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### ORTHODONTIC MOVEMENT PROMOTES IMPROVEMENT IN GINGIVAL RECESSION

Many controversies linger over the role of orthodontics in the treatment of patients with periodontal problems. Over the years, certain published clinical cases have indicated the positive impact of orthodontic intervention in cases of gingival recession in the mandibular anterior region. However, clinical studies with more methodological rigor are still needed. In this context, Danish and German researchers conducted a recent study<sup>1</sup> with the aim of evaluating the impact of orthodontic root movement in cases of gingival recession. The study followed a clinical format, recruiting 12 patients who had a mandibular incisor with buccal or lingual gingival recession, with the root positioned

outside the alveolar bone. The roots were moved towards the center of the alveolar process using a fixed orthodontic appliance with a segmented arch (Fig 1). The following variables were evaluated: 1) depth of the recession; 2) width of the recession; and 3) recession area. In addition, probing pocket depth, the height of the keratinized tissue and changes in the Miller classification were also recorded. The findings of this study indicated that the orthodontic correction of roots positioned outside the alveolar process has a significant clinical impact. Orthodontic root movement into the alveolar process was accompanied by a reduction in gingival recession in all patients, making it the most favorable location to perform periodontal plastic surgery to fully correct the recession.



**Figure 1** - A) Root of the lower right central incisor (tooth #41), positioned outside the alveolar bone and showing gingival recession. B) Device providing lingual torque to the root of tooth #41, with an arch inserted in the bracket slot associated to another arch above the bracket wing, which provides vertical control. C) Tooth with gingival recession before referral to the periodontist, and D) five months after mucogingival surgery. Source: Laursen et al.<sup>1</sup>, 2020.

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## MAXILLARY EXPANDER WITH DIFFERENTIAL OPENING PROMOTES MORE ORTHOPEDIC AND DENTAL CHANGES IN THE ANTERIOR REGION OF THE MAXILLA

Rapid maxillary expansion is the most commonly used orthopedic procedure in the treatment of maxillary constriction and posterior crossbite. For this, it is necessary to use orthopedic devices in the form of expanders, with Haas and Hyrax expanders being the most used. These devices promote an increase in the maxillary width, with a consequent increase in the perimeter of the arch. However, since they are positioned posteriorly (usually in the upper molar region), the posterior region obtains more expressive gains, although approximately one-third of patients with maxillary constriction have greater transverse deficiency in the intercanine width than in the intermolar width. In these situations, with the use of conventional expanders, it would be necessary to exaggerate the posterior opening to achieve the desired result in the anterior region. Faced with this clinical problem, Brazilian researchers performed a clinical study<sup>2</sup> to develop and test a maxillary expander with differential opening, which allows different openings to be obtained in the anterior and posterior regions of the maxilla. For this study, patients aged between 7 and 11 years were recruited, who had constriction of the maxillary dental arch and Class I or Class II sagittal malocclusion.

Two groups were created: experimental (treated with a differential opening maxillary expander) and control (treated with a Hyrax-type expander) (Fig. 2). From this study, the authors were able to conclude that the expander with differential opening was able to promote greater orthopedic and dental changes in the anterior region of the maxilla than the conventional Hyrax expander: however, by evaluating the width of the posterior region, the perimeter of the arch and the length of the arch, similar results were obtained between the two devices.

## ALIGNERS GENERATE MORE DISCOMFORT IN THE FIRST DAYS OF USE THAN FIXED DEVICES

Aesthetics, without a doubt, is largely responsible for the popularity of aligners in recent years; however, aligners have also gained adherents due to their ability of being removed during oral hygiene, and the greater comfort when in use. Despite reports of this effect, clinical assessments are needed so that these claims can be stated authoritatively. Recently, a group of Brazilian researchers published a study<sup>3</sup> that aimed to assess whether there was a difference in pain level associated with orthodontic treatment performed in individuals with aligners *versus* fixed appliances. For this, an electronic search in various databases was performed, including PubMed, Cochrane Database, Web of Science, Scopus, Lilacs, Google Scholar, Clinical Trials and OpenGrey.

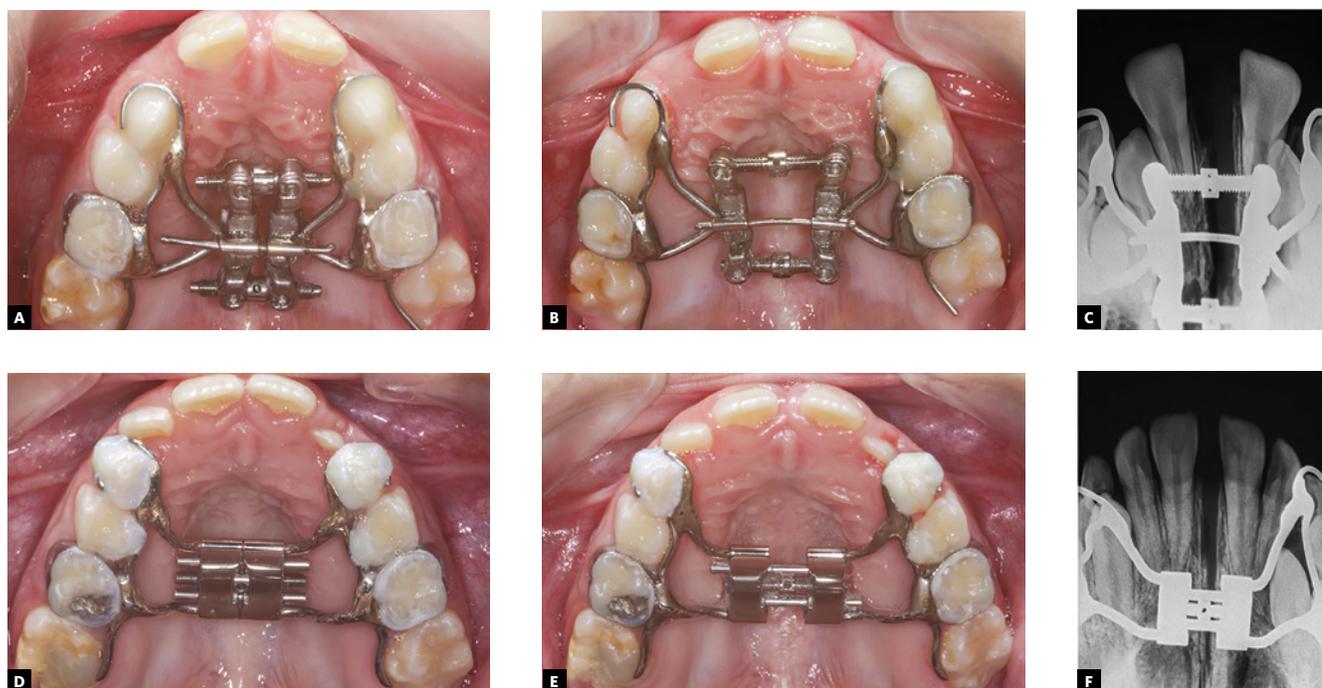


Figure 2 - Expander with differential opening (A, B, C) and conventional Hyrax expander (D, E, F). Source: Alves et al.<sup>2</sup>, 2020.

After removing the duplicates, excluding by title and abstract, and reading the full texts, only seven articles were included. After careful reading of these articles, the authors were able to conclude, based on a moderate level of evidence, that, during the first days of treatment, the orthodontic patients with aligners seemed to experience lower levels of pain than those with fixed appliances. However, no differences between the two groups were observed in the long term (up to 3 months).

### CHEWING GUM CONTAINING ANESTHETIC DECREASES THE DISCOMFORT OF USING ELASTIC SEPARATORS

Anyone who has used orthodontic appliances is well aware of the discomfort caused by orthodontic separation elastics. While nowadays, orthodontic bands are being replaced by accessories that are bonded to the teeth, the bands are still widely used, since they still being a part of preventive and interceptive appliances, such as expanders and lingual arches. As a result, patients need something to help minimize the discomfort. With this concern in mind, Iraqi researchers<sup>4</sup> developed a chewing gum that contains anesthetic, and clinically tested it on 60 patients, who were divided into three groups (chewing gum with no anesthetic, gum with anesthetic, control). For all groups, a record of pain/discomfort, using visual analog scales, was made immediately after placement of the separator (0 hours) and after 1, 4 and 8 hours. The authors concluded that chewing gum containing anesthetic can decrease, and even significantly eliminate, the initial pain/discomfort caused by the

placement of orthodontic elastic separators. In addition, such chewing gum can decrease the need for a systemic painkiller.

### MASS DISTALIZATION SUPPORTED BY MINI-IMPLANTS PROVES TO BE A STABLE THERAPY IN THE CORRECTION OF CLASS II MALOCCLUSION

With the advent of skeletal anchorage, certain orthodontic treatments have become more predictable. In clinical situations in which patient collaboration is essential, absolute anchorage devices have been reduced in importance. The treatment of Class II malocclusion through distalization of maxillary teeth, for example, has become much more predictable, since cooperation in the use of headgear is no longer necessary. However, there are still questions about the stability of the results achieved with this therapy. In search of a solution to this and other clinical questions, a German researcher and their Korean collaborators developed a study<sup>5</sup> that aimed to investigate the stability of the treatment of Class II malocclusion using the distalization of maxillary teeth, anchored by orthodontic mini-implants. For this, a retrospective study of the initial and final telero-diographs, and at 3–4 years post-treatment, was carried out on an experimental group (total arch distalization supported by mini-implants) and a control group, in order to evaluate the results of the treatment and its stability. The results obtained from this study led the authors to conclude that the treatment of Class II malocclusion by distalizing the entire upper arch, anchored by mini-implants, provided stable distal movement of the first upper molars and central incisors.

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