

Comparison between three orthodontic movement acceleration methods: Literature review

Abstract

The comprehensive orthodontic treatment with fixed appliance, that takes approximately two to three years to be completed on average is a risk factor for cavities, external root resorption, periodontal problems and bone loss. Because of this and the social demand for shorter orthodontic treatments, acceleration of orthodontic movement and decreased duration of treatment would be highly desirable. The aim of this literature review was to seek recent and reliable information on orthodontic movement accelerator methods, focusing on three specific techniques: surgical interventions, employment of chemical mediators and physical stimulation. It was concluded that (1) surgical interventions, such as corticotomies and bone microperforations, are relatively noninvasive and induce physiological processes of healing and tissue bone repair that can accelerate the tooth movement process; (2) employment of chemical mediators, such as prostaglandins and cyclic AMP, also promote processes that increase the rate of bone remodeling, but their practical application is still very limited; (3) Some studies consider that physical stimulation, such as vibration devices, may contribute to the acceleration of the process of anterior tooth retraction; however, studies with more robust methodology did not show a reduction in treatment time with these methods; (4) the only consensus in scientific literature was the need for further research.

Descriptors: Corrective Orthodontics. Tooth Movement Techniques. Oral Surgery. Piezosurgery. Osteotomy.

Gontijo TS, Dobranszki A, Cruz RM. Comparação entre três métodos de aceleração da movimentação ortodôntica: Revisão de literatura. R Odontol Planal Cent. 2019 Jul-Dez;9(2):15-20.