Diagnosis and Treatment of White Spot Lesions During Orthodontic Treatment

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Abstract:

White spot lesions are the earliest stage of dental caries and are also called ‘initial caries’, ‘early enamel caries’ or ‘flat surface caries’. The opaque-white appearance is due to the loss of minerals in the subsurface enamel and the different reflection of the light by the damaged enamel compared to the intact enamel. Orthodontic treatments are generally applied in childhood and young adulthood, which is a period of high caries incidence. In addition, white spot lesions may occur when adequate hygiene is not provided around the bands and brackets, which are difficult to reach by brushing during orthodontic treatment. These lesions, which clearly appear at the end of orthodontic treatment, may cause dissatisfaction in the patient and a very poor aesthetic appearance depending on their severity. Prevention of enamel demineralisation during orthodontic treatment is critical for treatment success. In case of white spot lesions (WSLs), early diagnosis and intervention strategies should be implemented without delay. Effective brushing with fluoridated toothpaste and fluoridated mouthwashes are recommended as the first preventive measure. In cases of large areas of demineralisation or inadequate oral hygiene, professional or prescription fluoride treatment may be necessary. In addition, casein phosphopeptide amorphous calcium phosphate (CPP-ACP), bleaching, etching and microabrasion techniques have proven to promote remineralisation. Good oral hygiene is the most effective prophylactic method for the prevention of WSLs in individuals undergoing fixed orthodontic treatment.

Keywords:

dental white spots, tooth demineralization, oral hygiene, orthodontic appliances.