Perbedaan Kekuatan Adhesi Pasak Fiber Pada Perawatan Saluran Akar Menggunakan Siler Berbasis Resin Epoksi Dan Kalsium Silikat = The Difference of Fiber Post Adhesion Strength in Endodontic Treatment Using Epoxy Resin and Calcium Silicate-based Root Canal Sealer

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Abstrak

Latar Belakang: Penggunaan bahan semen (siler) saluran akar dengan kandungan dan karakteristik berbeda diduga dapat memengaruhi retensi pasak fiber terhadap dinding saluran akar pasca perawatan endodontik. Tujuan : Mengetahui perbedaan kekuatan adhesi pasak fiber pada perawatan saluran akar yang menggunakan siler berbasis resin epoksi dan kalsium silikat. Metode: 30 gigi premolar bawah akar tunggal didekoronasi, dilakukan preparasi saluran akar, lalu dibagi menjadi 3 kelompok; Kelompok 1 (kontrol): gigi tanpa pengisian saluran akar, Kelompok 2: gigi yang menggunakan siler resin epoksi (AH-Plus), dan Kelompok 3: gigi yang menggunakan siler berbasis kalsium silikat (Ceraseal). Setelah pengisian saluran akar, preparasi, dan pemasangan pasak fiber. Selanjutnya gigi dipotong pada area sepertiga tengah akar setebal 2 mm kemudian dilakukan uji push-out bond strength menggunakan Universal Testing Machine. Data dianalisis dengan tes One-way Anova dan post hoc Bonferroni. Hasil: Terdapat perbedaan bermakna nilai push-out bond strength antar kelompok semen resin resin epoksi dan kalsium silikat. Kesimpulan: Gigi yang melalui perawatan saluran akar menggunakan siler resin epoksi memberikan kekuatan adhesi pasak fiber yang lebih baik dibandingkan gigi yang menggunakan siler kalsium silikat.
.....Background: The use of root canal sealers with different composition and characteristics is thought to effect the retention of fiber post in root canal walls after endodontic treatment. Objective: To evaluate the difference of the fiber post adhesion strength after endodontic treatment using epoxy resin and calcium silicate based root canal sealer. Methods: 30 samples of single-rooted lower premolar were decoronated, got the root canal prepared, then divided into 3 groups; Group 1 (the controls): samples without root canal filling, Group 2 and 3, the canals were filled with gutta percha using epoxy resin (AH-Plus), and calcium silicate (Ceraseal)-based root canal sealer. After root canal obturation, the gutta percha were partly removed, prepared for post space, and then cemented with the fiber posts. Then 2 mm thick disk were cut from the middle root section and subjected to a push-out bond strength test. Data were analysed using the one-way ANOVA and post hoc Bonferroni test. Result: There was a significant difference in the push-out bond strength value between the epoxy resin and calcium silicate-based root canal sealer groups. Conclusion: The endodontic treated tooth previously using epoxy resin root canal sealer gave better fiber post adhesion strength compared to tooth that used calcium silicate based root canal sealer.