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The effect of using surface sealant after polishing on flexural strength of resin composite and glass-ionomer restorative materials

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Abstract

The aim of this study was to investigate whether using a surface sealant could improve the flexural strength of a resin composite (Filtek Z250) and a resin-modified glass-ionomer (Vitremer) after polishing. Twenty bar-shaped specimens (25 mm. × 2 mm. × 2 mm.) of the two materials were prepared. Group 1: The surface of Filtek specimens were ground with a silicon paper 1,200 grit, etched with 37% phosphoric acid, rinsed with water and dried before application of a surface sealant (Fortify). Group 2: Filtek specimens were ground, no application of Fortify. Group 3: The surface of Vitremer specimens were ground and applied with Fortify. Group 4: Vitremer specimens were ground, no application of Fortify. All specimens were immersed in 37°C distilled water for 24 hours, then subjected to the 3-point flexural testing. The flexural strength data of the same material were analyzed using t-test. Filtek 250 specimens applied with Fortify showed significantly higher flexural strength ($p < .05$) whereas the application of the surface sealant did not improve the flexural strength of Vitremer ($p > .05$).

Key words: surface sealant, resin composite, flexural strength.

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