
Paper ID: 1570943638

Paper Title: Bone Strain Measurement in a Maxillary Incisor Subjected to Orthodontic Movement

Authors: Warisara Boonrueng, Pornthinee Phuricharoenwong, Nonglak Somboontum, Theekapun Charoenpong and Chamaiporn Sukjamsri (Srinakharinwirot University, Thailand)

Email: mm2113mind@gmail.com

Abstract

Orthodontic treatment gains popularity nowadays. However, a deep understanding in relationship between tooth movement and bone strain distribution is limited. This study aimed to conduct an experiment and validated finite element model to measure bone strain at the root of the maxillary incisor which was subjected to an imposed horizontal movement up to 1 mm. The results showed that the experiment and FE analysis were consistent with a maximum error of 14.34%. FE analysis in the model representing human tissues properties revealed that the range of bone strain was sufficient for promoting bone remodeling for orthodontic treatment.
