Editorial

Post-treatment orthodontic relapse

The orthodontic treatment has many goals; one of the most important is the stability of the obtained changes. Generally, orthodontic treatments last longer and employ complex techniques, many times reaching admirable outcomes; however, these outcomes may relapse at varied degrees after the removal of the active orthodontic devices. The typical type of orthodontic relapse is well documented in the literature and comprises tooth crowding or spacing, the relapse of the increased overbite and overjet, and the instability of the correction of Class II and Class III molar relations.

Unfortunately, the orthodontic treatment failure is always judge by patients and orthodontists as associated with the recurrence of the anterior-inferior irregularity.

The etiology of the mandibular crowding after orthodontic treatment is multifactorial. Some factors depend on the measurements related to the orthodontic treatment, such as: lack of a complete tipping correction of the teeth, which leads to the lack of contact point; increasing of the intercanine distance; alteration in the shape of tooth arches; excessive protrusion of the incisors; disharmony in occlusion; failure to remove the malocclusion causes; time of retainer. Other factors, however, depend on the patient, such as: relapse of the overbite correction; anterior component of the occlusion force and degree of interdental contacts; continuity of the maxillary and mandibular growth after the ending of the orthodontic treatment; tooth shape and size; morphology of the apical bases; oral habits; alteration in the rest and function of the facial and masticatory muscles; difference in the growth pattern between the facial skeleton and the surrounding soft tissue; stretching of the collagen fibers of the periodontal ligament; and alteration in the elastic properties of all gingival tissue.

After many decades of studies, the literature evidences that tooth alignment stability is highly variable and unpredictable. Some studies conducted by Little [3] showed that a satisfactory mandibular tooth alignment 10 years after the removal of the retainer is maintained in less than 30% of the patients, with approximately 20% of the cases showing a marked crowding many years after the retainer removal. The alterations continued during the second decade of the patients' life and only decreased after the age of 30 years. However, the rarity that ideal occlusions are found and the similarity between the alterations in the post-treatment period with those observed in longitudinal studies of normal occlusions (decrease in the width and length of the mandibular arch and increasing in mandibular incisor crowding) suggest that the post-treatment alterations comprise the normal process of the occlusion maturation rather than the outcome of the orthodontic therapy. Many authors consider the mandibular incisor stability after the orthodontic treatment as a utopic ideal and suggest that the only solution is to maintain the retainer for an undefined period.

The post-treatment crowding can be distressing for the misinformed patient; thus, the patient should always be well informed about the treatment prognosis. If the patient does not want to wear the retainers for a long period, one alternative is a second orthodontic treatment, later in life.

References

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