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INTERPROXIMAL WEAR DOES NOT INCREASE SUSCEPTIBILITY TO DENTAL CAVITY

During orthodontic treatment, interproximal wear is a procedure generally practiced by orthodontists. It is recommended for tooth size adjustment in case of Bolton discrepancy; obtaining space in the arch in borderline cases, being an alternative to tooth extractions; dental contours for elimination of black triangles; transformation of canines in lateral incisors when the latter are absent; among other clinical situations in which it is necessary. Despite its wide acceptance, doubts persist among patients and orthodontists. Would this procedure leave the tooth rougher and more susceptible to dental caries? In the search for an answer, German and Greek researchers developed a systematic review¹ focusing on the evaluation of enamel roughness and its susceptibility to caries with and without interproximal wear. According to the authors, it was difficult to draw conclusions regarding roughness with and without interproximal wear because of the heterogeneity of the studies. As for susceptibility to caries, no scientific evidences nor statistical differences were found among the groups with and without interproximal wear. These results bring us comfort and enable us to convince patients when they are resistant to having this procedure performed.

PALATAL MINI-PLATES AND MINI-IMPLANTS ARE PAINFUL AND UNCOMFORTABLE TO PATIENTS

The importance of skeletal anchorage devices are unquestionable in contemporary Orthodontics. Malocclusions considered of difficult treatment, in the past, are now considered of easy solution with these devices. In this context, mini-plates and mini-implants became popular. The choice between devices is, most of the times, related to the orthodontist's personal preference. Some professionals claim greater power of movement using plates, others say they achieve the same results with mini-implants without a surgical step. However, which one of these devices would be more comfortable to patients? In an attempt to answer this question, Japanese researchers developed a clinical study,² in which they evaluated the pain and discomfort caused by mini-plates and mini-implants after buccal and palatal placement (Fig 1). After installation of the different anchorage devices, the patients answered a questionnaire during 14 days, in which pain and discomfort were scored day by day. The obtained results showed greater discomfort by palatal plates followed by palatal mini-implants and buccal mini-implants. According to the authors, skeletal anchorage devices must be selected in accordance



Figure 1 - Intraoral photographs. A) Mini-plate buccally inserted. B) Mini-implant buccally inserted. C) Mini-implant inserted in the palate (Source: Kawaguchi et al.² 2013).

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with each case, that is, it should not be based on the orthodontist's personal preference. Thus, the patient's opinion must be considered in situations in which different devices will allow the same final results.

ORTHODONTIC TREATMENT IMPROVES ESTHETIC PERCEPTION IN CASES OF AGENESIS OF UPPER LATERAL INCISORS

Agenesis of lateral incisors is a common clinical situation in Orthodontics. In the absence of one or two upper lateral incisors, the treatment options vary from space closure with mesialization of canines to space opening before prosthetic replacement. From the perspective of space closure treatment, would this method be well perceived in esthetic terms? And, in untreated cases, which would be the most anti-esthetic situation? In the presence of diastema or in cases of asymmetry? Aiming at obtaining answers to these questions, Italian researchers developed a study³ in which images of cases with agenesis of unilateral or bilateral upper lateral incisors, with and without orthodontic treatment, were created (Fig 2). The images were presented to professionals and lay people who were requested to evaluate them from 0 to 10 with regard to esthetics. The results showed that the images in which orthodontic treatment had been performed in the absence of diastemas

and symmetrical were scored as the best by all interviewees. This result reaffirms the need for orthodontic treatment when this dental anomaly is present.

ADDITION OF IODONIUM SALT TO COMPOSITES ALLOWS A SHORTER PERIOD OF LIGHT-CURING

Bonding orthodontic accessories directly to the surface of dental enamel was one of the greatest discoveries in Orthodontics in the last decades. Nowadays, we have access to bonding materials with excellent properties regarding resistance to masticatory forces and orthodontic mechanics, color stability, biocompatibility and fluoride release. Despite so many favorable characteristics, improvements are welcome. One particular improvement would greatly facilitate appliance placement procedures: light-curing within a shorter period time. Bonding materials currently available need light-curing to be carried out for 20 to 40 seconds. It may seem fast, however, considering bonding of all teeth in the mouth, the reduction in light-curing time of each unit would make a significant difference by the end of the day. In search for improvement, Brazilian researchers performed an *in vitro* study in which they developed an experimental composite with different concentrations of iodonium salt, aiming at verifying whether the addition of this



Figure 2 - Simulation of different smiles and treatment options (Source: Rosa et al,³ 2013).

salt would allow light-curing to be carried out within a shorter period of time, without loss of mechanical characteristics of these materials.⁴ The results revealed that adding iodonium salt increases bonding resistance of photo activated composites in 8 seconds when compared to the composite without this salt. This study enables future prospects of developing composites with shorter light-curing time.

DENTAL INTRUSION DOES NOT PROMOTE SIGNIFICANT PULP ALTERATIONS

Pulp alterations associated with orthodontic tooth movement is widely known and documented in the literature. Different tooth movement can promote different pulp alterations. One movement in special is often

associated with alterations of greater magnitude: the intrusion movement. However, what would be the real implication of this movement and of different magnitudes of force on the dental pulp? Chinese authors evaluated these situations in a clinical study⁵ in which intrusive movement was performed in premolars that would be extracted by orthodontic reasons with different force magnitudes (Fig 3). The results showed pulp vitality in the intruded teeth without pulp necrosis. These results are important, however, they must be carefully analyzed and not extrapolated to all teeth in the arch, since the response of incisors may be different from that of premolars. Assessment of anterior teeth is necessary, given that these elements are the most commonly orthodontically intruded.

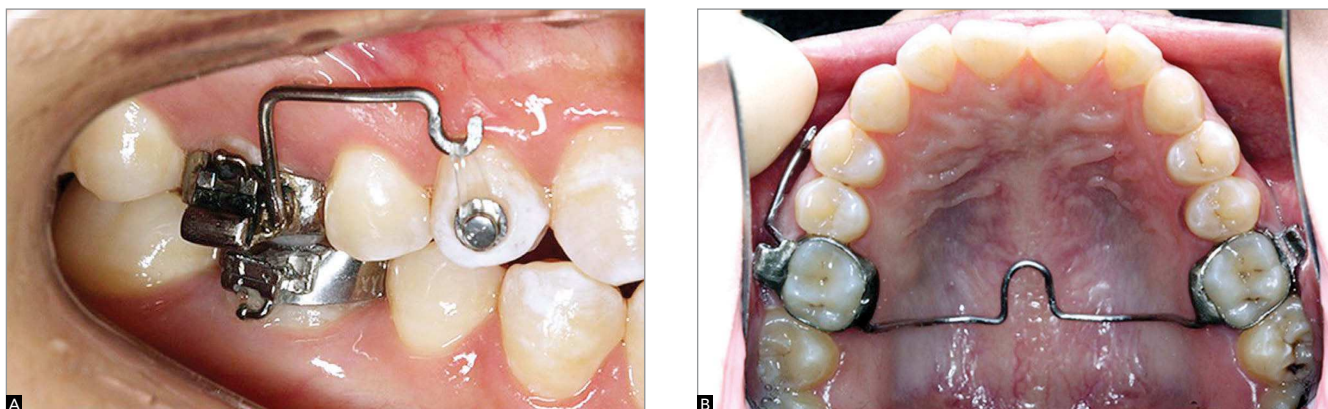


Figure 3 - Appliance used to promote intrusion. **A)** Lateral view of the appliance. **B)** Occlusal view of the appliance composed by transpalatal bar. (Source: Han et al,⁵ 2013).

REFERENCES

1. Koretsi V, Chatzigianni A, Sidiropoulou S. Enamel roughness and incidence of caries after interproximal enamel reduction: a systematic review. *Orthod Craniofac Res* 2013.
2. Kawaguchi M, Miyazawa K, Tabuchi M, Fuyamada M, Goto S. Questionnaire survey on pain and discomfort after insertion of orthodontic buccal miniscrews, palatal miniscrews and, orthodontic miniplates. *Orthod Waves* 2013;in press.
3. Rosa M, Olimpo A, Fastuca R, Caprioglio A. Perceptions of dental professionals and laypeople to altered dental esthetics in cases with congenitally missing maxillary lateral incisors. *Progress in Orthodontics* 2013;14:1-7.
4. Costa AR, Vedovello-Filho M, Correr AB, Vedovello SA, Puppini-Rontani RM, Ogliaeri FA et al. Bonding orthodontics brackets to enamel using experimental composites with an iodonium salt. *Eur J Orthod* 2013.
5. Han G, Hu M, Zhang Y, Jiang H. Pulp vitality and histologic changes in human dental pulp after the application of moderate and severe intrusive orthodontic forces. *Am J Orthod Dentofacial Orthop* 2013;144:518-522.