

پلیمریزاسیون سیمان‌های رزینی دوال کیور کاربردی جهت چسباندن پست‌های فایبری هم‌رنگ دندان

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Title: Polymerization of dual cure resin cements applied for luting tooth colored fiber posts

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Background and Aim: Insufficient polymerization of resin cements is of considerable clinical importance, because of mechanical deficiencies and biological side effects of uncured resin. Dual cure resin cements are getting popular in luting tooth colored posts and although their curing is claimed to proceed chemically, polymerization efficiency in deep areas of canal is uncertain. The aim of this study was to evaluate degree of polymerization of dual-cure resin cements used for luting translucent and opaque fiber posts in different distances from the light tip.

Materials and Methods: In this experimental in vitro study, degree of conversion of two dual cured resin cements, Rely X ARC (3M, ESPE) and Nexus 2 (Kerr, USA) were measured when used with DT-Light and DT-White posts (RTD, France). The light curing unit used was Optilux 501, with output of 650-700 mw/cm² with emitting time of 60 seconds. Degree of conversion was measured in three different depths (4, 6, 8 mm) by FTIR. The data were analyzed using ANOVA and Post hoc tests. P<0.05 was considered as the level of significance.

Results: DC% of Rely X with either of the posts was not significantly different in the studied depths (P>0.05). Nexus used with DT-Light had lower DC% in 8 mm depth (P<0.05). Nexus used with DT-White showed lower DC% in 8 mm depth compared to 4 mm depth. The control groups of both cements showed significant increased DC% in 4 mm depth compared to 6 and 8 mm depths (P<0.05). DT-White caused decreased DC% in both cements in 4 mm. DT-Light caused increased DC% of Rely X in 6 mm depth compared to DT-White and control. DT-Light increased DC% of Nexus in 6 and 8 mm depths, compared to DT-White and control groups.

Conclusion: Based on the results of this study, application of translucent fiber posts has a significant effect on degree of polymerization in dual-cure resin cements, compared to opaque types. Their better light transmission to deep areas due to the effect of optical fibers, can lead to better results.

Key Words: Fiber post; Resin cement; Dual-cure; Degree of conversion; Polymerization

: عدم پلیمریزاسیون کافی سیمان‌های رزینی منشا اثرات زیانباری از جمله کاهش خواص مکانیکی و فیزیکی و افزایش اثرات سوء بیولوژیکی می‌باشد. با کاربرد سیمان‌های رزینی دوال کیور جهت چسباندن پست‌های هم‌رنگ، پخت آن در نواحی عمقی کانال دندان از جهات مختلف قابل بررسی است.

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