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**Abstract**

When inspecting a periodontal disease, various types of apparatus for measuring of tooth mobility have been proposed. However, these types of devices and methodologies are insufficient in terms of reliability. To assess the periodontal attachment level of natural teeth, an innovative, non-destructive and time saving method, using vibrating theories , was presented in this study. There was a linear relationship between the frequency and the attachment level. The resonance frequencies of teeth decreased with the lowering of the attachment level. These findings suggested that resonance frequency method may be a useful, auxiliary clinical tool in diagnosis of periodontal diseases.

**Keywords**: Periodontal disease, Vibrational analysis, finite element

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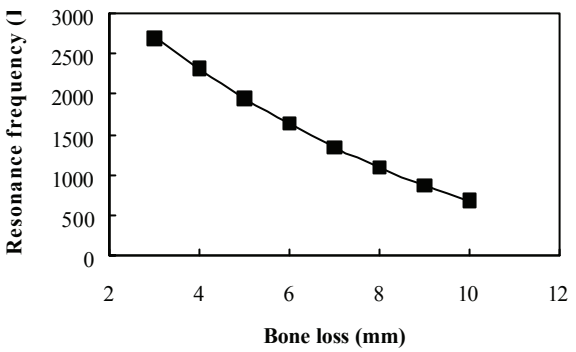


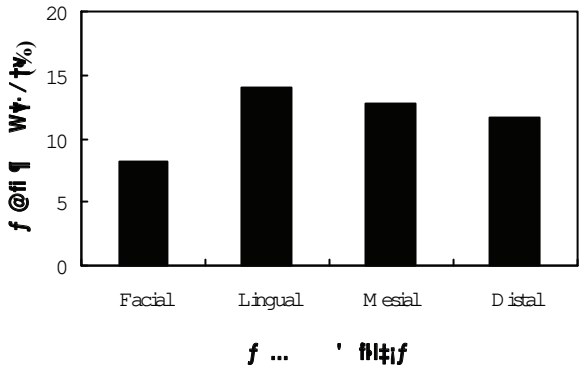


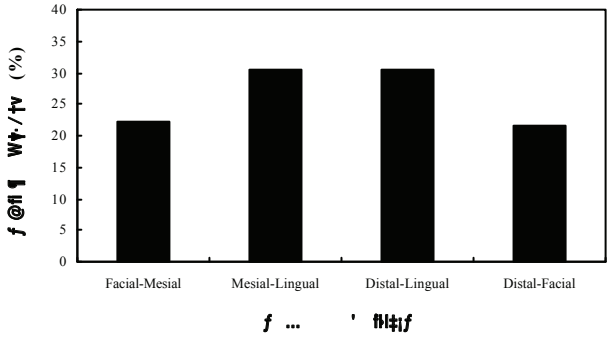


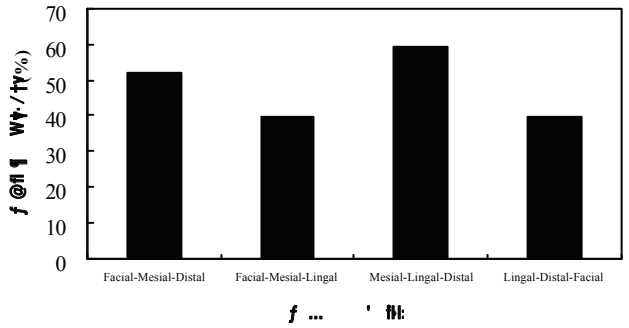

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