

Matheus Melo Pithon<sup>1</sup>

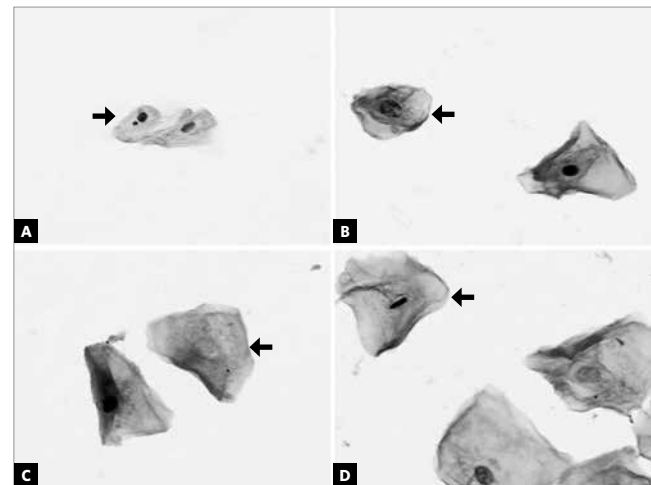
## RAPID MAXILLARY EXPANSION DOES NOT INDUCE SIDE EFFECTS

With computerization of the contemporary world, access to information has become rapid and practical. Following this trend, this has benefited the biomedical field, because nowadays clinicians do not need to wait for a scientific meeting to keep up-to-date. However, with the great amount of scientific information available, what can really be taken into consideration and brought to the daily clinic? With the intention of solving these questions and attempting to separate “the wheat from the chaff”, systematic reviews appear with the goal of “fishing” in an “ocean” of information for the most reliable answer to a certain question. In line with this trend and in seeking answers there is an old, but ever up to date topic: Rapid maxillary expansion. Italian researchers assessed whether this procedure would induce side effects in growing individuals.<sup>1</sup> After an extensive search of the literature, they arrived to the conclusion that rapid maxillary expansion does not cause injuries in growing individuals. However, the authors open a parenthesis and emphasize that as a result of the low quality of studies found and available, no scientifically based conclusion could be drawn, leaving the suggestion of conducting future researches with greater methodological strictness.

## DO NOT EXAGGERATE WHEN ASKING YOUR PATIENTS FOR RADIOGRAPHS AND TOMOGRAPHS

Röntgen undoubtedly was one of the greatest geniuses of humanity, with his brilliant discovery (the “X-ray”), everything that could not be seen with the naked eye became visible. Since it is not all sweetness and light, in order to achieve this feat, it is necessary for the individual to be exposed to radiation and its known harmful effects. However, the orthodontist who follows-up scientific development and stays alert to new technologies, could think,

“I use cone beam computerized tomography which, in a single shot, acquires all the images”. Therefore, we ask: With the advent of tomographs, has there been an end to problems with exposure to radiation? What would be the real risks from the point of view of cellular changes in patients submitted to this new technology and to conventional radiographic exams? To elucidate these questions, Brazilian researchers proposed to evaluate the behavior of oral cavity cells submitted to protocols of conventional and tomographic orthodontic documentation.<sup>2</sup> The results found (Fig 1) demonstrated cytotoxicity in cells of the oral cavity submitted to conventional radiographs and cone beam computerized tomography. A larger number of cell deaths were found in the group in which computerized tomography was used. The authors concluded the article brilliantly, pointing out that orthodontic documentation must be done only when necessary, thereby avoiding unnecessary radiographic and tomographic exposure.



**Figure 1** - Evaluation of the nuclear alterations in the cone beam computerized tomography sequence (CBCT) or radiographic exposure (400x magnification, Feulgen/Fast Green stain): cells (A) micronucleated (arrow) and normal, (B) karyorrhexis (arrow), karyolysis (C) (arrow), and (D) pyknosis (arrow). Source: Lorenzoni et al.<sup>2</sup> 2013.

<sup>1</sup> Professor of Orthodontics, State University of Southwest Bahia. MSc and PhD in Orthodontics, UERJ. Diplomate by the Brazilian Board of Orthodontics and Facial Orthopedics.

**How to cite this article:** Pithon MM. Orthodontics highlights. Dental Press J Orthod. 2013 Mar-Apr;18(2):2-3.

**Submitted:** February 20, 2013 - **Revised and accepted:** February 20, 2013

**Contact address:** Matheus Melo Pithon  
E-mail: matheuspithon@gmail.com

## GOOD TOOTHBRUSHING! NOTHING BETTER FOR PREVENTING WHITE SPOT LESIONS IN PATIENTS USING FIXED ORTHODONTIC APPLIANCE

Much has been developed and commercialized with the aim at improving and even promising to put an end to white spot lesions in patients wearing fixed orthodontic appliances. Mouth wash solutions, remineralizing toothpastes, chewing gums, fluoridated varnishes, among others are used for these purposes. In this context, a pertinent question arises. Are these products really effective in the prevention and improvement of white spot lesions? In seeking an answer to this question, American researchers at the University of Washington conducted a randomized controlled clinical study<sup>3</sup> that evaluated the efficacy of a remineralizing toothpaste and a fluoridated varnish, in comparison with normal brushing with regard to improving white spot lesions. The results attained (Fig 2) refuted the manufacturer's claims, since the authors reached the conclusion that good toothbrushing has the same benefit as the one obtained with the use of these substances.

## IT IS POSSIBLE TO OPTIMIZE BONDING OF FIXED RETAINERS

We all know about the importance of orthodontic retention after the removal of fixed orthodontic appliances. There are various methods described in the literature for retention, such as movable and fixed retainers, bonded directly to the teeth with orthodontic composites. As their use does not need patient's cooperation, fixed retainers have been shown to be more effective. But how does one optimize the adaptation procedure of this device, in view of the technical difficulty of direct adaptation because of its lingual location? One of the methods clinicians use to optimize bonding is to perform it without the addition of adhesive resin after acid etching. But what would be the clinical repercussion of this procedure? Swedish, Chinese and Danish researchers conducted a clinical study in which part of the patients had their fixed retainers bonded conventionally with the addition of fluid resin, and another group without performing this stage.<sup>4</sup> The results found demonstrated that clinically, the addition of fluid resin did not influence the longevity of retainer bars. So here is this clinical hint for speeding up your appointments.



Figure 2 - Examples of photos before and after. Source: Huang et al,<sup>3</sup> 2013.

## ACCELERATION OF TOOTH MOVEMENT, IS IT POSSIBLE?

Without a shadow of doubt, reduction in treatment time is the orthodontists' dream and patients' wish. But in the light of present knowledge, how can we accelerate tooth movement and consequently diminish treatment time? There are various mechanisms described in the literature, said to be accelerators of tooth movement. Among these: Application of laser, electromagnetic fields, pulsed currents, invasive procedures such as dentoalveolar and periodontal distraction and corticotomies. In an endeavor to elucidate which of the methods would be effective and safe for accelerating orthodontic movement, Chinese researchers developed a systematic review.<sup>5</sup> The authors concluded that low level laser therapy is safe, but incapable of accelerating orthodontic movement, whereas corticotomy is safe and capable of accelerating tooth movement. The other methods need further well designed studies in order to confirm their results. Therefore, in the light of scientific evidence, when a patient requests an accelerated treatment, corticotomy appears to be the option available.

## REFERENCES

1. Lione R, Franchi L, Cozza P. Does rapid maxillary expansion induce adverse effects in growing subjects? *Angle Orthod.* 2013;83(1):172-82.
2. Lorenzoni DC, Fracalossi AC, Carlin V, Ribeiro DA, Sant'Anna EF. Mutagenicity and cytotoxicity in patients submitted to ionizing radiation. *Angle Orthod.* 2013;83(1):104-9.
3. Huang GJ, Roloff-Chiang B, Mills BE, Shalchi S, Spiekerman C, Korpak AM, et al. Effectiveness of MI Paste Plus and PreviDent fluoride varnish for treatment of white spot lesions: a randomized controlled trial. *Am J Orthod Dentofacial Orthop.* 2013;143(1):31-41.
4. Tang AT, Forsberg CM, Andlin-Sobocki A, Ekstrand J, Hagg U. Lingual retainers bonded without liquid resin: a 5-year follow-up study. *Am J Orthod Dentofacial Orthop.* 2013;143(1):101-4.
5. Long H, Pyakurel U, Wang Y, Liao L, Zhou Y, Lai W. Interventions for accelerating orthodontic tooth movement. *Angle Orthod.* 2013;83(1):164-71.