Habit correction in the growing child

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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’s 1907 edition noted, ‘The influence of the lips is an interesting study and almost every malocclusion has some manifestation of it.’ A

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 AJO/D demonstrated the pessimism of the stability of orthodontic surgery in the UK and the published limitations of the ‘stringent’ view. ‘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 or recurrence 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, did indicate that certain conditions have shown certain merit in early myofunctional therapy in the mixed dentition as an orthodontic appliance, although there exist 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 is still some who wish to adhere genetically having the influence on growth. The presence of a tongue thrust 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 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 of 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 is that 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.

Estimates vary with clinical criteria, but possibly 70 per cent or more of our adolescent population now require orthodontic treatment at some time. It would appear orthodontic resources are overburdened under the current system. It is also questionable whether this is the most cost-effective solution in the long term based on purely scientific criteria. Can we get a better result by concurrently recognising and treating these aberrant muscular forces that may well be driving the course of the malocclusion long after the fixed orthodontic treatment has finished?

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 un intrusive, 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