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THE RISK OF ROOT RESORPTION IS THE SAME IN BANDED AND NON-BANDED TEETH WHEN RAPID MAXILLARY EXPANSION IS CARRIED OUT

Rapid maxillary expansion is one of the most highly respected procedures in contemporary Orthodontics. The potential to orthopedically expand the maxilla favored correction of several occlusal changes. Since rapid expansion was first introduced as an orthodontic procedure, a number of appliances and modifications have been suggested in the literature. Among these, premolars rigidly connected by wires instead of banding procedures, as advocated by Haas years ago, have been proposed. In this scenario, the following question arises: Is there any difference in root resorption rates between banded and non-banded teeth, since the level of force delivered to teeth is different in both situations? In order to answer this question, Brazilian researchers conducted a clinical trial¹ to compare root resorption when bands and wires are used during rapid maxillary expansion (Fig 1). The authors concluded that both procedures have the same risk of developing external root resorption. Thus, it is the orthodontist's choice whether to connect teeth by wire or band when performing rapid maxillary expansion.

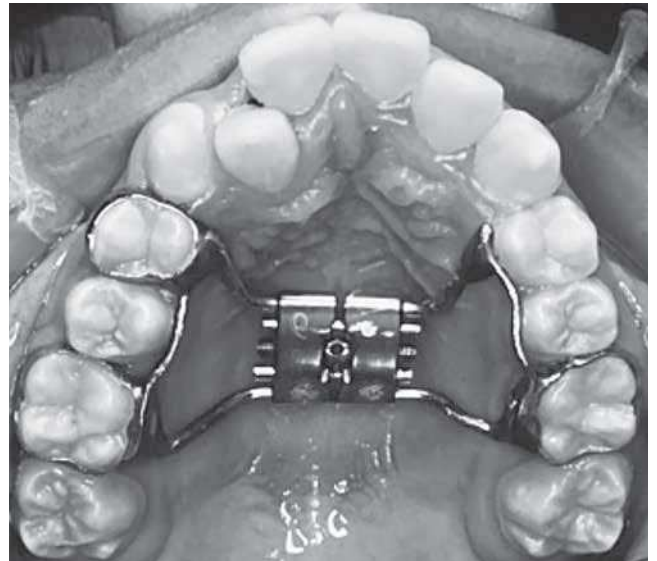


Figure 1 - Expansion appliance used for the study. Premolars were banded on one side and non-banded on the other (Source: Martins et al,¹ 2015).

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REMOVAL OF TWISTED-WIRE FIXED RETAINER BEFORE MAGNETIC RESONANCE IMAGING IS UNNECESSARY

Diagnosis methods have improved by leaps and bounds in the last decades, in all health fields. Computed tomographic scans and magnetic resonance imaging have increasingly become accessible to the overall population. Despite ongoing progress, should metal objects be present when these types of examination and equipment are employed, they cause formation of artifacts, thereby hindering accurate diagnosis. Because orthodontic treatment requires the use of various metal objects, patients might face some issues when subjected to the aforementioned types of examination, especially during the active phase of treatment. For this reason, patients are often required to have brackets removed before examination. Nevertheless, do fixed retainers need to be removed? This question arises due to the fact that fixed retainers are manufactured with a one-piece wire segment that does not negatively affect imaging. With a view to answering this question, Israeli researchers conducted a study² to assess whether twisted-wire fixed retainers (Fig 2) would negatively affect magnetic resonance imaging diagnosis. The authors concluded that removal of these retainers is unnecessary before most magnetic resonance imaging examinations. However, removal should be considered when magnetic resonance imaging is required to diagnose lesions in the mandible and tongue.

SICKLE-CELL ANEMIA IS A RISK FACTOR FOR SEVERE MALOCCLUSION

Sickle-cell anemia is the hereditary hematologic disease most commonly found around the world. It has been categorized as a public health issue as it affects a significant percentage of the world's population. Nevertheless, one could question: what does it have to do with Orthodontics, since this journal focuses on this specialty? To our surprise, this pathology is much more strongly related to Orthodontics than we thought so. It has been well reported in the literature that the presence of sickle-cell anemia causes bone changes and might lead to maxillary protrusion. However, how about other types of malocclusion? How does this pathology affect them? In this context, Brazilian researchers conducted a study³ to investigate potential associations between sickle-cell anemia and the severity of malocclusion. The authors concluded that sickle-cell anemia is a risk factor for moderate and severe malocclusion, especially when it is associated with anterior tooth loss, anterior spacing, overjet, anterior crossbite and open bite. The findings yielded by the study highlight the importance of multidisciplinary clinical protocols to treat orthodontic patients.

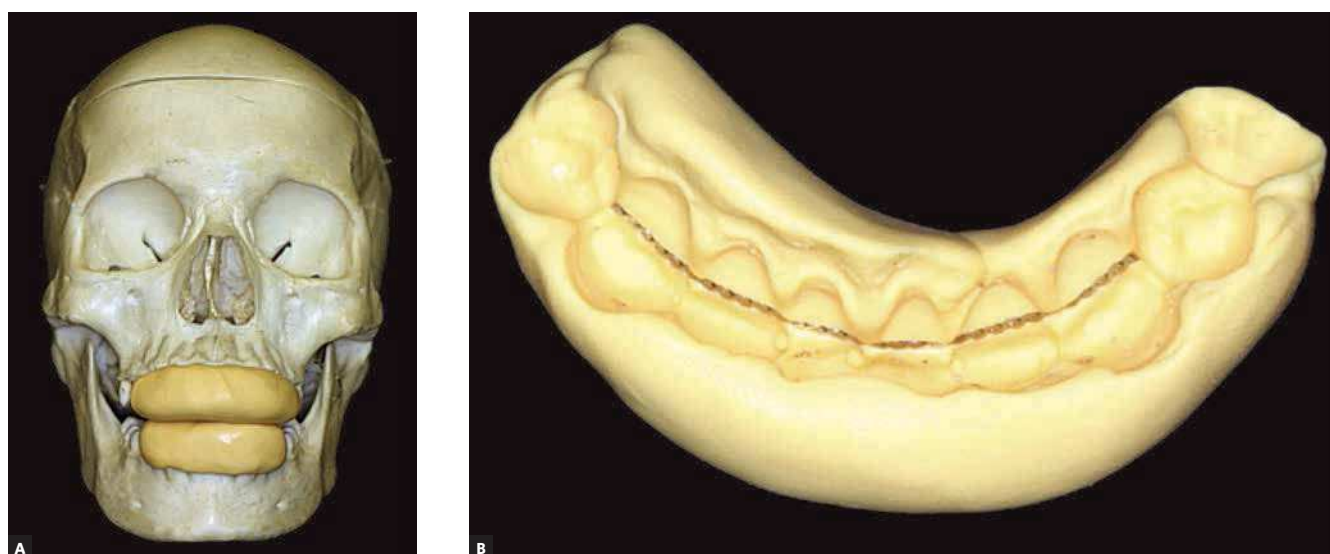


Figure 2 - A) Skull with twisted-wire retention fixed with impression material; B) Retention wire fixed to the impression material (Source: Shalish et al,² 2015).

TREATMENT TIME AND FORCE LEVELS INCREASE THE RISK OF ROOT RESORPTION

Root resorption is undoubtedly what most disturbs orthodontists around the world. All of them have already felt uncomfortable while evaluating patient's intermediate or final radiographs and finding that most of the root is gone due to resorption. Researchers from all around the world have put some effort into understanding the reason why teeth undergo resorption and how to prevent it. One of the factors related to this pathology is orthodontic force applied to teeth during orthodontic movement. Nevertheless, would force really contribute to increase root resorption? Is there strong evidence that this really occurs? With a view to answering these clinical questions, Danish and Brazilian researchers conducted a systematic review.⁴ The authors concluded that positive correlations exist between increased force levels and increased root resorption, as well as between increased treatment time and increased root resorption. In conclusion, the authors highlighted some methodological limitations of the selected studies, which prevented evidence from being even stronger.

NO CONCLUSIVE EVIDENCE HAS BEEN FOUND IN TERMS OF THE BEST PROTOCOL FOR FIXED RETENTION

The need to subject teeth to retention after orthodontic treatment completion is not new. There is a number of protocols and methods available and which allow retention to be performed after orthodontic treatment completion. Some orthodontists prefer removable appliances and leave the responsibility of long-term stability on patients' shoulders. Others, however, prefer not to rely on patients and opt for fixed retainers. Should the latter be the case, some orthodontists prefer to connect all teeth, while others use twisted wires or wires made of different alloys. In this context, the following question arises: what is the most reliable method used to fulfil such an important function? With a view to answering this question, Greek and Sweden researchers conducted a systematic review,⁵ and found several studies assessing this subject. However, after applying inclusion criteria, they could not reach a reliable conclusion capable of answering their initial question. In view of the facts, individual clinical expertise seems to rule the choice of the best method, at least until strong scientific evidence proves what the best protocol is.

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