Root Tips

from

Coastal Endodontics

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Where is the "seal" in a root canal-treated tooth?

The aim of root canal treatment (RCT) is to prevent and treat apical periodontitis (AP). AP is caused by leakage of bacteria and/or their products from the root apex. During RCT instrumentation, tissue and bacteria are removed from the canal space. Obturation is done to impede the entry of bacteria into the canal. ***When RCT is done properly, the success rate is over 90%, and 82% of root canal-treated teeth remain functional for at least 9 years.***

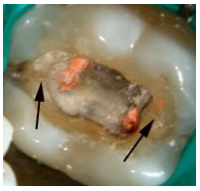
Most of us were taught in dental school that obturation of the canal space creates a "hermetic" seal within the root(s), especially at the apex. Thus, once a canal is obturated, bacteria should not be able to penetrate into the root. However, since the late 1980's, ***studies have shown that obturation with gutta percha and sealer, regardless of the method used, does not yield a bacteria-tight seal.*** If bacteria gain access to the filled canal space, they can migrate to the apex within a matter of days or weeks.

So where is the "seal" in a root canal treated tooth? ***Studies have shown that the coronal seal provided by the final restoration plays the major role in preventing bacteria from entering the root canal space.***

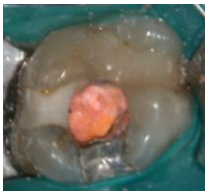
By compromising the coronal seal, ***the following have the potential to jeopardize the outcome of RCT:***

- **Retained temporary fillings**

- **Cracks in the crown or root**

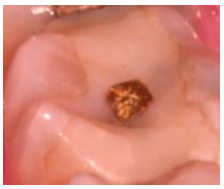


- **Gutta percha or cotton pellets in the pulp chamber**



- **Leaking crowns/restorations**

- **Exposed posts**



When restoring a root canal-treated tooth, the integrity of the existing restoration should be assessed. ***If coronal leakage is likely, the restoration must be replaced.***

I typically use a microscope to examine the restorations on teeth that I treat. If you have a question regarding a restoration's status, please give me a call.

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