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ASYMMETRIC EXTRACTION FAVORS INCREASED SPACE FOR THIRD MOLAR ERUPTION

Third molars have been vilified over the years, and their early extraction has become a treatment protocol for many professionals unaware of their importance. The third molar can be considered a "spare tooth" when any posterior tooth is missing. Some studies have been dedicated to evaluating the space available for the eruption of third molars in the presence of the most diverse malocclusions; however, no study has yet attempted to determine what this space would look like after the Class II malocclusion treatment with asymmetric extraction. In order to fill this gap in the literature, a group of Brazilian researchers performed a study[1] that aimed to assess changes in the angulation of third molars and their available space following treatment of Class II malocclusion with subdivision by means of asymmetric premolar extractions. For this purpose, a sample of 53 patients

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divided into groups was collected: group 1 (Class II malocclusion, subdivision, Type 1) and group 2 (Class II malocclusion, subdivision, Type 2). In group 1, extractions were performed in the two maxillary quadrants and the mandibular quadrant on the Class II side, in 37 patients. In group 2, extraction was performed only in the maxillary quadrant of the Class II side, in 25 patients. Panoramic radiographs were used to assess the angulations of the third molar and the space available for its eruption before and after treatment (Fig 1). The results of the study demonstrated that both groups had better angulation and greater available space for third molar eruption in the extraction quadrants, when compared to the homologous non-extraction quadrants.

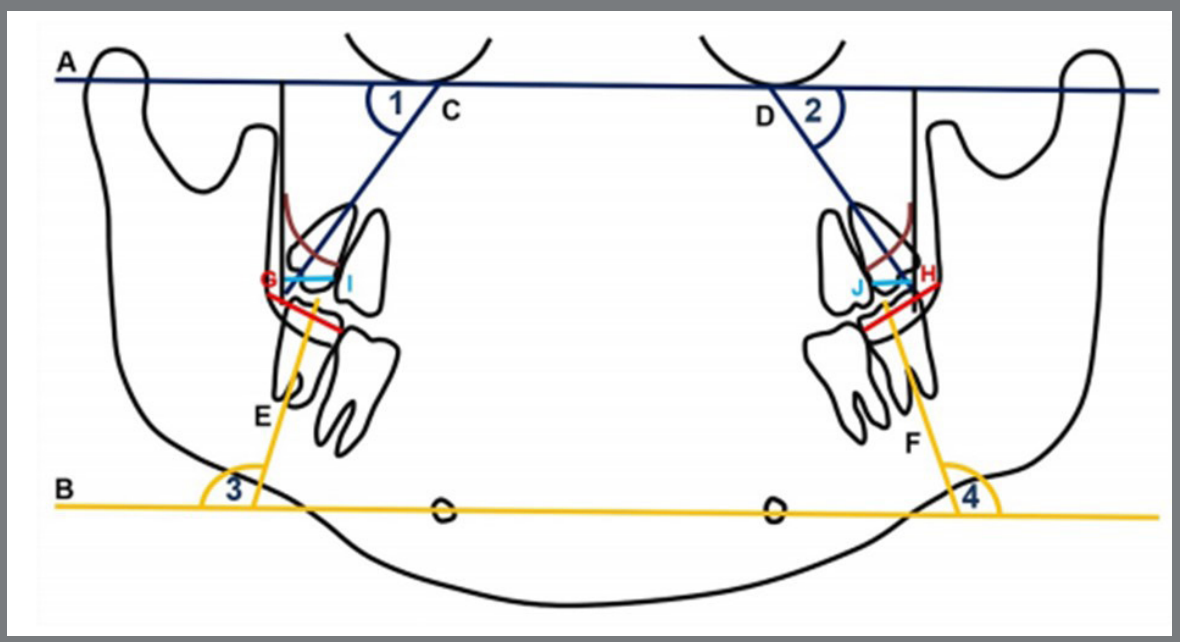

Figure 1: Reference lines and cephalometric variables assessed on panoramic radiographs. Source: Janson et al.[1], 2021.

TRYING TO EXPAND THE MAXILLA WITH AS LITTLE ROOT RESORPTION AS POSSIBLE? A MINI-IMPLANT-SUPPORTED EXPANDER MAY BE THE SOLUTION

Rapid maxillary expansion is considered the gold standard in the treatment of transverse maxillary problems. This treatment technique involves the application of heavy forces on the teeth and supporting structures, to expand the maxilla, correcting the transverse problem. Several appliances have been developed throughout history for this purpose, including the classic Haas expander, passing through the Hyrax, and those encapsulated and mini-implants-supported. A common undesirable effect of these devices is some degree of resorption in the supporting teeth. To date, there is limited evidence addressing the degree of root resorption among different types of expanders. In order to elucidate this issue, Turkish researchers developed a study[2] that evaluated the volume, quantity, and location of root resorption in maxillary first premolars using tomographs (micro-CT), after expansion with four different maxillary expanders (Fig 2). For this evaluation, 20 patients who needed rapid maxillary expansion and extraction of the maxillary first premolars were recruited. The results of the study led the authors to conclude that all expansion appliances cause root resorption, with areas of resorption generally concentrated on the vestibular surface. However, the authors emphasized that an mini-implant-supported expander causes less root resorption than other conventional appliances.

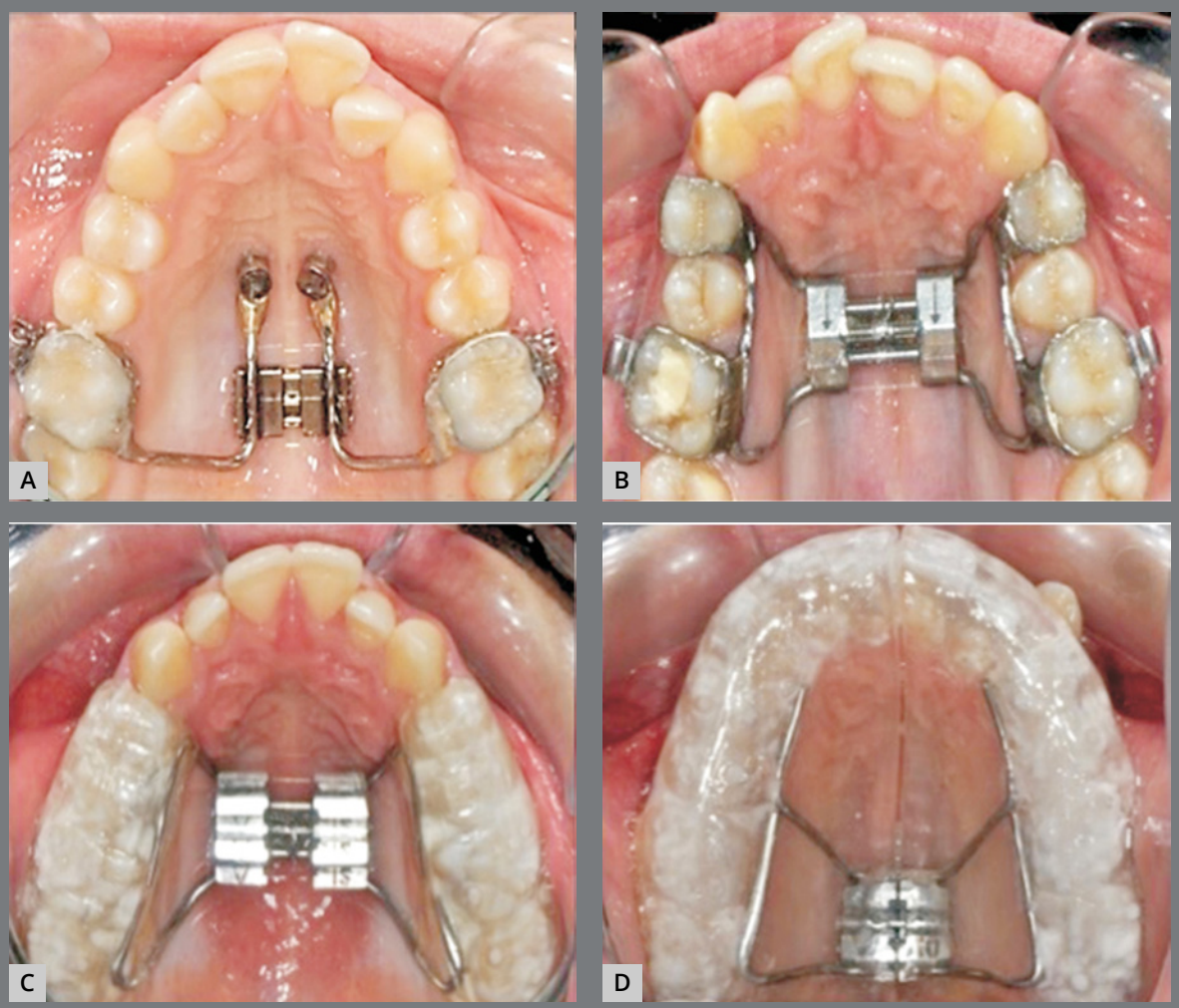

Figure 2: The four rapid maxillary expansion appliances used in this study. **A)** Mini-implant-supported hybrid appliance. **B)** Hyrax appliance. **C)** Acrylic-bonded appliance. **D)** Full-coverage appliance. Source: Alcin, Malkoc[2], 2021.

MINI HYRAX, A GOOD CHOICE FOR MAXILLARY EXPANSION

Compared to the traditional Hyrax expander, the Mini Hyrax expander has gained defenders in recent years due to its smaller volume, which may be more comfortable for patients. However, this hypothesis had not yet been thoroughly tested before the development of a recent study by a group of Brazilian researchers (Fig 3).[3] This study compared the Hyrax-type expander and the Mini Hyrax, in terms of the following parameters: dental effects, impact on quality of life, and pain perception. To this end, a randomized clinical trial was carried out with 34 adolescent patients

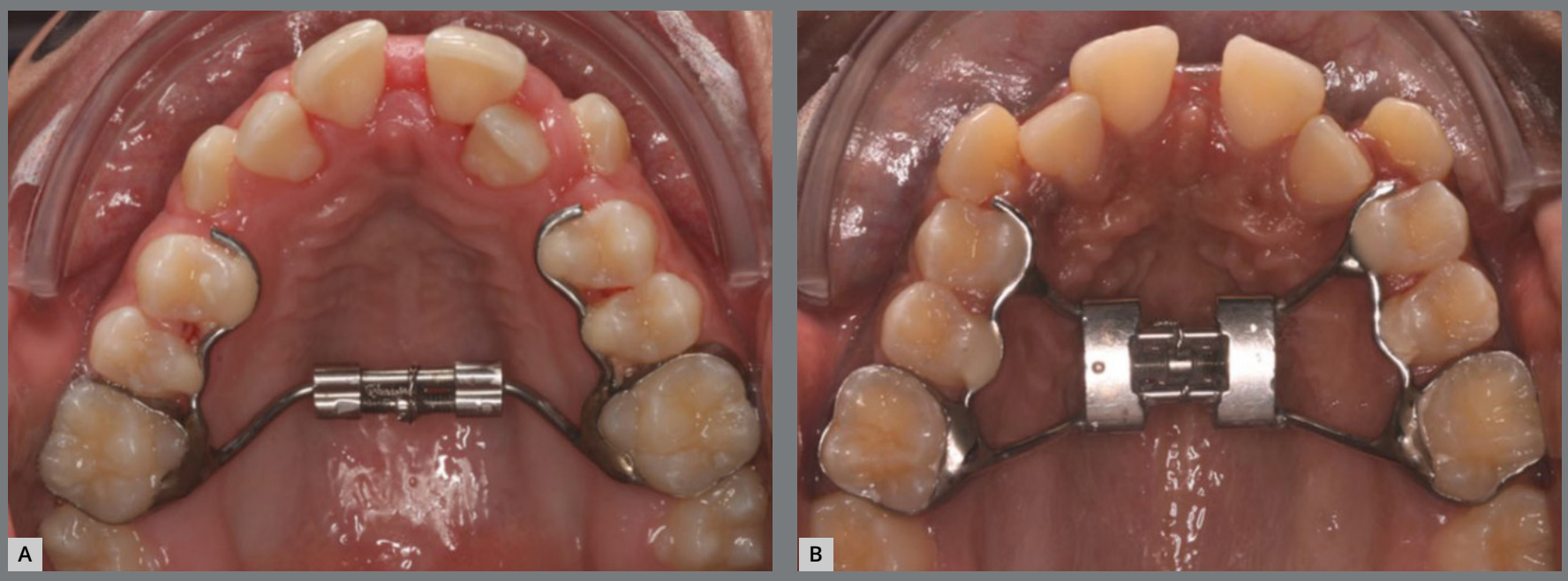

Figure 3: Expander appliances: **A)** Mini Hyrax; **B)** Hyrax. Source: Silveira et al.[3], 2021.

aged 11-16 years with transverse maxillary deficiency (unilateral or bilateral posterior crossbite). The results of the study revealed no significant differences in dental effects, impact on quality of life, and perception of pain, among adolescents using Mini Hyrax and Hyrax appliances for rapid maxillary expansion.

LACTOBACILLI: A NEW ALLY IN THE TREATMENT OF TRAUMATIC INJURIES IN ORTHODONTIC PATIENTS

Unsurprisingly, traumatic lesions in the mucosa and gingiva often appear following the installation of orthodontic appliances. Such injuries are frequently accompanied by discomfort and pain, which can complicate routine oral hygiene and potentially lead to an increase in the formation of bacterial plaque. Bacterial buildup disrupts the intra-oral balance, further worsening soft

tissue health. In recent years, there has been a great deal of discussion about the anti-inflammatory power of probiotics, which have been used in the treatment of cancer patients with periodontal diseases and oral ulcers. Therefore, a question arises: might probiotic products also have therapeutic potential for the treatment of traumatic injuries related to orthodontic appliance installation? To elucidate this issue, a group of Brazilian researchers developed a double-blind, randomized clinical trial[4] that aimed to evaluate the effectiveness of the probiotic *Lactobacillus brevis* in the prevention of early traumatic oral lesions induced by a fixed orthodontic appliance. Patients in the experimental group consumed soluble tablets containing *Lactobacillus brevis* (4 billion colony-forming units after breakfast, lunch, and dinner) for 21 days. The results of the study revealed that *Lactobacillus brevis* reduced the presence of traumatic injuries in patients with fixed appliances by almost 50%.

INSTALLATION OF ORTHODONTIC BRACKETS ASSOCIATED WITH DIETARY CHANGES

As demonstrated in the previous abstract, the installation of fixed orthodontic appliances is often associated with the appearance of traumatic injuries, discomfort, and pain. Practitioners routinely encounter patients who complain that they stopped eating and lost weight after beginning treatment. Although the relationship between newly installed orthodontic appliances and reduced appetite may seem obvious, existing literature

previously provided little evidence about the details of this phenomenon. To address this question, a group of Turkish researchers developed a study[5] that aimed to assess changes in dietary intake of adolescents during orthodontic treatment. Twenty-five adolescents between 12 and 18 years old were recruited. Before treatment, participants were interviewed, and their frequency of food consumption and 24-hour retrospective food consumption records were examined. Participants were followed for three months; that is, in the first, fourth, and twelfth weeks of treatment. The results obtained from the study revealed that in adolescents undergoing orthodontic treatment, the intake of vitamin C, vitamin E, and fiber significantly decreased, especially in the first weeks of treatment. Intake of these nutrients did not return to baseline levels until the twelfth week of orthodontic treatment. The authors emphasized the need for follow-up with nutritionists to minimize the undesirable effects of orthodontic appliances on the quality of patients' diets.

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