

Effect of the active application of a universal adhesive with improved applicators [Efecto de la aplicación activa con aplicadores mejorados de un adhesivo universal]

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Introduction: Dentin permeability is defined as the passage of fluids, ions, particles, molecules and bacteria through the dentin under certain conditions. Objective: Determine the effect of the active application of a dentin adhesive with an improved applicator on human dentin hydraulic conductance in vitro. Methods: An in vitro experimental study was conducted of 40 caries-free third molars with an indication of exodontia from healthy patients aged 15-30 years, prior informed consent. The molars were cleaned, disinfected and preserved to be included in epoxy resin blocks. Cross-sectional cuts were then made to obtain dentin discs 1.5 mm thick and 25 mm in diameter. These were divided into two 20-unit groups, were subjected to etching with 37 % orthophosphoric acid, and were washed and dried. On a precision scale photopolymerizable dentin adhesive was applied, recording the force exerted. Application was performed with a Microbrush applicator in Group 1 and with an improved dedicated applicator in Group 2. The samples were then placed in a diffusion chamber to determine flow rate and subsequently estimate hydraulic conductance, thus obtaining information about dentin permeability. Results: Results were slightly lower in Group 2, but they displayed normal distribution. Conclusions: Statistical analysis with various tests did not find any significant differences in hydraulic conductance values, nor could an inverse relation be established between the force of active application of an adhesive with an improved applicator and hydraulic conductance. Therefore, use of that instrument is not advised. © 2019, Editorial Ciencias Medicas. All rights reserved.

Adhesive dental coating

Dentin

Dentin permeability