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Sealing Properties of Four Different Post Systems. A.N. OZTURK*, A. USUMEZ, F. KONT COBANKARA, G. ESKITASCIOGLU, and S. BELLI, Selcuk University, Faculty of Dentistry, Konya, Turkey

Objective: Coronal leakage of a post treated tooth may result in recurrent caries and failure of both the restoration and the root canal treatment. Many adhesive post systems are therefore recently introduced in dentistry but sealing properties of these systems are still unclear. The purpose of this *in vitro* study was to compare sealing properties of three adhesive post systems with a conventional post system. **Methods:** A total of 40 human single-rooted teeth extracted for periodontal reasons were used. The root canals were prepared using step-back technique. Root canals were then obturated using lateral condensation technique. The teeth were divided into five experimental groups of 10 samples each and restored with the following post systems according to the manufacturer's instructions: Para Post (Coltene/Whaladent Inc. Konstanz, Deutschland), IPS Cosmo (Ivoclar, Schaan, Liechtenstein), Ribbond (Ribbond Inc. Seattle), Snowpost (Snowpost, Carbotech, Gages, France). Using a modified fluid transport model, leakage along the roots were measured. Measurements of fluid movement were made at 2 minute intervals for 8 minute and water transport through existing voids in the obturated canals were measured reproducibly in this way. Long term quality of the seal of each specimen was then measured after 7 days and 3 months. The results were analysed statistically with Mann-Whitney U and Wilcoxon Signed Rank tests. **Results:** Fiber reinforced Ribbond post system showed the best sealing even after 3 months ($0.9 \times 10^{-6} \pm 0.7 \times 10^{-6}$) ($p < 0.05$). Cosmopost showed significantly more leakage ($13.2 \times 10^{-6} \pm 3.2 \times 10^{-6}$) when compared to the other post systems ($p < 0.05$). Sealing ability of Cosmopost and Snowpost system was decreased by the time. **Conclusion:** Fiber reinforced post system used in this study seems to represent an acceptable sealing ability, on the other hand ceramic based post system needs to be evaluated because of its unacceptable leakage.