Original Article

Effect of Fiber Post and Stainless Steel Wire on the Flexural Strength of Repaired Denture Base Acrylic Resin

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Abstract

The objective of this study is to evaluate the efficacy of fiber post and stainless steel wire on the flexural strength of repaired denture base acrylic resin. The forty-eight heat-polymerized acrylic specimens size 10x65x3.3 mm were divided into four groups; Group1: repaired with auto-polymerized acrylic resin (control), Group2: repaired with auto-polymerized acrylic resin reinforced with smooth surface fiber post, Group3: repaired with auto-polymerized acrylic resin reinforced with grooved surface fiber post, Group4: repaired with auto-polymerized acrylic resin reinforced with stainless steel wire. All groups were tested the flexural strength by using three-point bending machine. Statistical analyses were performed using one-way ANOVA. Values of $p<0.05$ were considered statistically significant. The results demonstrated that the flexural strength of the control group was not significantly different from the other groups, and the flexural strength of group 2-4 revealed no significant difference among themselves ($p=0.067$). In conclusion, the flexural strength of denture base acrylic resin repaired with auto-polymerized acrylic resin is not different from those repaired with auto-polymerized acrylic resin reinforced with fiber post or stainless steel wire. The fiber post and stainless steel wire are not effective in increasing the flexural strength of the repaired acrylic resin.

Keywords: Denture base repair, Flexural strength, Fiber post, Stainless steel wire

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