

## Pengaruh Tekanan Ortodontik Pada Perubahan Mikrostruktur Permukaan Jaringan Sementum = The Influence of Orthodontic Forces on the Alterations Of Cementum Microstructure

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### Abstrak

#### <b>ABSTRAK</b><br>

Resorpsi sementum akar gigi dapat merupakan efek samping perawatan ortodontik yang perlu mendapat perhatian. Faktor mekanis perawatan ortodontik adalah salah satu faktor risikonya. Penelitian ini bertujuan menganalisis pengaruh pemberian tekanan ortodontik terhadap perubahan mikrostruktur permukaan jaringan sementum secara laboratorik. Permukaan distal spesimen sementum akar gigi premolar yang dicabut guna kepentingan perawatan ortodontik diberi perlakuan berupa pemberian tekanan 300gr/cm<sup>2</sup> dan 600gr/cm<sup>2</sup> selama 5 hari dan 10 hari. Kemudian diuji kekerasan mikro permukaan, gambaran mikrostruktur permukaan, prosentase elemen mikrostruktur, jarak antar bidang kristal, ukuran butir kristal dan regangan mikro kristal. Ditemukan bahwa pemberian tekanan ortodontik mempengaruhi perubahan jaringan sementum dalam skala mikro maupun nano.

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#### <b>ABSTRACT</b><br>

Resorption of the root cementum as part of the risks of orthodontic treatment needs to be cautiously considered. This study aims to analyze the influence of given orthodontic force on microstructure alterations of the cementum. The tests were undertaken after the distal aspect of the root cementum was given an orthodontic force of 300gr/cm<sup>2</sup> and 600gr/cm<sup>2</sup> for 5 days and 10 days. Then tested for surface microhardness, surface morphology of the cementum, percentage of microstructural elements, distance between crystal planes, crystalite size and microstrain of the crystals. It was found that the orthodontic force has influences on the cementum tissue alterations in the micro and nano scale.</i>