

Oral Care During Orthodontic Treatment

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Abstract

Success of orthodontic treatment depends largely on the oral hygiene conditions of the patients. Failing to do so, many unwanted sequel may take place like demineralization of tooth structure, caries, gingivitis, periodontitis etc. This article deals with the various methods that should be considered by the orthodontist and patients for the good overall hygiene of oral tissue and completion of the treatment successfully.

Keywords: Oral hygiene maintenance, orthodontic appliance, dental hygiene

Introduction

Average time of orthodontic treatment is 2 years and if patient is unable to maintain the good oral hygiene for this time period, it may lead to decalcifications, carious tooth, periodontal health deterioration and much more. Orthodontist should follow certain protocols so that adverse effect in the supporting structures can be avoided and also it is necessary to educate the patient

about ways for maintaining good oral health. This improves the quality as well as reduce the timing of the treatment.¹

Decalcification and caries during the orthodontic management

As the orthodontic fixed appliance obstructs the proper cleaning of the tooth, it leads to accumulation of bacterial plaque and food debris retention. This further leads to the decalcification of tooth structure around the appliance which can be seen as white spot lesions. Operator might overlook these problems while adjusting appointments. If dentist-orthodontist team work together carefully, then these “scars of operations” can be avoided.^{1,2}

Loose fitting or deformed bands

Orthodontist should re-cement the band of lower molar every 6 months as the cement tends to break under occlusal forces. Poorly fitting or deformed bands can become the area of food accumulation and hence must be refixed as soon as possible.¹ Molar tubes should be preferred over molar bands as the former cause less detrimental effect. Saud A. Al-Anezi compared the periodontal state of orthodontic bands and bonds in the first three months of treatment and found that for the upper and lower arch, bands induced a statistically significant change in bleeding on probing (BOP), while bonds caused a statistically negligible change in BOP.³

Soft tissue care

Most patients undergo orthodontic treatment at puberty which is the time when hormonal disturbances frequently are reflected in gingival tissue. Any kind of irritation by orthodontic appliances may produce inflammation, swelling, pain and redness and if the orthodontist fails to acknowledge these problems if present, permanent fibrous gingival reaction may take place.^{4,5}

Proper oral hygiene necessity

Generally, children are careless about the oral hygiene habits even without any appliance and it thus requires special attention by the operator to establish proper routine. If not done, it may lead to decalcifications, caries, more frequent loose bands and soft tissue problems. Operator must take on all possible methods to control these mentioned problems.¹

Orthodontist should consider the following things^{1,2,6}

- Treating any carious lesions present prior to fixing any orthodontic appliance or bonding the brackets.
- Protection of enamel surfaces by application of fluoride.
- Sealing the pits and fissure by sealants.
- Patient should be counselled that it takes longer to clean the teeth with orthodontic appliance.
- Brackets should be chosen with care, and they should be used with a procedure that involves removing any composite flash.
- Operator should regularly check for any loose bands to prevent accumulation of debris.
- Patient with suspected deficiency of vitamins should be noted and appropriate dietary aids should be recommended.
- Scaling and removal of debris from the periodontal pockets is necessary.
- General physician should be asked for the substitute of the medications such as Dilantin which causes gingival overgrowth.

Methods of home care by the patients

A properly planned home care routine by the patient is necessary for keeping the oral tissue healthy. Following methods are to be taken under considerations^{1,7}: -

- Proper oral hygiene instructions should be followed by the patients which include tooth brushing twice daily

with any conventional or orthodontic tooth brush (figure) which should be supplemented by interdental cleaning aid.

- Manufacturers extensively push electric toothbrushes and oral irrigation devices. The findings of research comparing the efficacy of an electric toothbrush with a manual toothbrush for orthodontic patients are mixed. Oral irrigation, according to Attarzadeh (1986)⁸, should only be used as a supplement to other techniques of tooth cleaning.
- A disclosing tablet or solution is to be advised for the patients who do not seem to be cleaning the critical areas (figure)⁹
- Smartphone applications can be used for oral hygiene compliance by the patients. A randomized control trial by Homa Farhadifard et al (2020) found that during the follow-up period, brushing frequency and duration were strongly linked with app usage. Smartphone apps might considerably aid in increasing orthodontic patients' oral hygiene compliance, particularly in teens, by acting as motivators and reminders.¹⁰
- Rubbing the index finger back and forth along the gingival margin as a massage may be often beneficial for orthodontic patients as it increases the blood circulation. Dipping the finger first in an astringent mouth-wash may help to add a fresh feeling to the tissue. (figure).



Figure 1: Specialized Orthodontic Tooth Brush.



Figure 2: image showing plaque after using disclosing agent.

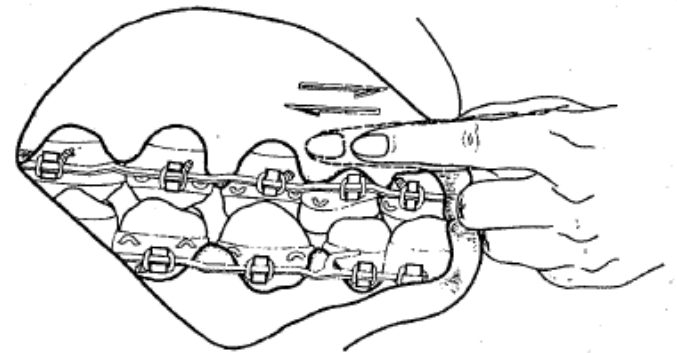


Figure 3: massaging technique.

Conclusion

Proper methods for improving oral hygiene by the orthodontist as well as the patient should be followed for the successful orthodontic treatment. In the adjustment appointments, the orthodontist should look for the overall oral health of the patient rather than just focusing on the orthodontic appliance. The operator should give the clear instructions to the patients and motivate to follow them by encouragement and reassurance at every follow-up appointment.

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