

**An evaluation of the sealing ability of
different obturation and gutta-percha
removal techniques
(A Comparative Study)**

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ABSTRACT

This in vitro study was conducted to compare the effect of using two types of rotary instruments (pees reamer & Core-Remover[®]) for delayed gutta-percha removal on the apical seal of roots filled in three obturation techniques (lateral condensation, Thermafil, and Soft-Core regular heat).

Sixty palatal roots of extracted human maxillary first molar teeth were used in this study. The roots were prepared with ProTaper manual system in crown-down manner to size F4, and then obturated with gutta-percha in different techniques.

Samples were divided randomly into 3 groups (20 roots each) according to the method of obturation; group **A**: Lateral condensation, group **B**: Soft-Core cones and group **C**: Thermafil cones.

All samples received gutta-percha removal after 7 days of storage in an incubator (37°C and 100% humidity). Each group then subdivided into 2 subgroups (10 roots each) according to the technique of gutta-percha removal; using Peeso reamer (groups **A1**, **B1** and **C1**) and Core Remover drills (groups **A2**, **B2** and **C2**). The samples were sealed coronally and then immersed in Indian ink and deposited in an incubator for a week.

The roots were demineralized with a 5% nitric acid solution, cleared in methyl salicylate and examined using a stereomicroscope under 40X magnification with calibrated grid to establish the degree of apical dye penetration in millimeters.

The results showed that there is no significant difference between the two types of rotary instruments used for gutta-percha removal regarding the apical sealing ability of the remaining gutta-percha for the three obturation techniques.