Abstract

Aim: To evaluate the shear bond strength of current luting cements to sandblasted crown-coping substrates.

Methods: Specimens of nickel-chromium, pressable glass ceramic, and zirconia crown-coping substrates were sandblasted in three groups (n = 30 each) with 50 (group 1), 110 (group 2), and 250 lm (group 3) alumina particles at a pressure of 250 kPa. Cylinders of glass ionomer, universal resin, and self-adhesive resin cements were then built up on the sandblasted substrate surfaces of each group (n = 10). All bonded specimens were stressed to evaluate the cement–substrate shear bond strength. Both the mode and incidence of bond failure were also considered.

Results: No difference was noticed between all test groups in terms of cement–substrate bond strength. In comparison to self-adhesive type, the universal resin cement provided lower bond strengths to both metal and glass–ceramic substrates in group 1. The self-adhesive resin cement provided the highest bond strengths to the zirconia substrates in groups 2 and 3. The adhesive type of bond failure was common in the metal and zirconia substrates in all groups.

Conclusions: Cement–substrate bonding quality is not affected by the size of sandblasting particles. Resin cements bond better to different coping substrates. Self-adhesive resin cement is the best choice to bond zirconia-based substrates.

المراجع

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