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Abstract

[SOARES, Carlos Jos?/a>](#); [PIZI, Eliane Cristina Gava](#); [FONSECA, Rodrigo Borges](#) and [MARTINS, Luis Roberto Marcondes](#). Influence of root embedment material and periodontal ligament simulation on fracture resistance tests. *Braz. oral res.* [online]. 2005, vol.19, n.1, pp. 11-16. ISSN 1806-8324. doi: 10.1590/S1806-83242005000100003.

The aim of this study was to evaluate the influence of the embedment material and periodontal ligament simulation on fracture resistance of bovine teeth. Eighty bovine incisor teeth were randomized into 8 groups (n = 10), embedded in acrylic or polystyrene resin using 4 types of periodontal ligament simulation: 1 - absence of the ligament; 2 - polyether impression material; 3 - polysulfide impression material; 4 - polyurethane elastomeric material. The specimens were stored at 37°C and 100% humidity for 24 hours. Specimens were submitted to tangential load on the palatal surface at 0.5 mm/minute crosshead speed until fracture. The fracture modes were analyzed as follows: 1 - coronal fracture; 2 - cemento-enamel junction fracture; 3 - partial root fracture; 4 - total root fracture. Statistical analyses by two-way ANOVA and Tukey's test were applied (p < 0.05). The results showed that root embedment method and periodontal ligament simulation have a significant effect on fracture resistance. Artificial periodontal ligament modified the fracture modes.

Keywords : Fracture resistance; Periodontal ligament; Tooth root; Cementoenamel junction.

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