Temporary cement residues affect the bond strength and dentin penetration of self-adhesive resin cement in fiberglass post cementation

Zaniboni, J.F.
Silva, A.M.
Fernández, E.
de Melo Alencar, C.
Morais, J.M.P.
de Campos, E.A.
Kuga, M.C.

Abstract
This study evaluated the persistence of eugenol-containing (PR, Provy) or eugenol-free (RT, Relyx Temp, and TB, Temp Bond) temporary cement residues and its effects on push-out bond strength and dentinal penetration of the self-adhesive resin cement (Relyx U200). Eighty human roots were endodontically treated and post space prepared. Fourty specimens were distributed in four groups (n = 10): Control (CO), without any clinical procedure, PR, RT, and TB, where a metallic post was cemented with one of the temporary cements. After metallic post removal, hemi sections post space were submitted to SEM analysis. Another specimens were distributed in similar groups, but fiberglass post was cemented using Relyx U200 cement and submitted to push-out bond strength and dentinal penetration cement analysis, in post space thirds. SEM analysis were evaluated by Kruskal–Wallis and Dunn tests, while bond strength and dentinal penetration were evaluated by ANOVA One-Way and Tukey test ($p < .05$). Only in apical thirds, PR, RT, and TB showed higher persistence of residues than CO. In bond strength, PR, RT, and TB showed lower values than CO, in all post space thirds ($p < .05$). But to dentinal penetration, PR, RT, and TB presented lower values than CO only in apical thirds ($p < .05$). There is the greatest persistence of temporary cement residues only in apical post space third, providing less dentinal penetration of the self-adhesive resinous cement. However, the previous use of temporary cements has negative effects on the bond strength cementation system, regardless of the third evaluated.

Author keywords
bond strength
fiberglass post
root canal
self-adhesive cement
temporary cements