

The Effect of Curing Modes on Flexural Strength and Flexural Modulus of Resin-Based Luting Cements

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ABSTRACT :

Resin cements are now extensively used especially for luting esthetic restorations and also for luting endodontic posts for superior retention and for improved resistance to root fracture as compared with conventionally cemented posts. The purpose of this study is to evaluate the effect of curing mode; Chemical Cure (CC), Light Cure (LC), and Dual Cure (DC) on the flexural strength and flexural modulus of two resin cements Variolink II, and Scotchbond Resin Cement. Sixty specimens were made in the shape of rods (25mm in diameter, 2mm in length, and 2mm in thickness) from both resin cement (30 for each). Each group was divided into 3 subgroups (n=10) and cured in the different ways according to the manufacturer's instructions. Specimens were stored for 24 hours at 37°C. Flexural strengths and flexural modulus were determined using a testing machine at a crosshead speed of 0.05 cm/min. Mean and standard deviations were calculated for each group, and the data were analyzed by two-way analysis of variance. LC and DC were significant increase flexural strengths for both cements than CC. Scotchbond Resin cement was significantly higher in flexural strength than Variolink II.

INTRODUCTION

Ceramic or resin-based composite inlays are now used as an alternative to amalgam or gold for medium to large sized posterior cavities restorations⁽¹⁾. Resin cements have been reported to produce more retention strength for post cementation

than zinc phosphate and glass ionomer cements⁽²⁾, and their use in dentistry, including, has expanded greatly in recent years^(3,4). Poor margin quality, fracture and loss of retention were the main problems facing the ceramic inlays luted using zinc phosphate or glass-ionomer cements. Therefore, resin-based luting cements have been

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