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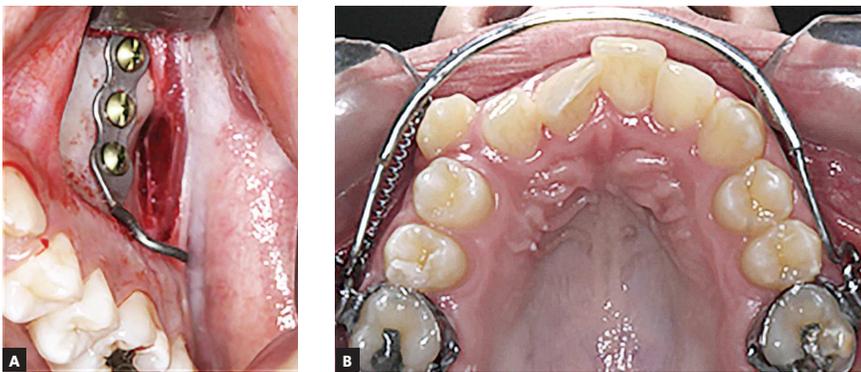
### SKELETAL ZYGOMATIC-SUPPORTED DEVICE IS EFFECTIVE FOR THE CORRECTION OF SKELETAL CLASS II MALOCCLUSION

Since the early days of Orthodontics as a specialty, the treatment of unilateral Class II malocclusion is effectively performed with the use of asymmetrical extraoral devices. However, due to the widespread appreciation of esthetics by the society, the use of extraoral devices has become increasingly difficult. In this perspective, we note the rise of intraoral devices like Distal Jet, Pendulum, First Class, Jones Jig, Keles Slider, Wilson arches, and Hilgers, which, though showing satisfactory results, appear to have side effects like tooth movement and crown inclination. With the emergence of skeletal anchoring devices in the form of mini-implants and miniplates, a new perspective emerged with less mechanical and esthetic compromising. Among the available systems within this proposal is the Zygoma-Gear appliance (ZGA; GAC

International, Bohemia, NY) (Fig 1). With the development of this system, doubts arose about its effectiveness. Thus, Turkish researchers have proposed a study<sup>1</sup> that clinically evaluated 21 patients with asymmetric Class II malocclusion treated with the Zygoma-Gear system. The authors concluded that the evaluated system is an effective method for unilateral distalization with no anchorage loss.

### VIBRATION DOES NOT INCREASE ROOT RESORPTION DURING ORTHODONTIC TREATMENT

The search for rapid orthodontic treatments with less discomfort to the patient gave rise to a new auxiliary modality associated to the orthodontic treatment: supplemental vibrational force. Idealizers of this current of thought propose that vibration accelerates the orthodontic movement and reduces discomfort between activations. In spite of divergences



**Figure 1** - A) Insertion of the zygomatic anchor plate used for distalization. B) Application of the Zygoma-Gear appliance for unilateral maxillary molar distalization. Source: Kilikis et al,<sup>1</sup> 2016.

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in the literature as to the effectiveness or not of this therapy, one thing is clear: the need to evaluate, with well-designed studies, the beneficial and harmful effects of its use. Among the latter, root resorption is particularly mentioned. Therefore, a study<sup>2</sup> evaluated root resorption (Fig 2) in orthodontically treated cases, with addition of vibration, by means of a clinical randomized controlled trial. The results showed that the use of supplementary vibration for 20 minutes per day does not affect the level of resorption in adolescent patients during the phase of alignment with fixed orthodontic appliances. The authors emphasize that additional trials with adequate sample size are needed to truly confirm the possible impact of vibrations on root resorption. What can be inferred from these results is that if it does not benefit, it does not harm either.

### RAPID 3D SUPERIMPOSITION FOR GROWING PATIENTS: A NEW PERSPECTIVE FOR ORTHODONTICS

3D technology has proven to be one of the greatest discoveries of any medical field. In Orthodontics, the diagnosis has become more accurate, reducing complications during the treatment. 3D images are also an important tool in the evaluation of treatment results, especially in cases where it is necessary to evaluate whether there has been growth or not. Despite constant advances in the area, access to image superimposition tools is still restricted. This fact can be attributed to difficulties in accessing the programs and/or in mastering the superimposition techniques, which are based on superimposing a point, a surface or voxels — the latter being considered the best because it is not necessary to create a point or surface, making the process more precise. However, the process still demands time for its execution. From this perspective comes a new methodology that promises precision and agility. The authors of a recent study<sup>3</sup> conducted an important survey which evaluated the accuracy of this new 3D superimposition method in growing patients (Fig 3). The results revealed that rapid superimposition was accurate to assess dento-alveolar changes and structures near the register area. Still, the authors emphasize that the evaluation of the condyle and mandibular ramus areas present limitations and that improvements are needed.

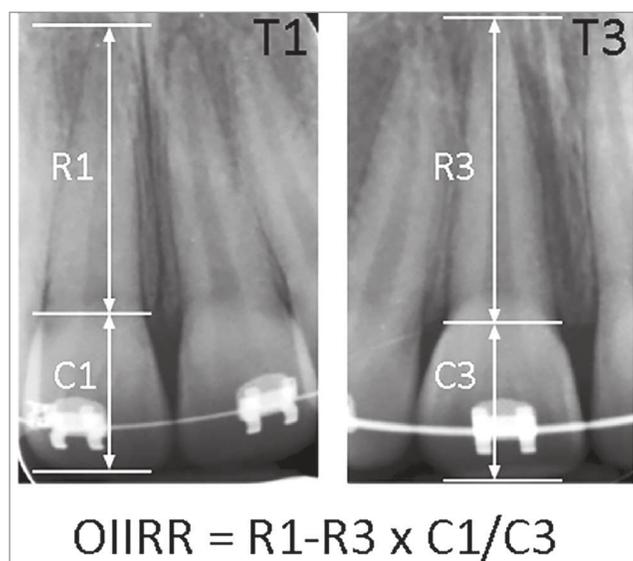


Figure 2 - Measurements carried out to evaluate root resorption. Source: DiBiase et al,<sup>2</sup> 2016.



Figure 3 - Example of superposition in the mandibular region: pretreatment CBCT (green) and treatment progress (red). The superposition shows the effects of the orthodontic treatment on a 13-year-old patient with two retained and impacted molars. Source: Koerich et al,<sup>3</sup> 2016.

## 50% WHITE VINEGAR PROVED EFFECTIVE IN DISINFECTING TOOTHBRUSHES

Despite the advances in materials used to prevent dental caries, this disease is still prevalent in some populations. It is known that tooth decay is infectious and highly transmissible, resulting in irreparable damage to the dental tissues. Caries transmission occurs through intimate contacts by kissing, blowing on food and sharing cutlery and toothbrushes. Finding alternatives that minimize the transmission of infectious agents is our duty as health professionals. From our area of action, a question is pertinent and current: what would be the best method to disinfect toothbrushes? The role of transmissivity of infectious agents by toothbrushes has already been well described and documented in the literature. Seeking for an answer to this question, Turkish researchers have proposed a study<sup>4</sup> that evaluated the following disinfection methods: 0.12% chlorhexidine, 2% sodium hypochlorite, mouthrinse containing essential oils and alcohol, and 50% white vinegar, in toothbrushes contaminated with *S. mutans*, *S. aureus*, *E. coli*, and *L. rhamnosus*. The results of the study revealed that the most effective method to eliminate bacteria was 50% white vinegar, which is also a low-cost product, easy to access and appropriate for domestic use.

## APPLICATION OF CHLORHEXIDINE VARNISH IS EFFECTIVE IN REDUCING THE INCIDENCE OF CARIES IN ORTHODONTIC PATIENTS

It is known that tooth decay is prevalent and present in our society. Oral hygiene care combined with the lack of previous contamination avoids its appearance. However, in the presence of orthodontic devices, keeping all dental surfaces dirt-free becomes difficult. Hence, we should use products that minimize this lack of cleaning, as, for example, varnish containing chlorhexidine. Nevertheless, there is a dichotomy of opinions and evidences regarding the real role of these varnishes in reducing the incidence of dental caries in orthodontic patients. In seeking to answer this clinical question, Brazilian researchers developed a systematic meta-analysis review<sup>5</sup>. After the application of strict criteria in the selection of the articles, the authors concluded that varnish containing chlorhexidine is an effective means of reducing the incidence of caries during fixed orthodontic treatment. We can use the data coming from this important study and extrapolate them to our practices in order to reduce the problem of white spots.

### REFERENCES

1. Kilikis D, Celikoglu M, Nur M, Bayram M, Candirli C. Effects of zygoma-gear appliance for unilateral maxillary molar distalization: A prospective clinical study. *Am J Orthod Dentofacial Orthop.* 2016 Dec;150 (6):989-96.
2. DiBiase AT, Woodhouse NR, Papageorgiou SN, Johnson N, Slipper C, Grant J, et al. Effect of supplemental vibrational force on orthodontically induced inflammatory root resorption: A multicenter randomized clinical trial. *Am J Orthod Dentofacial Orthop.* 2016 Dec;150 (6):918-27.
3. Koerich L, Weissheimer A, de Menezes LM, Lindauer SJ. Rapid 3D mandibular superimposition for growing patients. *Angle Orthod.* 2016 Oct 21.
4. Basman A, Peker I, Akca G, Alkurt MT, Sarikir C, Celik I. Evaluation of toothbrush disinfection via different methods. *Braz Oral Res.* 2016;30.
5. Okada EM, Ribeiro LN, Stuaní MB, Borsatto MC, Fidalgo TK, Paula-Silva FW, et al. Effects of chlorhexidine varnish on caries during orthodontic treatment: a systematic review and meta-analysis. *Braz Oral Res.* 2016 Nov 28;30 (1):e115.