

## Comparison of Root Canal Walls Cleanliness Obturated with Two Commercially Available: Calcium Silicate Sealers and a Resin Sealer after Retreatment

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### ABSTRACT

**Background:** Despite improvements and advances in materials and methods, root canal treatment is not always satisfactory. After completing the obturation procedures, retreatment might be mandatory because of a persistent infection or reinfection of the root canal. Retreatment requires complete elimination of the root canal filling material, followed by further shaping, cleaning and re-obturation. Thus, root canal sealers removal shouldn't represent an obstacle.

**Objective:** This study aimed is to investigate and compare the cleanliness of root canal walls that were previously obturated with two types of calcium silicate bioceramic based root canal sealers compared to a resin-based root canal sealer.

**Methods:** Twenty-one single-rooted teeth were used. After complete obturation root canal fillings were removed using protaper retreatment universal system. The roots were cleaved using a hammer and chisel, the middle third of the root canal walls examined at 1000x with a scanning electron microscope.

**Results:** Comparing the amount of dentinal tubules free of the filling materials after the endodontic retreatment using the tested root canal sealers. Among the three tested root canal sealers, there were a larger number of clear dentinal tubules with ADSEAL while, a fewer open dentinal tubules with Well Root and Ceraseal.

**Conclusions:** None of the sealers could be completely removed from root canal walls. However, the number of remnants of root filling material with well root and ceraseal were significantly more, compared with ADSEAL.

**Keywords:** Calcium Silicate Bioceramic Based Root Canal Sealers, Resin Based Root Canal Sealer, Root Canal Retreatment and Scanning Electron Microscope

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