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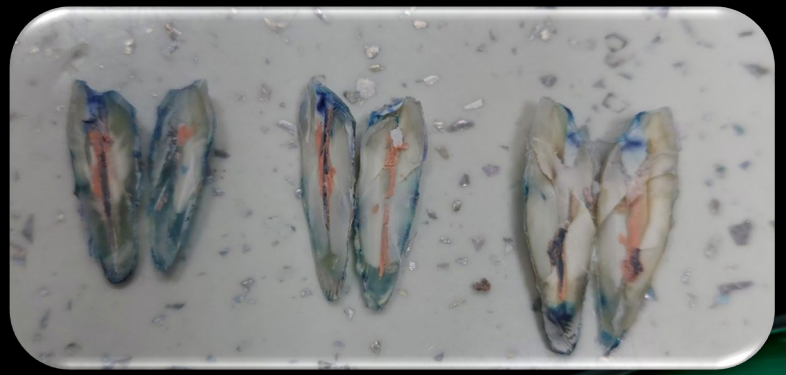
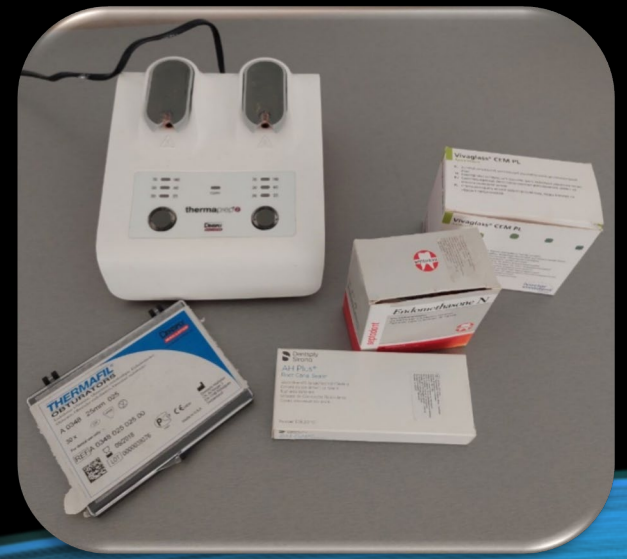
AN IN VITRO EVALUATION OF LEAKAGE AFTER OBTURATION WITH 3 DIFFERENT SEALERS AND THERMAFIL OBTURATOR





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Introduction: Obturation techniques require endodontic sealer and core. The core is mostly gutta-percha, which fills most of the endodontic space. No optimal sealer material was identified to complete the requires of endodontic obturation.

Aim: The aim of this in vitro study is to evaluate the apical leakage after obturation with root canal sealer and Termafil obturator.

Materials and Methods: A total number of 30 human onerooted extracted teeth were included in this study. The teeth were preserved in normal saline after extraction. The glide path was formed with hand No. 10 K-file, and the working length with hand K-file No. 15. There were 3 experimental groups according to the sealers used. They were instrumented with Pro Taper Gold Rotary system (SX, S1, S2, F1, F2, F3) to the working length according to the manufacturer's instruction. After the protocol of irrigation with N_2O_2 3%, NaOCl 2%, EDTA 17 %, and NaCl 0.9% the groups were obturated with sealers.

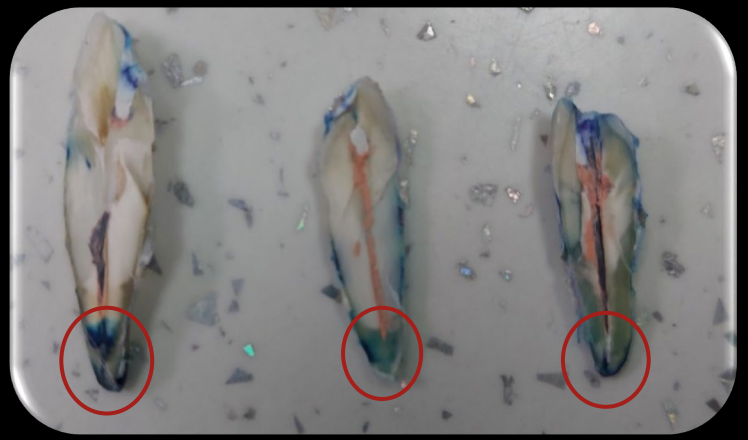
1 group (n=10 teeth): Endometasone N + Thermafil obturator

2 group (n=10 teeth): Ah plus + Thermafil obturator

3 group (n=10teeth): GJC + Thermafil obturator

All obturators were heated in Thermaprep 2

Cavit was placed as a temporary filling. Nail varnish was used to coat the surface of the roots with two layers. The samples were placed in 2 % methylene blue solution for 2 days. Methylene blue dye was used in our study to its similar molecular weight, compared with that of bacterial toxins. Than the samples were washed under water, dried and longitudinally sectioned in a vertical direction with superflex 220 diamond disc rotary dental instrument.



Conclusions: The results of this study have shown that all tested group obturated with 3 different root canal sealers in combination with Thermafil obturator have a percentage of leakage. Beside the results, the group with glass ionomer sealer in combination with Thermafil obturator has shown the least leakage in comparison to others.

Results and discussion: Tested group opturated with Thermafil obturator and Endometasone N showed higher percentage of leakage than others. Although no current sealers effectively seal the root canal, many investigators have used leakage to try to find the best sealer that completes the requires of endodontic obturation.