dysfunction. *Journal of Clinical Orthodontics*, 15(5), 333-350 and 15(6), 393-410.