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BRUSHING WITH WATER IS ENOUGH TO CLEANSE REMOVABLE ESSIX RETAINERS

The search for esthetics during the correction of malocclusions has become constant among orthodontic patients. The desire to have their malocclusions corrected without compromising aesthetics is constant. When we talk about orthodontic treatment we cannot forget that the containment phase appears as one of its stages. With the proposal of improving the aesthetics of appliances, clear retainers have been used, which have gained adherents around the world by virtue of its easy technique and superior aesthetics. However, as in any other orthodontic device, proper hygienization is necessary in order to avoid bacterial proliferation and, consequently, the alteration of the retainer. The cleaning methods are diverse, ranging from simple brushing with water to immersion in specific cleaning solutions. With the proposal of evaluating the best cleaning method for these orthodontic devices, Saudi researchers developed a study¹ comparing the effectiveness of brushing Essix retainers with water and brushing followed by immersion in a solution containing commercial cleansing tablets. The results obtained revealed that the use of chemical cleaning tablets after mechanical cleaning does not

reduce the bacterial count in Essix retainers when compared to the use of mechanical cleaning alone (Fig 1). Still, the authors highlight that the tablets appear to be effective against the “coccus” species bacteria.

THE USE OF EXTRAORAL APPLIANCES REDUCES THE SPACE FOR ERUPTION OF THE UPPER THIRD MOLARS

The treatment of Class II skeletal malocclusion is already well documented and reported in the literature. Several treatment modalities are described, ranging from mandibular protractors to extraoral appliances. Extraoral appliances are seen as the gold standard in the treatment of this malocclusion due to greater skeletal alteration with minimal denture compensation. Skeletal and facial improvements are evident when using these devices, however, doubts persist regarding the space for eruption of the third molars after their use. There is a dichotomy of opinions regarding the maintenance or even reduction of the space available for eruption of the third molars. In the search for a response to this clinical question, Belgian researchers developed a study,² whose purpose was to evaluate the effects of orthodontic treatment with and without extraction with the use

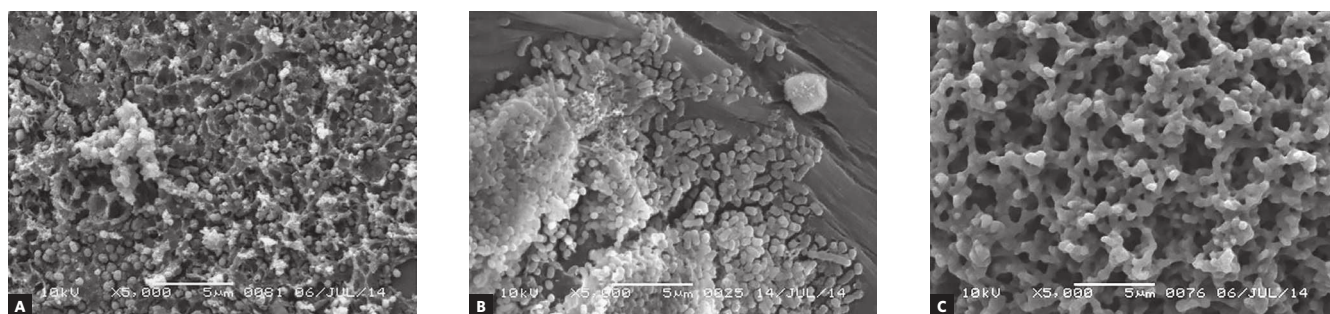


Figure 1 - Scanning electron microscope image on the test side: A) Corega®, B) Kukist®, and C) Retainer Britet®. Source: Albanna et al.¹ 2017.

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of extraoral appliance in the position and space available for the eruption of the upper third molars in Class II children (Fig 2). After analyzing the data, the authors concluded that the use of extraoral appliances in growing patients affects the space available for the upper third molars. However, the orthodontic treatment does not influence the angulation, vertical position and stage of development of the upper third molars. Thus, it is always important to keep the third upper molars in mind at the beginning of the treatment.

ANGULATION OF THE INCISORS ALTERS THE PERCEPTION OF THEIR COLOR

Who among us has never encountered patients' inquiries that their teeth have altered color after orthodontic treatment? Eating habits as well as lack of good hygiene can contribute to such changes. However, can

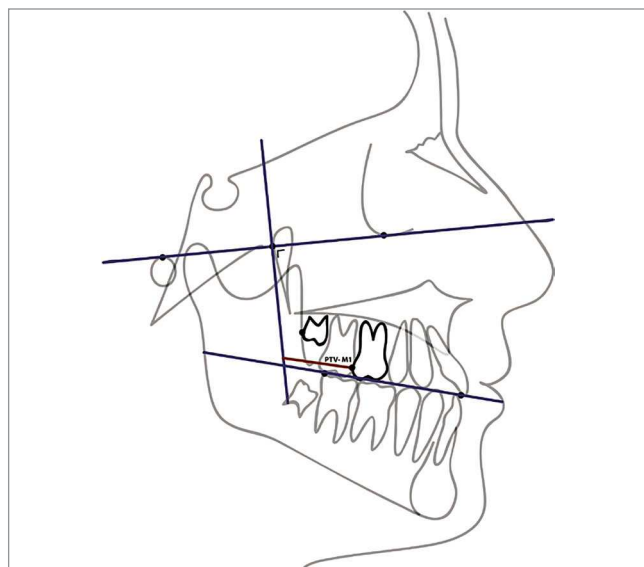


Figure 2 - Cephalometric analysis to verify the space for eruption of the upper third molar. Source: Miclotte et al,² 2017.

orthodontic treatment do so, more specifically the position of the teeth? Would the angulation of the teeth affect the perception of their color? In the search for a response to this clinical question, Swiss researchers developed a study,³ whose objective was to evaluate how much the degree of proclination of the incisors would alter the color of the anterior teeth. The study was performed with 40 youths who were analyzed with the smile in the natural position of the head and with angulations that varied from -15 to $+15^\circ$. The results obtained with this study revealed that when there is an orthodontic alteration in the inclination of the incisors there is a change in the perception of the color of the teeth (Fig 3). The authors draw attention to the fact that, in addition to the functional indications, it is necessary to obtain well positioned incisors to obtain excellent aesthetic results.

CONDYLAR ALTERATION AFTER THE EXTRACTION OF PREMOLARS AND INCISOR RETRACTION

In the past, Orthodontics focused on dental intercuspation only at the end of the orthodontic treatment. With the advancement of science, new diagnostic technologies have emerged, making it possible to verify that orthodontic corrections affect not only the teeth but also the whole craniofacial complex. Temporomandibular joint dysfunctions have often been associated with malocclusions and, in this perspective, it is assumed that by altering the occlusion, the TMJ would change position. Among the different modalities of orthodontic treatment, extraction of premolars is especially mentioned, followed by the retraction of incisors. This treatment modality is very common in cases of bimaxillary dental protrusion and in the presence of negative discrepancy, where extraction is a valid and widely used option. But considering the relationship between occlusion



Figure 3 - Sample photographs taken using standard illumination and retractors, at angles of $+15$, 0 and -15 degrees of the Frankfort horizontal plane. Source: Ciucchi et al,³ 2017.

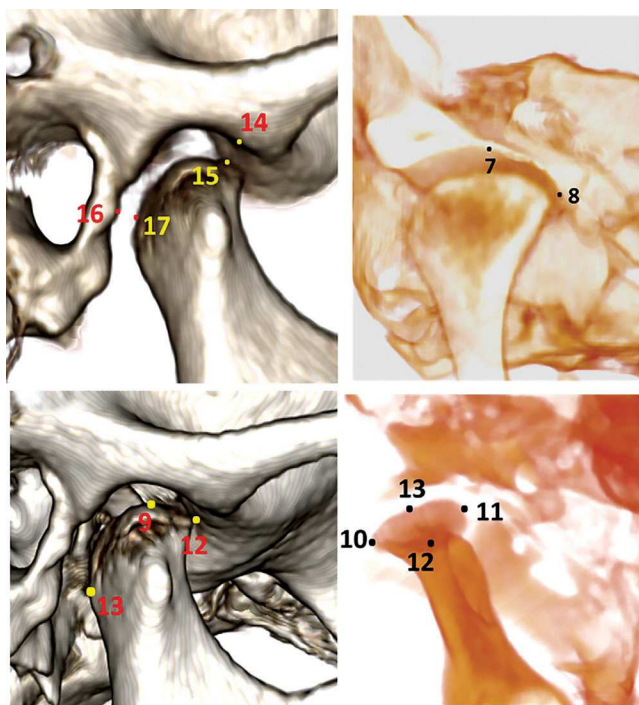


Figure 4 - Image of the temporomandibular joint in cone-beam computed tomography. Source: Alhammadi et al.⁴, 2017.

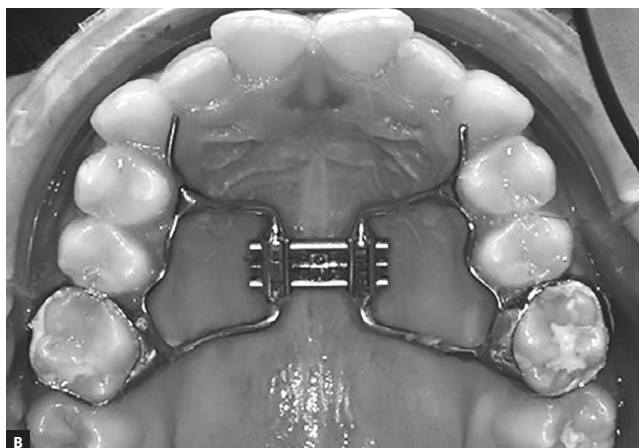
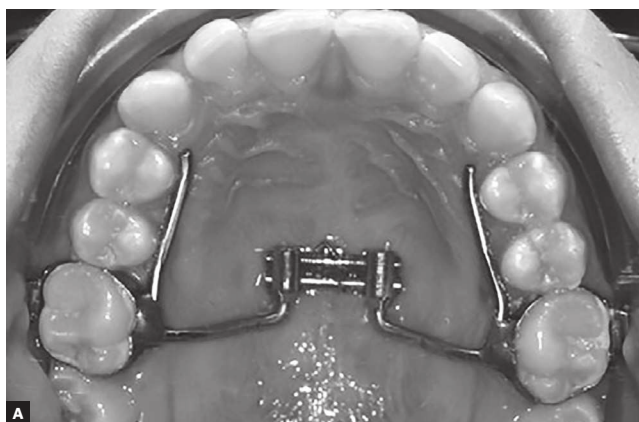


Figure 5 - Evaluated appliances: Hyrax expander with two (A) and four arms (B). Source: Biondi et al.⁵ 2017.

and TMJ, what would be the immediate repercussions on the joint after premolar extraction and incisor retraction? In the search for an answer to this question, Egyptian and Saudi researchers developed a study⁴ using computed tomography (Fig 4). The authors concluded that after extraction of the premolars and retraction of the incisors, a posterior positioning of the condyles occurs, however, the authors point out that in order to be clinically significant, future studies are necessary.

PHONETIC CHANGES DURING RAPID MAXILLARY EXPANSION

The treatment of maxillary transversal problems is already established in the literature and the rapid expansion of the maxilla figures as the gold standard in these corrections. After installation of the disjunction device, whether Hass or Hyrax, phonetic alteration is the first noted clinical change. The presence of the device makes it difficult to correctly position the tongue. Although clinical experience shows alteration with the use of expander devices, scientific evidence for such an occurrence still lacks. In search of scientific subsidies for these phenomena, Italian⁵ researchers developed a clinical study using two types of Hyrax expanders (two and four arms) (Fig 4). An acoustic analysis was performed before, during and after rapid maxillary expansion. The results of the study showed that the RME causes a slight phonetic alteration in the parameters of consonants and vowels. The two-arm Hyrax devices caused less change than the four-arm Hyrax due to their lower volume.

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