Influence of post relining with composite and association of universal dentin adhesive and self-adhesive resin cement on fiber post push-out bond strength.

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Abstract
The adhesion into root canal is a critical procedure, therefore, this study evaluated different strategies to fiber post luting. The association of the universal self-etching adhesive to the self-adhesive cement worsens the fiber post retention. And the bond quality in deeper regions of the root canal is still a challenge to be overcome.

Key words: Dental cements, cementation, dentin.

Introduction

The root canal dentin morphology does not favor the adhesive procedures, in addition, its anatomy prevents proper lighcuring in deeper areas of root canal. Therefore, the aim of this study was to evaluate the influence of post relining with composite resin and the association of universal self-etch adhesive to self-adhesive cement on push-out bond strength of fiber post.

Results and Discussion

The groups were divided according to the adhesive luting strategy: G1: post + Scothbond Multi-Purpose (SBMP) + RelyX ARC (ARC); G2: post + RelyX U200 (U200); G3: post + Single Bond Universal (SBU) + U200; G4: relined post + SBMP + ARC; G5: relined post + U200; G6: relined post + SBU + U200. The push-out test was applied until failure and failure pattern was analyzed by stereomicroscopy (n=10). The results are described in Chart 1 and Figure 1. The split plot analysis of variance showed that post relining and different luting approaches (p<0.05) affected the post retention. The composite reaming improved the post systems performance. The association of universal adhesive to self-adhesive cement decreased bond strength values. Despite luting strategy, the greater the root canal depth, worse the post retention. The predominant failure pattern was adhesive between dentin and cement in the groups that used universal adhesive and predominantly mixed in the other groups. The universal self-etch adhesive has acid monomer, as well as the self-adhesive cement, however, there was no compatibility between them.

Conclusions

The association of the universal self-etching adhesive to the self-adhesive cement decreased the fiber post bond strength. Moreover, despite luting technique, the post retention is worse in deeper areas of the root canal.

Acknowledgement

This study was supported by PIBIC/CNPq.