



EDUCATION &
INSIGHT



SEASONS GREETINGS

Dear Colleagues,

We hope you are enjoying the first issue of "*ENDO NEWS*." This newsletter contains informative articles submitted by our doctors, well-known consultants, and contributors to peer reviewed articles, including Excellence in Dentistry, the publishers of The Profitable Dentist™. Included are articles designed to educate, increase patient satisfaction, and better manage the business aspects of Dentistry.

We hope you find each article as beneficial as we have. Please give us a call with any suggestions or feedback. Wishing you, your families, and staff a joyous holiday season!

Sincerely,

Drs. Fleisher, Goldberg, Fleischman, Barkan, Abrams, Schultz & Walters

Written by Todd M. Schultz, DMD

The adequacy and timeliness of a coronal restoration after an endodontic procedure has been shown to be critical to a successful outcome. This article is a review of two prominent studies which illustrate the significance of coronal leakage.

Swanson and Madison (1) in 1987 considered coronal leakage as a potential for endodontic failure. They felt the potential existed for oral fluids including bacteria to contaminate the root canal space as a result of the dissolution of the coronal seal. As far back as the mid 1950's, Strindberg (2) had considered apical leakage of tissue fluids around inadequate root fillings as the most common cause for root canal failure. In a study to determine whether their hypothesis was correct, Swanson and Madison found that after exposing open root canal chambers to artificial saliva, there was significant leakage of the exposed root canal after only 3 days. The experiment was continued for 8 weeks. Interestingly, the amount of measured leakage was not significantly different after 3 days when compared to the full 8 weeks. The study demonstrated that 79 to 85% of the leakage occurred during the first 3 days of exposure to oral fluids.

In a 1991 study by Magura, et al (3) extracted maxillary anterior root canal filled teeth were challenged with human saliva exposure. Measurements were made at different intervals to determine at what rate salivary penetration occurred. There was a statistically significant difference noted at day 5 when compared to day 2. Salivary penetra-

tion on day 90 was almost 5 times that seen at the end of the first week. The authors recommended retreatment of obturated root canals which have been exposed to the oral environment for 3 months or more.

Research demonstrates that canals can become contaminated as early as 3 days after exposure to human saliva. A tooth with a shorter root length will have a greater amount of leakage in a shorter amount of time. If a post space is present in the canal the time period for clinically significant leakage could be even less. Cavit has been shown as an adequate temporary restorative material for sealing endodontically treated teeth. However, the longer the temporary filling remains in the tooth, the greater the potential for leakage.

These studies clearly suggest a permanent restoration should be placed soon after endodontic treatment is completed. This minimizes the opportunity for coronal leakage and the likelihood of coronal fracture. Upon completion of an endodontic procedure in our practice, patients are advised to contact their restorative dentist for prompt placement of a permanent restoration.

References:

1. Swanson KS, Madison S. An evaluation of coronal microleakage in endodontically treated teeth. Part I. Time periods. *J Endodon* 1987;13:56-9.
2. Strindberg LZ. The dependence of the results of pulp therapy on certain factors. *Acta Odontol Scand* 1956;14(suppl 21):1-175.
3. Magura ME, Kafrawy AH, Brown CE, Newton CW. Human saliva coronal microleakage in obturated root canals: an in vitro study. *J Endodo* 1991;17:324-31.