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Abstract

[ABUABARA, Allan](#); [SANTOS, Alex Jos?Souza dos](#); [AGUIAR, Flavio Henrique Baggio](#) and [LOVADINO, Jos?Roberto](#). Evaluation of microleakage in human, bovine and swine enamels. *Braz. oral res.* [online]. 2004, vol.18, n.4, pp. 312-316. ISSN 1806-8324. doi: 10.1590/S1806-83242004000400007.

The suitability of bovine and swine teeth has been evaluated when they are used as substitutes for extracted human teeth in varied researches. This study evaluated *in vitro* the marginal microleakage in human, bovine and swine enamel. Cubic cavities (2 x 2 x 2 mm³) were prepared in enamel blocks from human, swine and bovine teeth. The cavities were filled with composite resin and conventional glass-ionomer cement. All the samples were thermocycled for 1,000 cycles (5 ± 2°C - 55 ± 2°C) and immersed in 2% methylene blue solution for 12 hours. The microleakage was quantified by a spectrophotometric technique. The results were statistically analyzed using ANOVA and Tukey's test. The glass-ionomer cement presented significantly higher leakage means (µg/ml ± SD) than the composite resin for all substrates (0.0695 ± 0.01313 vs. 0.0471 ± 0.0163, p < 0.01). No significant differences were found between bovine and swine enamel (0.0668 ± 0.0246 vs. 0.0674 ± 0.0286); however, both presented statistically higher leakage means than human enamel (0.0407 ± 0.0195, p < 0.01). It was concluded that the microleakage pattern was affected by substrates, and that bovine and swine substrates allow higher marginal leakage than human substrates. The results indicate there should be precaution in the substitution of human substrate in laboratory studies of microleakage.

Keywords : Dental enamel; Glass ionomer cements; Composite resins.

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