

LASER STRENGTHENS THE REPAIR OF THE MIDPALATAL SUTURE AFTER RME

Widely spread, studied and used, rapid maxillary expansion (RME) became an important ally of orthodontists. Basically, this procedure takes place with an active phase, where the expander is activated, and a passive phase, when the appliance is kept in place until complete restructuring of the expanded suture and formation of bone tissue. Reducing the stabilization period of these appliances would help the reduction in total orthodontic treatment time and the discomfort caused by the presence of the appliance. While searching for a method that would strengthen this process, Brazilian researchers¹ evaluated, through a study in animals, histological effects of applying the laser in the palatine sutures after maxillary expansion. The results showed that the laser appears to stimulate the repair process of suturing and also osteogenesis. It is noteworthy that, although encouraging, results are primary and obtained in dogs, requiring confirmation in humans.

MINI-IMPLANTS AND MINIPLATES IN THE PALATE ARE EXCELLENT MECHANISMS FOR DISTALIZATION OF UPPER TEETH

It is already clear among us, orthodontists, the effectiveness of mini-implants and miniplates as anchorage for distalization of upper teeth for correction of Class II malocclusion. However, there is still no

agreement regarding which method would be most effective for this procedure. The ones in favor of miniplates argue that the distalization would be more effective with this device, as these are more stable than the mini-implants, and are placed in a distant region of the alveolar bone. On the other hand, proponents of mini-implants argue that these would be equally effective, cost-effective and easily installed and removed by the professional. With these questions, Turkish researchers² aimed to evaluate in a clinical trial with 30 patients, the effectiveness of the pendulum type device supported by mini-implants inserted in the palate, comparing them to the zygomatic mini-plates. The results from this study prove the effectiveness of both methods in terms of distalization of upper teeth. However, the authors emphasize that in the presence of a more severe malocclusion, the zygomatic miniplates would be more effective (Fig 1).

MINI-IMPLANTS INSERTED MANUALLY PRESENT LESS STABILITY THAN THE ONES INSERTED WITH THE AID OF A MOTOR

Considered one of the most brilliant findings of Orthodontics, the mini-implants became popular and a consensus among orthodontists. Despite being an excellent anchorage mechanism, with many clinical possibilities, these devices are defective in terms of stability. The loss of stability of mini-implants hinders



Figure 1 - A) - Pendulum appliance supported in mini-implants. **B)** Zygomatic anchorage. Source: Kaya et al.², 2012.

¹ Professor of Orthodontics, State University of Southwest Bahia. MSc and PhD in Orthodontics, UERJ. Diplomate by the Brazilian Board of Orthodontics and Facial Orthopedics.

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Contact address: Matheus Melo Python
E-mail: matheuspython@gmail.com

the progress of treatment and may take some degree of discomfort to the patient, due to the need of a new insertion. In order to clarify the factors involved in this process, Korean researchers³, from Yonsei University, have developed a retrospective clinical study to evaluate the success rate of mini-implants inserted by manual and motorized methods, besides the influence of gender, age, mini-implant length and insertion sites. The results found in this study revealed that, usually, the success rate was higher when the 8 mm screws were inserted with motor, however, there was no difference when the 6 mm screws were used. Still, the largest mini-implants had a higher success rate. Regarding the location, the highest success rates were found in mini-implants inserted in the maxilla.

SELF-LIGATING BRACKETS DO NOT GENERATE LESS ROOT RESORPTION

Much has been heard about the advantages of the self-ligating brackets compared to conventional ones. Among these advantages, it has been reported: shorter clinical time and reduction in frictional forces, leading therefore the greatest rate of movement at lesser biological damage. When thinking about biological damage from orthodontic treatment, the root resorption — that torments orthodontists since the beginning of the specialty — come to our minds immediately. However, there are few available studies that prove these benefits of self-ligating brackets. Brazilian researchers⁴ at the University of Northern Paraná, developed a study in which incisor root resorption was assessed, during the first 6 months of treatment, in patients treated with conventional pre-adjusted and self-ligating brackets. The results of the CT scan of incisors showed that the two types of brackets examined produce root resorption of similar magnitude.

INCISOR RETRACTION LEADS TO UPPER AIRWAYS NARROWING

Great attention has been paid to the effects of orthodontic treatment on the upper airways, but what would really this influence be? Could the orthodontist favor the improvement of nasal airflow, thus contributing to a better life quality for their patients? Starting from the principle that orthodontics may bring some positive results, we can imagine that some negative ones may also come. During the correction of den-

tal double protrusion, where the retraction of anterior teeth is necessary after extractions of premolars, could size alterations occur in the upper airways? While seeking for an answer to this question, Chinese researchers⁵ from the Department of Orthodontics, Shandong University, evaluated the influence of dental retraction post-extraction in morphology and size of the upper airways through a study of CT scans. The data obtained showed that a large retraction of incisors leads to reduced upper airways. These results proved once again the need for a multidisciplinary approach when treating orthodontic patients (Fig 2).

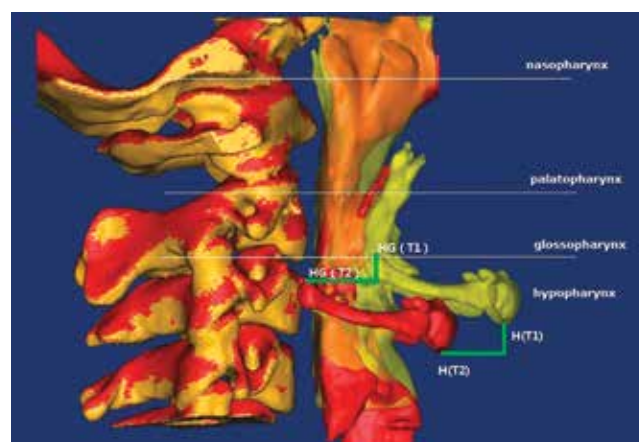


Figure 2 - 3D Model of four parts of pharynx, hyoid and cervical vertebrae, showing the distance between models in T₁ and T₂.
Source: Chen et al.⁵, 2012.

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