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Original Article

Efficacy of ceramic repair material on the bond strength of composite resin to zirconia ceramic

Omer Kirmali , Alper Kapdan, Osman Tolga Harorli, Cagatay Barutcugil & Mehmet Mustafa Ozarslan

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Abstract

Objectives

resin in the

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(Voco, Cuxhaven, Germany); Group 4, Z-Prime Plus System (Bisco Inc., Schaumburg, IL);

composite

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at with water

divided into

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® System

Group 5, Clearfil™ System (Kuraray, Osaka, Japan); and Group 6, Z-Bond System (Danville, CA). After surface conditioning, a composite resin Grandio (Voco, Cuxhaven, Germany) was applied to the zirconia surface using a cylindrical mold (5 mm in diameter and 3 mm in length) and incrementally filled up, according to the manufacturer's instructions of each intra-oral system. Each specimen was subjected to a shear load at a crosshead speed of 1 mm/min until fracture. One-way analysis of variance (ANOVA) and Tukey post-hoc tests were used to analyze the bond strength values. Results. There were significant differences between Groups 2-6 and Group 1. The highest bond strength values were obtained with Group 2 (17.26 ± 3.22) and Group 3 (17.31 ± 3.62), while the lowest values were observed with Group 1 (8.96 ± 1.62) and Group 6 (12.85 ± 3.95). Conclusion. All repair systems tested increased the bond strength values between zirconia and composite resin that used surface grinding with a diamond bur.

Key Words:

- zirconia
- repair
- composite resin
- sear bond strength
- Y-TZP

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