

### RAPID AND SLOW EXPANSION ARE EFFECTIVE PROTOCOLS IN MAXILLARY EXPANSION

Since its introduction, in 1860 by Angel, and reintroduction by Haas, in 1965, maxillary expansion became popular among orthodontists throughout the world. Maxillary expansion provides many orthopedic and orthodontic benefits to the patient, including: Maxillary harmony with other facial bones, space in the dental arch for accommodation of teeth, etc. However, despite their widespread acceptance and use, questions remain about the most effective method of activating the expander to promote the best results. To elucidate these questions, Chinese researchers<sup>1</sup> developed a systematic literature review with the aim of comparing the effectiveness of fast and slow maxillary expansion. The results showed that the slow expansion is effective in expanding the maxilla, and the rapid is effective in expanding both the upper and lower dental arches. The authors note, however, that with the slow expansion it is possible to obtain further expansion in the molar area of the maxilla. The data found in this study are of great clinical importance, since, from its knowledge, orthodontists can choose the protocol that best fits their patients, not based on personal preferences, but on scientific evidence.

### STRIPPING CAN PROMOTE TRANSIENT BACTEREMIA IN ORTHODONTIC PATIENTS

The discovery of the presence of tooth size discrepancy by Bolton, in 1958, undoubtedly favored a better finishing of orthodontically treated cases. If present, Bolton discrepancy should be eliminated, either through increments (in the teeth with dental volume deficiency) or stripping on teeth with mesiodistal excess. When the choice is the stripping, there are several methods and tools available. One fact is that the bleeding is always present in this procedure, either for the proximity with the gingival tissue (often

hyperplastic, by lack of proper hygiene) or carelessness of the orthodontist, cutting the gingiva with burs or sandpaper. But this simple procedure would be able to cause damage to patients, with respect to transient bacteremia? Seeking an answer to this question, Turks and Saudis researchers<sup>2</sup> developed a clinical study that evaluated the presence of transient bacteremia before and after completion of stripping in anterior teeth. The results were, in a way, alarming. Although no differences were observed (under the statistical point of view) between the blood samples before and after stripping, one of the 30 evaluated patients had transient bacteremia, with *Streptococcus sanguis*. Because of this isolated case, the authors stress the need to evaluate each case individually, preventing the onset of more serious systemic problems, such as bacterial endocarditis.

### USE OF PROBIOTICS REDUCE THE LEVEL OF STREPTOCOCCUS MUTANS IN ORTHODONTIC PATIENTS

As we all know, orthodontic treatment requires a lot of complicity between patient and orthodontist. For a good resolution of the treatment, collaboration from the patient is necessary, with respect to the frequency on appointments, use of assistive devices and maintenance of proper oral hygiene. The presence of orthodontic appliances with brackets, wires, rubber bands, among others, favors the bacterial accumulation and cause dental caries. Bacteria, especially *Streptococcus mutans*, develop fast in the presence of orthodontic appliances. Getting to the end of treatment with teeth well positioned and without the presence of dental caries is the desire of every orthodontist. But, how to achieve these results without relying this much on the patient? In the search for alternatives for bacterial control of patients using fixed appliances, Indian researchers<sup>3</sup> developed a randomized controlled clinical trial

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which evaluated the effect of probiotics in reducing systemic and topical *Streptococcus mutans* in patients with fixed orthodontic appliances. The results demonstrated that the systemic use of probiotics, as yogurt and probiotic toothpaste, significantly reduces the level of *S. mutans* in plaque around orthodontic brackets. The authors conclude this study stressing the importance of conducting long-term studies to verify the real advantages of these new methods of controlling dental caries.

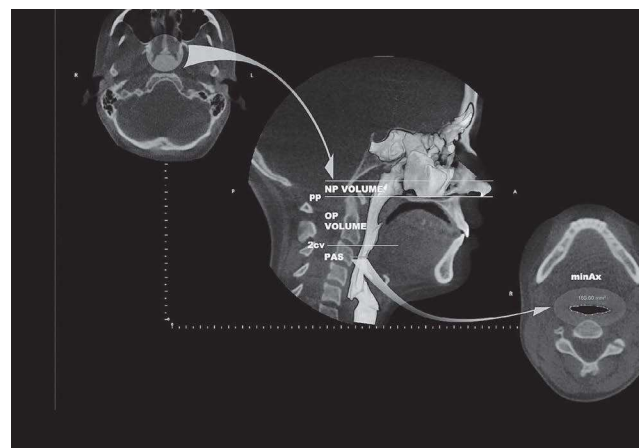
### TOOTH AGENESIS CAUSE IMPACT ON QUALITY OF LIFE FOR CHILDREN

It is not new the importance of teeth in the esthetics of a person. A harmonious smile plays an important role so that a good relationship of physical and facial beauty can be established. The absence of teeth compromises, with no doubt, this harmony. It is known that, in contemporary society, much attention has been paid to esthetics. But what would be the impact of missing teeth in the quality of life of affected individuals? In seeking an answer to these questions, English<sup>4</sup> researchers developed a study that assessed the psychosocial impact of tooth agenesis in children, besides investigating the possible influence of gender, socioeconomic status, severity of agenesis and number of teeth involved, in the quality of life of these individuals. The authors concluded with the completion of this study, that tooth agenesis have significant impact on quality of life for children, impacting them functionally, emotionally and socially. These results reaffirm the role of orthodontists not only for esthetics, but in a larger context.

### RAPID MAXILLARY EXPANSION PROMOTES INCREASE IN THE NASAL AIR FLOW VOLUME

Every day, Orthodontics turns to treat the individual as a whole. The occlusion, which was the main focus in the past, shares space with other aspects nowadays. The inter-relationship of orthodontics with other fields of medicine has never been this usual. It is not uncommon, today, a patient being referred by an otolaryngologist, seeking to fix their respiratory problem. You might wonder, but how could I, being an orthodontist, improve the patient's breathing? Would not the otolaryngologist be responsible for this? It is already known that procedures performed by orthodontists can promote improvements in the respiratory status of our patients. Procedures such as maxillary expansion have been associated with these improvements. But would there be scientific proof for these attributes?

In pursuit of these verifications, Turkish and American<sup>5</sup> researchers have developed a clinical study evaluating the effects of rapid maxillary expansion in the upper airway. The results showed that the rapid expansion of the maxilla creates a significant increase in nasal airspace, but this treatment did not significantly increase the oropharyngeal air volume (Fig 1). The results come to reinforce the importance of the orthodontist in the multidisciplinary treatment of patients with respiratory deficiency.



**Figure 1** - Upper and lower limits of the oropharyngeal and nasal airway volume (NP), posterior airway space (PAS) and minAx (area of greatest narrowing at the base of the tongue). The circle on the left illustrates the last axial section before fusion of the nasal septum with the posterior pharyngeal wall. In the central image, the top line represents the axial section mentioned in the sagittal view (upper border of the NP). In the lower picture on the right, the area represents the PAS in axial view (pp = line through the palatal plane, 2cv = line passing (anterior-inferior) over the second cervical vertebra and parallel to pp). (Source: El, Palomo<sup>5</sup>, 2013).

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