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Paper: Fiber Post Removal: Comparative Study Using a New Post Concept (IADR/AADR/CADR 87th General Session and Exhibition (April 1-4, 2009))



183 Fiber Post Removal: Comparative Study Using a New Post Concept

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P. BALDISSARA[1], *D. MELILLI*[2], *L. CIOCCA*[1], *and L.F. VALANDRO*[3], [1]*University of Bologna, Bologna, Italy,* [2]*University of Palermo, Palermo, Italy,* [3]*Federal University of Santa Maria, Santa Maria, Brazil*

Objectives: To evaluate the time required to remove endodontic posts made of quartz and glass fibers, and compare them to a new glass fiber post designed for easy removal on the basis of efficiency and tooth damages.

Methods: 40 human single-rooted teeth were treated endodontically and randomly assigned to four fiber posts groups: 1) was restored with Premier#90 (Innotech); 2) with DT#2 Lightpost (Dentsply); 3) with Unicore#3 (Ultradent); 4) with a special, soft-cored "S" glass fiber post ER-Prosthetic#3 (Overfibers). An impression of the canal was taken prior post cementation. The posts were luted with Panavia F and adhesive (Kuraray). All the specimens were mounted in a dental simulation unit to reproduce the difficulty of clinical conditions. The fiber posts were removed using a diamond bur /Gates and Largo reamer combination. The teeth were examined radiographycally 2 times seeking for cement, fiber composite debris and tooth damage. After post removal, another impression of the canal was taken for each tooth to evaluate the canal enlargement. Then, the specimens were fractured and observed microscopically.

Results: No significant differences were found among the conventional posts (groups 1-3) as regards removal time and dental tissue loss (Kruskal-Wallis, alpha=0.05). The new soft-core concept applied to the ER-Prosthetics allowed a mean rank removal time significantly lower (P=0.001) than the mean rank of group 1-3 posts (Dunn's test). The canal enlargement was significantly lower with ER posts. Root perforation occurred in groups 1 to 3, but none was recorded in group 4.

Conclusion: Removal of posts avoiding dental tissue loss is a difficult task when performed in simulated clinical conditions. A new post type conceived to be removed safely in a short time was very effective to reduce the removal time without tooth damages. Further studies will be necessary to validate this new concept.