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Evaluation of root resorption using dentin sialophosphoprotein during alignment and leveling phase of orthodontic treatment

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Root resorption occurs as a pathologic consequence of orthodontic tooth movement. Depending on the amount of force exerted on the tooth, the resorption may be mild and clinically insignificant, while in other cases, a large amount of cementum and dentin are removed from the root surface. At present, clinical diagnosis of root resorption is generally radiographic. Radiographs are technique-sensitive that can detect resorption only after 60-70% of the mineralized tissue is lost. They provide two-dimensional information primarily identifying apical change. Cone beam volumetric imaging and computerized tomography were identified that they have greater sensitivity in detecting root resorption. The high radiation exposure and cost made it impractical for routine use in orthodontics. The purpose of this study was to determine if an alternative molecular method such as Dentin Sialophosphoprotein could be used to assess root resorption in active orthodontic patient. The experimental subjects included 15 patients and 15 untreated controls with the absence of any relevant medical disorder, no previous history of orthodontic treatment, and no evidence of root resorption as confirmed in the periapical radiograph. Gingival Crevicular Fluid (GCF) samples of malpositioned tooth were obtained twice: immediately prior and 8 weeks following the placement of orthodontic appliance. The study revealed that there was significant ($P=0.000<0.01$) increase of Dentin Sialophosphoprotein among experimental group than the control group after 8 weeks of installation of fixed orthodontic appliance. The study suggests that Dentin Sialophosphoprotein is useful for assessing resorption during leveling and alignment phase of orthodontic treatment.

Biography

Shiela Jedidiah E Bacani has completed her Doctor of Dental Medicine from Centro Escolar University and is currently pursuing her Master in Science Major in Orthodontics. She was a former faculty member in Centro Escolar University (2012-2015). She is currently working in Al-asnan Almasiya Dental Center Taif, Saudi Arabia as resident Orthodontics.

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