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The effect of viscoelastic characteristics of pulp on the mechanisms of dental trauma

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Abstract

In this study, modal testing technique was carried out to measure the damping characteristics of upper central incisors. The measured data were used as a parameter for dynamic finite element analysis. The effects of the damping ratio on the stress distributions of tooth subjected to impact force were assessed. The mechanisms of the initiation and propagation of the fracture crack were discussed.

Keywords: dentotrauma, viscosity, finite element method

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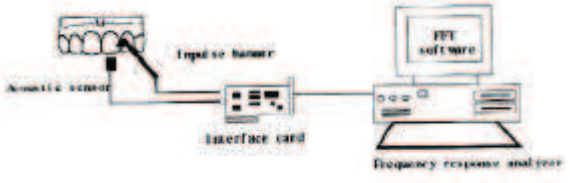

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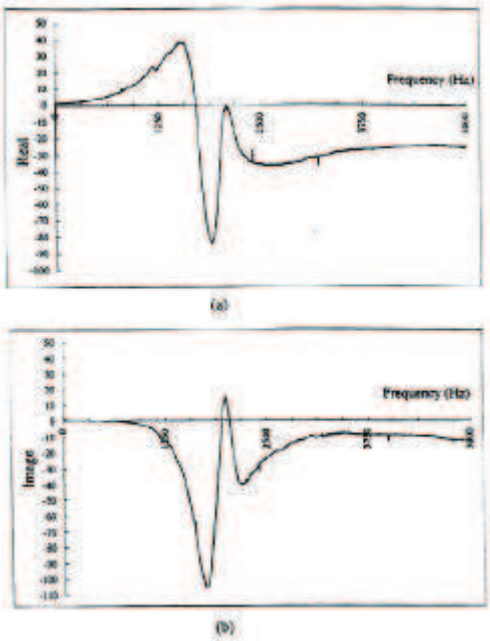
Frequency (Hz)
Real
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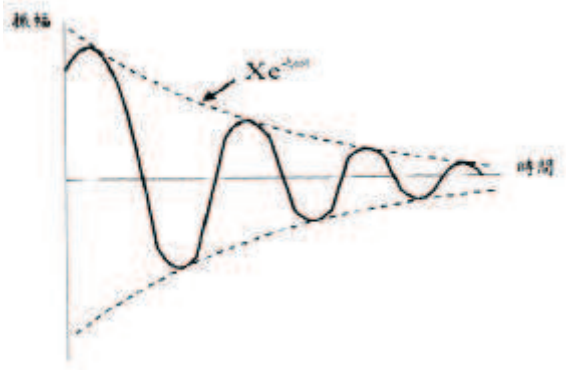
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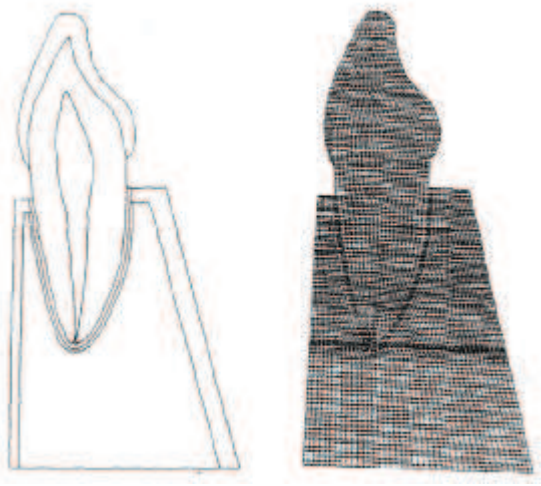

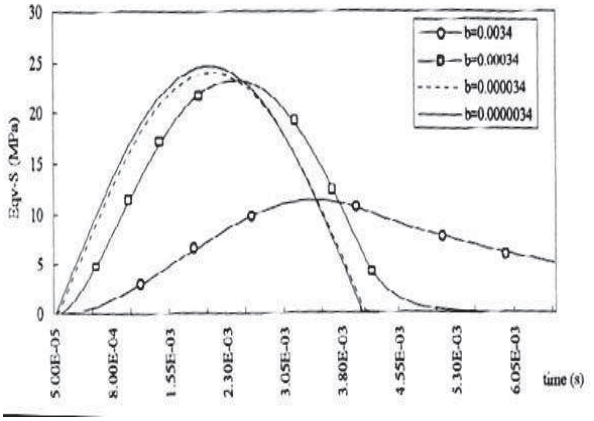

β	¥ fi ¯ (MPa)	o¥ ˝ fi (ms)
0.0034	11.3	3.40
0.00034	23.2	2.36
0.000034	24.0	2.05
0.0000034	24.6	2.00
R ˝ A ˝R	26.7	--

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