

AAO Foundation Award Final Report

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Award Type	Biomedical Research
Project Title	Development of a Biochemical Assay for Root Resorption: Immunological Quantitation of Dentin Phosphophoryn in Gingival Crevicular Fluid
Project Year	1997
Institution	Harvard School of Dental Medicine and University of Southern California
Summary/Abstract	<p>The objectives of this investigation were firstly to determine if breakdown products of the dental root such as dentin sialophosphoproteins (DSPP's) can be found gingival crevicular fluid (GCF) and secondly to quantify them. GCF was collected from: (1) permanent central incisors in untreated patients (group I - control), (2) resorbing deciduous second molars (group II) and (3) permanent central incisors with mild root resorption in patients undergoing active orthodontic treatment (group III). The GCF was analyzed for DSPP's using our developed ELISA with the primary antibody for dentin phosphoproteins. Highest levels of dentin sialophosphoprotein were detected in the GCF of deciduous teeth undergoing root resorption (group II). Significantly higher levels of DSPP's were detected in the GCF of teeth undergoing orthodontic movement with radiographic evidence of root resorption (group III) compared to the GCF from untreated patients (group I). Lowest levels of DSPP's were found in the GCF of the controls (group I). We conclude that breakdown products of root resorption can be detected and measured in the GCF. Development of these methods may lead to improved diagnostic tools and management of root resorption.</p>