

CHAPTER SEVEN
CONCLUSIONS AND SUGGESTIONS

7.1. Conclusions

RealSeal™ obturation materials were compared with gutta-percha and AH-Plus™ using the lateral compaction and warm vertical compaction techniques. Under the conditions of this study, the following conclusions may be drawn:

- 1.1. Canal obturation with RealSeal™ was comparable to obturation with gutta-percha at all levels using warm vertical compaction and at the 6 mm level for lateral compaction. However, lateral compaction with RealSeal™ was better for greater amount of filling core materials at the 1 mm and 3 mm levels, and for reducing the sealer and voids at the 3 mm level, than at other regions.
- 1.2. Both techniques showed comparable obturation quality with either material at the apical level (1 mm). At this level, canals with round cross-sectional shapes were more prevalent. However, at more coronal levels of the canal, warm vertical compaction was better than lateral compaction, especially for obturation with gutta-percha. At these levels, ovoid/irregular canals were more prevalent.
2. The duration for obturation using warm vertical compaction of RealSeal™ and gutta-percha was shorter than for lateral compaction of both materials. However, for obturation of both materials using the same technique, duration was similar, that is, the time taken for RealSeal™ obturation was comparable to the time taken for gutta-percha obturation.
3. Obturation of RealSeal™ and gutta-percha by lateral compaction and warm vertical compaction techniques showed no difference in the occurrence of apical extrusion.
4. SEM observation at different magnifications showed that RealSeal™ seemed to suggest a better adaptation to dentine as compared to gutta-percha and AH Plus™.

7.2. Suggestions

Future studies should examine the following:

- Periradicular response to extruded RealSeal™.
- Effect of insertion depth of the spreader on apical seal by utilizing different taper RealSeal™ and gutta-percha core materials.
- Clinical treatment outcome studies using RealSeal™.
- Effectiveness of different temperatures on flowability of RealSeal™ and gutta-percha.
- Effectiveness of the RealSeal™ sealer in obturation of lateral canals.
- Measurement of the depth of penetration of RealSeal™ sealer tags into dentinal tubules utilizing the confocal laser scanning microscope and its influence on sealing ability.