

Matheus Melo Python<sup>1,2</sup>

### PLATELET-RICH PLASMA DOES NOT MINIMIZE ALVEOLAR DEFECTS AFTER RAPID MAXILLARY EXPANSION

Rapid maxillary expansion is the most consecrated orthopedic facial procedure used today. Early intervention is considered the best treatment option, yielding excellent results. In this phase, the orthopedic effect is quite present, since this effect decreases with the growth of bone maturity, which may also lead to irreversible periodontal damage due to the consequent dental compensation. It is worth remembering that in the present day a significant portion of our patients are adults and adolescents, in whom the expected response for the suture may not be the best. Faced with this situation, what can we do to prevent deleterious effects to the periodontium? The use of platelet-rich plasma (PRP) associated with rapid maxillary expansion has been suggested as a solution since it has the ability to enhance tissue regeneration and accelerate wound healing by inducing stem-cell differentiation through growth factors. Searching for

scientific evidence regarding this hypothetical use, Syrian researchers developed a split-mouth randomized clinical trial<sup>1</sup> (Fig 1) in which they evaluated the efficacy of platelet-rich plasma in minimizing the side effects of rapid maxillary expansion (RME) in the periodontal tissue of anchoring teeth, using cone-beam computed tomography (CBCT). The results achieved were not encouraging since PRP did not produce curative effects, compared to the control group. The authors also pointed out that the prevalence of alveolar defect was higher in the PRP group.

### IT IS IMPORTANT TO CONSIDER THE WIDTH AND HEIGHT OF THE CANINES IN ORDER TO OBTAIN A GOOD ESTHETICS IN CASES OF REPLACEMENT OF LATERAL INCISORS BY CANINES

In clinical situations where there is an absence of upper lateral incisors, two treatment modalities are usually considered: the opening of space for prosthetic replacement by implants, or the orthodontic closure of space. By opting for space closure, some benefits,

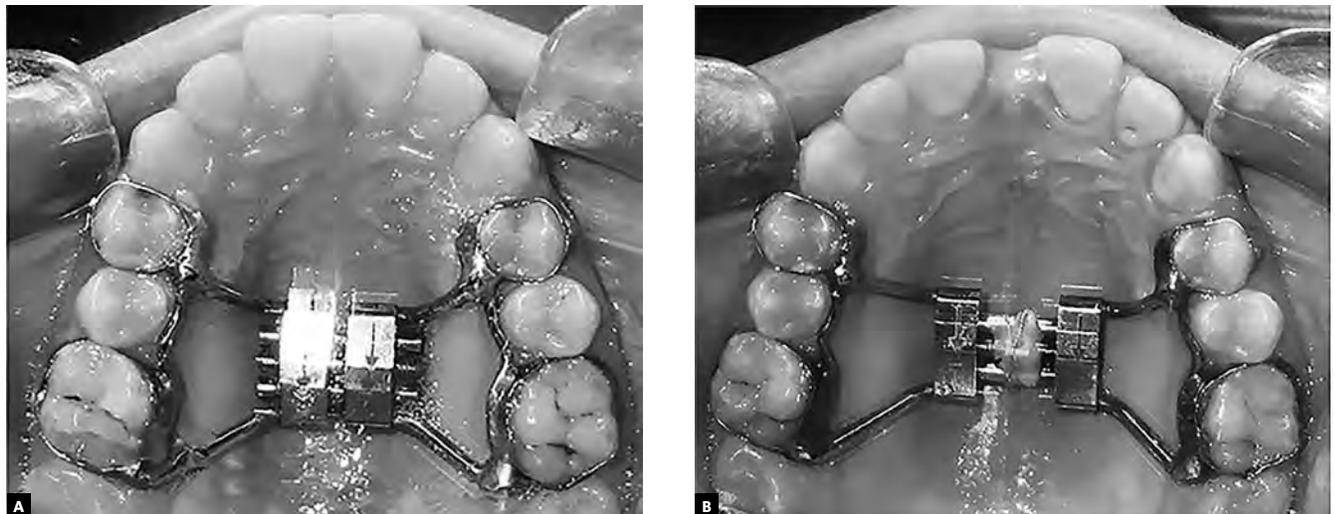


Figure 1 - A) Hyrax appliance before activation. B) Hyrax appliance at the end of the expansion. Source: Alomari et al.<sup>1</sup>, 2019.

<sup>1</sup> Universidade Estadual do Sudoeste da Bahia, Disciplina de Ortodontia (Jequié/BA, Brazil).

<sup>2</sup> Universidade Federal do Rio de Janeiro, Programa de Pós-Graduação em Odontopediatria e Ortodontia (Rio de Janeiro/RJ, Brazil).

Submitted: March 02, 2019 - Revised and accepted: April 16, 2019

Contact address: Matheus Melo Python  
Av. Otávio Santos, 395, sala 705 – Vitória da Conquista/BA – Brasil  
CEP: 45.020-750 – E-mail: matheuspithon@gmail.com

as reduction of costs, elimination of prosthetic materials and superior aesthetics (mainly in relation to periodontal aesthetics) are achieved. However, in order to achieve good dental aesthetics, it is necessary to adjust the canines in order to mimic them as lateral incisors. In view of this situation, what is the ideal height and width of the canines, from the aesthetic point of view, when they substitute lateral incisors? In the search for a response to this clinical doubt, Chinese researchers developed a study<sup>2</sup> with images (Fig 2) modified in Photoshop and evaluated by orthodontists and laypersons, who scored the images. The results of the study revealed that the most esthetic canine form for lateral incisor replacement is one with a edge width of 62.5% of the central incisor width and the edge height of 0.5 mm gingival to the central incisor edge.

### PATIENTS USING CERAMIC ORTHODONTIC APPLIANCE REPORT MORE PAIN AND DISCOMFORT THAN THOSE USING METALLIC APPLIANCE

The search for superior aesthetics of orthodontic accessories gave rise to aesthetic brackets, accessories that can be made in the most varied materials, with prominence of polycarbonates and mono or polycrystalline ceramics. The advantages concerning these types of appliances are basically the superior aesthetics, since metallic brackets are superior in all other characteristics. However, the degree of pain and discomfort among the users of aesthetic and metallic brackets had not yet been scientifically evaluated. Recently, a clinical study<sup>3</sup> was published by an Indian researcher who proposed this evaluation. The sample consisted of 40 patients, who were allocated into two groups: Group A (metal brackets)

and Group B (ceramic brackets). Pain intensity was assessed in a figure containing two 100-mm visual analog scales. The authors' conclusions on this study revealed that ceramic brackets generate more pain because of the involvement of superior friction forces in these appliances.

### OZONE IS A GOOD ALTERNATIVE IN THE PRESENCE OF PERIODONTAL DISEASE IN ORTHODONTIC PATIENTS

The presence of a fixed orthodontic appliance favors the accumulation of bacterial biofilm, which leads to gingival inflammation. When gingivitis is present in an orthodontic patient, the usual procedure is to intensify oral hygiene. However, since a significant portion of our patients are teenagers, this simple task becomes very difficult, causing us to resort to the chemical control of the plaque. Several studies have shown that chlorhexidine is the chemical agent with the best ability to do so, despite its undesirable effects such as transient darkening of the teeth and taste alteration. Ozone has been widely studied in the most diverse branches of science because of its proven bactericidal actions. From this perspective, a question arises, would ozone be able to reduce gingival inflammation in orthodontic patients? In the search for a response to this question, Italian researchers proposed a randomized clinical study<sup>4</sup> with 30 orthodontic patients, in which depth of probing, plaque index and gingival bleeding score were evaluated. The results of this study revealed that ozone produced better results than chlorhexidine rinses in the treatment of gingivitis in orthodontic patients. The authors emphasize the need for further studies with larger samples.



**Figure 2** - The esthetically most pleasant (ranked as top 1) canine shape, with the highest grades for the incisal width and height by all observers in the study. The canine edge width was based on the percentage of the width of the maxillary central incisor clinical crown; the canine edge height was defined as the vertical distance of the incisal edges between the maxillary canine and central incisor. Source: Li et al.<sup>2</sup>, 2019.

## THE ONSET OF THE ORTHODONTIC TREATMENT IS MARKED BY INCREASED ANXIETY AND CORTISOL LEVELS

It is no longer news to any orthodontist that the onset of orthodontic treatment is marked by frequent patient complaints. The presence of a fixed orthodontic appliance, however comfortable, leads to some type of discomfort. Nevertheless, the following question hangs in the air: Is the reported discomfort just a baseless complaint or can it be quantified? With the proposal of quantifying these feelings, Turkish researchers developed a clinical study<sup>5</sup> in which two groups matched by age and sex were formed. Pain and anxiety instruments were applied, and patients' saliva samples were collected before and after insertion of the orthodontic bands in the molars, bonding of the brackets and insertion of the initial archwires. The results of this study revealed that the initial alignment phase of orthodontic treatment affect patients' anxiety and levels of the cortisol hormone. These results reinforce the need to assemble the appliance in stages, facilitating its adaptation by patients, reducing anxiety and cortisol levels.

## REFERENCES

1. Alomari EB, Sultan K. Efficacy of injectable platelet-rich plasma in reducing alveolar bone resorption following rapid maxillary expansion: A cone-beam computed tomography assessment in a randomized split-mouth controlled trial. *Angle Orthod*. 2019 Mar. In press.
2. Li R, Mei L, Wang P, He J, Meng Q, Zhong L, et al. Canine edge width and height affect dental esthetics in maxillary canine substitution treatment. *Prog Orthod*. 2019 Apr 8;20(1):16.
3. Sahoo N. Comparison of the perception of pain during fixed orthodontic treatment with metal and ceramic brackets. *J Pharm Bioallied Sci*. 2019 Feb;11(Suppl 1):S30-5.
4. Cosola S, Giammarinaro E, Genovesi AM, Pisante R, Poli G, Covani U, et al. A short-term study of the effects of ozone irrigation in an orthodontic population with fixed appliances. *Eur J Paediatr Dent*. 2019 Mar;20(1):15-8.
5. Aksoy A, Cesur MG, Dagdeviren BH, Ozkaynak YA, Karacin G, Gultekin F. Assessment of pain, anxiety, and cortisol levels during the initial aligning phase of fixed orthodontic treatment. *Türk J Orthod*. 2019 Mar;32(1):34-40.

## Author identification (ORCID<sup>®</sup>)

Matheus Melo Pithon: 0000-0002-8418-4139<sup>®</sup>