

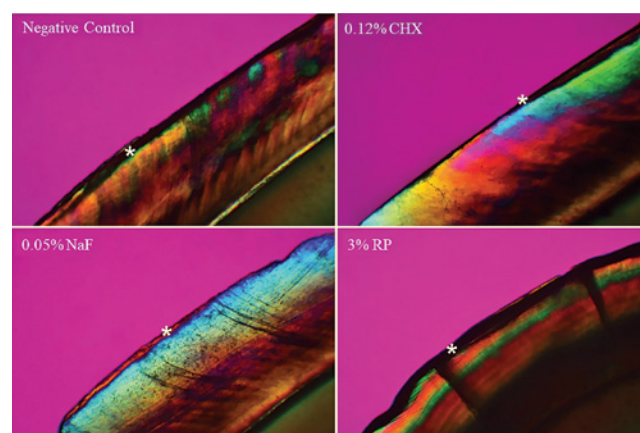
## PHOTOBIMODULATION THERAPY ACCELERATES GINGIVAL REPAIR AFTER REMOVAL OF FIXED ORTHODONTIC APPLIANCES

A frequent clinical situation when removing the fixed orthodontic appliance from our patients is the presence of gingival hyperplasia. The presence of orthodontic devices makes hygiene difficult, preventing correct plaque removal, which leads to inflammation and hyperplasia. Hyperplastic gingiva is sensitive to touch and probing, causing a lot of bleeding. Removing the appliance facilitates cleaning methods by reducing inflammation within a few days. However the time involved in this process can often be a problem for us, orthodontists, who usually have to photograph the patient in the following week. From this perspective, a question arises: could this process be accelerated? Nowadays, photobiomodulation has been much discussed, which is a non-invasive and low cost treatment modality that has been widely used in the control of several diseases. Among its therapeutic effects are: anti-inflammatory, analgesic and cellular activity modulating properties —which have been proven in several studies. Thus, the following question arises: would photobiomodulation allow to accelerate the healing process of gingival hyperplasias after orthodontic treatment? In the search for answers to this question, German researchers developed a blind, split-mouth clinical trial<sup>1</sup> with thirteen patients with a mean age of 16 years. Papillary bleeding index and bleeding on probing index were evaluated. The results obtained with this study revealed that the auxiliary treatment with photobiomodulation was able to accelerate the healing process in patients with gingivitis induced by fixed orthodontic appliance.

## RED PROPOLIS REDUCES THE AMOUNT OF *STREPTOCOCCUS MUTANS*

The presence of white spot lesions at the end of the orthodontic treatment causes a malaise for us, orthodontists, and a bad impression to the patients. In order to avoid such a consequence, a correct sanitization is necessary during all the treatment. Keeping the patient motivated

about brushing their teeth is not an easy task, therefore, science tirelessly investigates therapeutic possibilities that reduce the risk of caries with less collaboration from the patient. Varnishes, toothpastes, chewing gum, mouthwashes, among others of the most varied constituents have already been idealized and tested with this proposal. A new therapeutic possibility that has gained strength in recent years is the use of natural products —especially propolis. Propolis is a resinous substance obtained by bees through the harvesting of resins from the flora of the region, and altered by the action of the enzymes contained in their saliva. The color, flavor and aroma of propolis vary according to their botanical origin. Propolis has proven to possess antifungal and antibiotic activity, which may be of importance for the control of dental caries. In this perspective a question arises, would red propolis (RP) act against *Streptococcus mutans*? In the search for a response to this key question, Brazilian researchers developed an *in vitro* study<sup>2</sup> in which they could verify that red propolis reduced the colonization of *S. mutans*, decreased the concentration of extracellular polysaccharides and reduced demineralization of dental enamel. It is worth noting that the need of clinical studies that can attest these findings should be emphasized.



**Figure 1** - Photographs of bovine dental enamel surfaces under polarized light microscopy (PLM). Demineralization appears on the surface of the enamel as a dark area and is indicated by the asterisk. Microscopic objective: 10 X. Thickness: 100 µm. Source: Martins et al.<sup>2</sup>, 2018.

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

**Submitted:** May 28, 2018 - **Revised and accepted:** June 26, 2018

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

## NICOTINE INCREASES ALVEOLAR BONE LOSS AND ROOT RESORPTION IN ORTHODONTIC TOOTH MOVEMENT

Cigarettes contain about 4,720 toxic substances, one of them, nicotine, being responsible for dependence. Diseases caused by nicotine use kill 4.9 million people a year, which means about 10,000 deaths per day, with an estimated 10 million deaths projected by the year 2030. These terrifying data are nothing new to us. However: would nicotine have any influence on orthodontic movement? In the search for answers to these and other questions, American, Saudi, and Pakistani researchers developed a systematic literature review<sup>3</sup> with the objective of evaluating the impact of nicotine administration on orthodontic tooth movement. For this purpose, an extensive search was conducted in the world literature. The results showed that nicotine exposure compromises orthodontic movement, increasing alveolar bone loss and root resorption. The authors emphasize the need for further studies to evaluate the impact of the habitual use of tobacco products.

## FIBERGLASS AND COMPOSITE BURS DO NOT DAMAGE ENAMEL

Removal of orthodontic composite at the end of treatment is an important and sensitive step. After its removal, it is desirable that the enamel be as before the bonding stage. Various techniques and equipment are used with that purpose, as for example laser, ultrasound, burs of many different materials, etc. It is a consensus in the literature that the best option for removal is using a low rotation bur, however it is not clear which bur is the best. With the proposal of answering this clinical doubt, Indian researchers developed an *in vitro* study<sup>4</sup> in which 36 extracted premolars, after brackets were bonded on their vestibular surface, had the composite removed by three different types of low rotation burs (Tungsten carbide, composite and fiberglass). The findings of the study revealed that composite and fiberglass burs produced less damage to the enamel, when compared to tungsten carbide burs.

## ADULT PATIENTS ARE SATISFIED AFTER ORTHODONTIC TREATMENT

Orthodontics has long ceased to be the exclusive domain of young patients. Orthodontic treatment in adult patients has been shown to be more frequent since a significant part of the population reaches this stage of life with all their teeth. The benefits of orthodontic treatment, from the standpoint of dentists, are vast: aesthetic, functional and social ones. But what about the patients' views? Are they satisfied at the end of the orthodontic treatment? In the search for this answer, Korean researchers developed a study<sup>5</sup> using a Likert scale with questionnaires in order to measure the level of satisfaction of ten items: Overall satisfaction; dental alignment; facial appearance; mastication; self-image and confident smile; contention phase; treatment duration; treatment costs; intention to recommend; relief of previous concerns. It was concluded that adult patients were very satisfied with their orthodontic treatment, and that age, gender, motivation, expected preoccupation and discomfort influenced the level of satisfaction.

## REFERENCES

1. Stein S, Schauseil M, Hellak A, Korbmacher-Steiner H, Braun A. Influence of photobiomodulation therapy on gingivitis induced by multi-bracket appliances: a split-mouth randomized controlled trial. *Photomed Laser Surg.* 2018 May 18. [Epub ahead of print].
2. Martins ML, Leite KLF, Pacheco-Filho EF, Pereira AFM, Romanos MTV, Maia LC, et al. Efficacy of red propolis hydro-alcoholic extract in controlling *Streptococcus mutans* biofilm build-up and dental enamel demineralization. *Arch Oral Biol.* 2018 May 23;93:56-65. [Epub ahead of print].
3. Michelogiannakis D, Rossouw PE, Al-Shammery D, Akram Z, Khan J, Romanos GE, et al. Influence of nicotine on orthodontic tooth movement: a systematic review of experimental studies in rats. *Arch Oral Biol.* 2018 May 23;93:66-73. [Epub ahead of print].
4. Garg R, Dixit P, Khosla T, Gupta P, Kalra H, Kumar P. Enamel surface roughness after debonding: a comparative study using three different burs. *J Contemp Dent Pract.* 2018 May 1;19(5):521-6.
5. Lee R, Hwang S, Lim H, Cha J, Kim K, Chung CJ. Treatment satisfaction and its influencing factors among adult orthodontic patients. *Am J Orthod Dentofacial Orthop.* 2018 June;153(6):808-17.