



Comparison of sealing ability between resin-based sealer and bioceramic-based sealer by fluid infiltration technique

OBJECTIVE :

The aim of this study was to compare the sealing ability between the bioceramic-based sealer and resin-based sealer.

INTRODUCTION :

The purpose of endodontic treatment is to prevent and treat apical periodontitis. The way to achieve is to "clean and shape". Disinfection is done by irrigation and mechanical instrumentation to remove the bacteria from root canal system. Sealing ability is one of the important factor to gain the successful endodontic treatment. Coronal leakage is able to cause the invasion of bacteria from coronal and apical into the root canal which can cause endodontic treatment failure. It can be prevented by completely 3-D filling in root canal. Because of the lack of adhesion of gutta-percha, a sealer is mainly used to fill any spaces between the canal walls and gutta-percha cones.

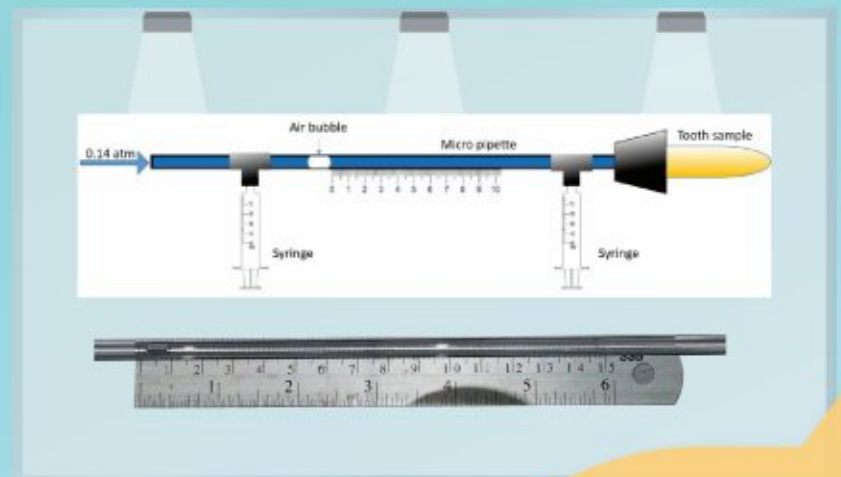
STUDY DESIGN :

Eighty-five extracted human mandibular premolars for orthodontic purpose were used. The coronal portion would be resected 12 mm from the apex and mechanical instrumentation with Mtwo system. Three experimental groups of 25 roots and 2 control groups were constituted. Group 1: A specimens were filled AH plus using warm vertical technique; Group 2 specimens were filled with BC sealer using warm vertical technique; Group 3 specimens were filled with BC sealer using single cone technique. Evaluation of the apical leakage was performed with a fluid filtration method every 15 minutes for 3 hours. ImageJ was used to qualitatively assess what mechanisms might be responsible for leakage of the different groups.

RESULTS :

There was no significant difference in fluid leakage among the groups on sealing ability.

Group	Mean (mm ³ /min)	95% Confidence Interval
AH Plus with warm vertical technique	0.123	0.093 - 0.152
BC Sealer with single cone technique	0.156	0.111 - 0.202
BC Sealer with warm vertical technique	0.084	0.068 - 0.100



CONCLUSION :

In this study, both AH plus and BC sealer can be used to seal root canal system without significant different in sealing ability aspect with any obturation technique.

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