



772 Tissue Loss During Post Removal: a New Post Concept Evaluation

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Objectives: to evaluate the tissue loss and tooth damages during fiber post removal. Clear colored fiber post removal is a challenging task due to the low color contrast with restorative materials and dentin. Methods: 40 human single-rooted teeth were treated endodontically and randomly assigned to four fiber posts groups restored with: 1) Premier90 (Innotech); 2) DT#2 Lightpost (Dentsply); 3) Unicore#3 (Ultradent); 4) a special, soft-cored “S” glass fiber post Hi-Rem Prosthetic#3 (Overfibers). An impression of the canal was taken prior post cementation. The posts were luted with Panavia F system (Kuraray). The specimens were mounted in a dental training manikin to reproduce the clinical conditions. The posts were removed using a diamond bur/Gates and Largo combination by postgraduate students. Cement and post remains were removed using an ultrasonic tip (Suprasson P5 Newtron, Satelec, France). The teeth were examined radiographically 2 times seeking for cement, fiber composite debris and tooth damage. After post and cement complete removal, another PVS impression (Elite HD, Zhermack) of the canal was taken to evaluate the canal enlargement, which was recorded by laser scanning of the impressions and calculated using 3D reverse engineering software (OpenScan). Then, the specimens were externally and internally (after fracturing) observed under the stereomicroscope. Results: among groups 1 to 3, dental tissue losses were not significantly different (Kruskal-Wallis and Dunn, $p > .05$). These groups showed 3 root perforations each and canal stripping in 18 cases. The canal enlargement was significantly lower in group 4) Hi-Rem Prosthetic posts ($p < .05$); no perforations or canal stripping occurred in this group. Conclusion: removal of posts avoiding dental tissue loss is a difficult task when performed in simulated clinical conditions. A new fiber post type Hi-Rem “easy removal post” conceived for safe and fast removal proved to be highly effective in dental tissue preservation when compared to conventional posts.
