Habit correction in the growing child

By Dr. Chris Farrell, BDS

The impact of tongue thrust, incorrect swallowing and mouth breathing on dental and facial development has been well documented over the past 100 years. Angle in his 1907 edition noted, 'The influence of the lips is an interesting study and almost every malocclusion has some manifestation of it.'

Many others after Angle, particularly Graber, have observed the impact of these soft tissue influences in perpetuating malocclusion. However, there is still little attention paid to this in orthodontic treatment planning.

Graber and others in this century have observed the need for a more biological approach to orthodontic treatment in view of the published limitations of the mechanical approach of the past. More recently, Otopalik in the AJODO demonstrated the pessimism of the stability of orthodontic and surgical correction. 'My observation over the years is that change is the only constant factor and to expect long-term stability is not possible...Muscle factors, tongue position and function all play a great part and can lead to eventual change of the original problems.'

TREATING SOFT TISSUE DYSFUNCTION

Myofunctional therapy has been advocated since the 1960s as the treatment for tongue thrust and other habits. It has proven to be time consuming with unpredictable results after many hours of therapy. Mechanical treatment like tongue cribs have shown limited effectiveness. The American Journal of Orthodontics, however, does indicate that there is certainly some merit in early myofunctional therapy in the mixed dentition prior to orthodontic treatment, 'although no long-term studies support its benefits.' Most practitioners say it is all too difficult, not significant and go for long or permanent retention periods.

Dysfunction of the soft tissues does have a significant impact on dental and craniofacial development, although there are still those who wish to adhere genetics having the only influence on growth. The presence of a tongue thrust swallow in Class II and open bite case alone would justify a closer look at the impact of treatment of these habits. Also mouth breathers have been shown to be more prone to poor craniofacial growth and malocclusion.

Functional appliances or growth modification techniques are not directed at the treatment of these habits. The use of these techniques is not the subject of this discussion, as they alone evoke great controversy in the profession.

Poor habits that influence the craniofacial and dental development and their treatment have been too long ignored. Incorrect facial growth, overwhelming demand for orthodontic treatment and its instability would suggest there is a need for a simple myofunctional treatment appliance in a modern form to cost-effectively treat these habits before, during and after orthodontic treatment. In some cases, this treatment could eliminate the need for fixed orthodontic treatment. In all cases, it could have the potential to decrease the complexity (extractions) and increase the stability of the orthodontic correction.

Early treatment?

The practice of applying orthodontic treatment once the permanent dentition has erupted with the use of multi-banded techniques has become the predominant approach to treatment of malocclusion by orthodontists worldwide. The American Journal of Orthodontics and Dentofacial Orthopedics in January 2002 devoted the entire edition to compiling the information on the ‘limitations’ of early orthodontic treatment. The current consensus in the former is the correct approach and is not being debated here. However, the same issue did highlight that ‘myofunctional therapy seems to be useful in some situations.' The need for further investigation was noted.

Early myofunctional treatment of these soft tissue influences on malocclusion could bring the favorable results early treatment advocates have promised but so frequently failed to deliver.

A need for review

The assumption that the fixed appliance therapies are ‘the best we can do’ without the need to change is under question. The poor stability of fixed orthodontics with or without extractions has been published time and again. The norm is relapse.

Fixed appliance orthodontics has become an efficient and wide-spread treatment for malocclusion and is certainly a must cost-effective treatment system. Nonetheless, there is still the ‘can we do better’ question from governments and the profession. The question is, can orthodontic resources be made more available to a wider number of children by using no more (and no less) orthodontists?

The early treatment of myofunctional habits in the growing child could be a cost-effective, pre-orthodontic program to correct soft tissue habits in growing children. This should at least decrease the complexity of protracted open bite cases and possibly improve stability of many other cases.

Can we give the next generation a better treatment at less cost? Let us look at the possibilities based on published research over the past 100 years.

A simplified approach to treatment of the soft tissues

The Pre-Orthodontic TRAINER is an appliance system developed by the author more than 12 years ago. The philosophy is not to grow jaws or move teeth. It is primarily an appliance designed to assist in the correction of tongue habits, mode of breathing and lip seal.

Favorable dental changes are achieved, but these are more from the soft tissue changes rather than the orthodontic effect of the soft and flexible universal-sized appliance. There are other versions to use in conjunction with fixed appliances (TRAINER for BRACES-T4B) and another to be used with fixed retainers (TRAINER for Alignment-T4A).

Clearly, from Graph 1, it can be seen that correcting the aberrant forces of the tongue and lips will be beneficial to development of the growing child and for treatment and stability.

The TRAINER system

The essentials of myofunctional therapy are complex but can be focused on a few basic principles. The first myofunctional exercise is to position the tongue tip correctly at rest and to...
obtain lip seal. This is well known among those of the speech pathology profession, who have advocated for many years the power of adjunctive myofunctional therapy for assisting difficult orthodontic cases.

The TRAINER system merely uses a single-size, pre-fabricated appliance to achieve a similar therapy. This removes the need for one-to-one professional training and tedious exercise programs for the child.

Rather than debate the pros and cons of this approach, let us look at how the TRAINER system applied at the mixed dentition stage has improved craniofacial growth, corrected poor habits and dental alignment.

Clearly these selected cases show significant favorable craniofacial and dental changes. This treatment of the soft tissue dysfunction can be implemented before, during and after conventional orthodontic treatment. It is low-cost and low-time treatment. Minimal staff training is required. Can we ignore the potential of this treatment adjunct?

Do we want to improve the craniofacial development of growing children and reduce the requirement for complex orthodontic treatment with extractions and surgery? Correction of the soft tissue dysfunction may hold the key.

The optimum advantage of the TRAINER technique is that it is fundamentally NOT orthodontic. The correction of mouth breathing (Hinz), lip and tongue habits (Angle), and redirecting not growth but muscle forces (Frankel), are the primary objectives of the seemingly unintrusive, flexible appliance system either for the mixed dentition in brackets or in the permanent dentition.

The limitation of patient cooperation is always the argument for not using removable appliances. But one not requiring fabrication, not readily subject to breakages and certainly of low cost can be applied to large numbers of the growing population of which a large percentage will be motivated to comply.

This myofunctional approach is more modern and less time consuming compared with previous methods and is used throughout East and West Europe by orthodontists.

References


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