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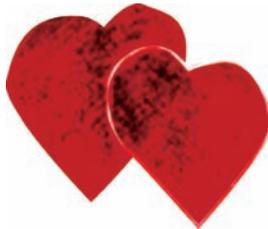
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Heart Health Month - A Good Time to Lend a Helping Hand



The economic climate in Southeast Michigan is in the forefront of both local and national news,

on a nightly basis. As more and more people in Michigan struggle, the demands on Oakland Country Food Banks continue to grow. With this in mind, Endodontic Associates Waterford **Drs., Carl Botvinick, Allan Jacobs and Craig Duhaime** joined **Drs. Pat Ainslie and Laura Zetu**, to host a Valentine's Food Drive on Thursday, February 12, to benefit the Baldwin Center in Pontiac.

Their goal was to fill up the North Summit Medical Building lobby with donated products. The event was an overwhelming success as area dentists and their staff donated hundreds of non-perishable food products.

Everyone that participated was invited for soup and coffee (emulating a true Soup Kitchen). Coffee was donated by Starbucks Coffee, and soup was donated by Zoup Fresh Soup Co. As an added incentive, a raffle was held, offering a pair of Detroit Red Wings Tickets, won by Jennifer from **Dr. Nassar's** office and two Detroit Red Wings Autographed Chris

Chelios Photo Plaques, won by Lena from **Drs. Malis and Jones** office and Kim from **Dr. Jenaras'** office.

Endodontic Associates Drs., Carl Botvinick, Allan Jacobs, and Craig Duhaime along with Drs. Pat Ainslie and Laura Zetu were so pleased by the response that they made a cash donation to the Baldwin Center on behalf of all of the offices that participated. A night that started as a call for help ended with good food, good friends and



EA Waterford lobby over-flowing with donated food

a great feeling of caring support for our community. Our thanks to all of you that contributed and made the Valentine's Food Drive a success. ■

EA Unique Clinical Case

Case report by Dr. Craig Duhaime

Locating and Treating Additional Canals

One of the most important aspects of endodontic therapy is locating and treating all of the canals within the root canal system. Recognition of radiographic clues that multiple canals are present pre-operatively is essential to achieving predictable outcomes in endodontics. Advances in radiography coupled by the use of microscopes, and apical negative pressure irrigation has greatly enhanced our ability to locate, clean, and shape canals that may have otherwise been left unnoticed / incompletely treated.¹⁻³ Recently, a 51-year-old male presented for clinical examination of tooth #5, which had a provisional crown and was tender to percussion. Radiographic examination revealed a well-circumscribed periapical radiolucency. There were some subtle clues



Figure 1

regarding the presence of multiple canals: multiple lines / PDL's, "fuzzy" / non-distinct radiographic apex and a "fast break" / canal that appears to discontinue at some point within the root (see figure 1).⁴ After

the pulpal and periapical diagnosis was made, endodontic therapy was initiated. Working length was determined using an apex locator, and canals were cleaned and shaped. With the use of a surgical operating microscope, a distal buccal canal orifice was observed



Figure 2



Figure 3

branching off of the main canal in the buccal root. This was then confirmed by placing a #8 hand-file into the canal and taking a periapical radiograph (see figure 2). The additional root canal was cleaned, shaped and all canals irrigated using the EndoVac[®] system. Root canals were then obturated, (figure 3). The patient was referred back to his general dentist for the final restoration and will be followed in one year to determine healing .

Adhesive Cementation of Endodontic Posts

The retentive effect of adhesive systems for endodontic post cementation is expected to improve marginal adaption with better apical seal, increase post retention even with reduced post length, relieve stresses within the root, optimize fracture patterns in restoration and, at least for upper incisors, increase failure resistance compared with conventional cementation. To test the influence of nonadhesive, self-adhesive and etch-and-rinse systems, Naumann et al from the University of Leipzig, Germany, tested the following null hypotheses:

- Conventional nonadhesive zinc phosphate cement is as reliable as a self-adhesive and etch-and-rinse adhesive cement during simulated functional force application; and
- There is no difference between the load capability of adhesive and nonadhesive cements. Forty human maxillary central incisors were divided into 4 groups (n = 10). Teeth were endodontically treated and restored using glass fiber posts luted with 4 different cement/composite resin combinations:
 - RelyX Unicem (3M ESPE, Seefeld, Germany)/Clearfil Core (Kuraray Europe, Duesseldorf, Germany),
 - RelyX Unicem/LuxaCore-Dual (DMG, Hamburg, Germany),
 - Zinc phosphate cement/Clearfil Core & LuxaCore-Dual/Clearfil Core.

A 2-mm ferrule preparation was performed. All specimens received adhesively luted all-ceramic crowns and were exposed to thermal cycling and mechanical loading (TCML) before subsequent static loading. Then, the specimens were loaded into a universal testing machine ($v = 1 \text{ mm/minute}$) until failure. Failure detection was set at a 10% loss of the maximum applied force. To reduce excessive stress concentrations, a 0.3-mm-thick tin foil was positioned between the steel piston and the palatal crown surface.

The results of this study did not support

(continued on page 3)

1. Nair M, Nair U. Digital and Advanced Imaging in Endodontics: A Review. *J Endodon* 2007;33(1):1-6

2. Yoshioka T, Kobayashi C, Suda H. Detection Rate of Root Canal Orifices with a Microscope. *J Endodon* 2002;28(6):452-453

3. Nielson B, Baumgartner C. Comparison of the EndoVac System to Needle Irrigation of Root Canals. *J Endodon* 2007;33(5):611-615

4. Slowey R. Radiographic Aids in the Detection of Extra Root Canals. *Oral Surg Oral Med Oral Pathol.* 1974 May;37(5):762-72

Mineral Trioxide Aggregate for Open Apex Teeth

Apexification, defined as “a method of inducing a calcified barrier in a root with an open apex or the continued apical development of an incompletely formed root in teeth with necrotic pulp,” and establishing a root-canal space that can be successfully obturated. Numerous procedures have been recommended to facilitate this by inducing root-end barrier formation. Calcium hydroxide (Ca[OH] 2) has been the material of choice for inducing the formation of an apical hard-tissue barrier before placing a long-term root filling.

Despite a long history of use in apical closure procedures, the use of Ca(OH)2 for apexification presents several problems, including the long time required for root apices to close, the number of “dressings” necessary to complete closure, the role of infection and the fracture resistance of teeth after the long-term application of Ca(OH) 2. Poor patient compliance also has a negative influence on outcomes of traditional apexification procedures.

Mineral trioxide aggregate (MTA) has recently been recommended to create an apical barrier. MTA has the ability to induce cementum-like hard tissue when used adjacent to the periradicular tissues.

Advantages of MTA, compared with the combination of Ca(OH) 2-induced apical closure followed by compacted gutta-percha, include:

- ※ A reduction in treatment time,
- ※ Smaller likelihood of fracture and
- ※ Fewer visits to the dental office.

In order to report on the clinical outcome when MTA is used to obturate teeth with open apices, Witherspoon, a private practitioner from Texas, et al retrospectively analyzed 116 patients treated in a single private endodontic office from 1999–2006. Treatments on 144 teeth were completed either in 1 visit (92/144) or 2 visits (52/144) with an interim Ca(OH) 2 interappointment medication.

A total of 54% (78/144) of the teeth were available for recall. The maximum time to recall was 4.87 years; the mean time to recall was 19.4 months. Of the cases recalled for a period of 1 year or longer, 93.5% of teeth treated in 1 visit healed, and 90.5% of teeth treated in 2 visits healed (Table 1).

Conclusion

This data shows high success rates for 1- and 2-visit treatments. MTA obturation of canals with open apices is a viable alternative to the use of Ca(OH) 2 to induce apical closure.

Witherspoon DE, Small JC, Regan JD, Nunn M. Retrospective analysis of open apex teeth obturated with mineral trioxide aggregate. *J Endod* 2008;34:1171-1176. ■

Treatment	Number of teeth with 1-year recall or longer	Healed	Healing	Persistent disease
All teeth	52	48	3	1
1 visit	31	29	2	0
2 visits	21	19	1	1

Table 1. Results for recalled teeth with 1-year follow-up or longer

either of the 2 hypotheses. Significant differences between the experimental groups regarding load capability and fracture patterns were observed. Six specimens of the zinc phosphate-Clearfil cement group failed early during TCML.

In the Unicem-Clearfil group, all specimens survived TCML. In the Unicem/LuxaCore and LuxaCore/Clearfil groups, 3 and 2 specimens, respectively, failed early during TCML. The highest median fracture load value was observed

for the group in which RelyX Unicem was used for post cementation in combination with Clearfil Core as buildup composite resin. The combinations of Unicem with LuxaCore-Dual and LuxaCore-Dual with Clearfil Core revealed similar load values; however, these combinations performed less reliably.

Conclusion

Conventional nonadhesive post cementation failed to withstand simulated func-

tional forces as well as a self-adhesive composite resin or an etch-and-rinse-based bonding system. Therefore, nonadhesive post cementation may not be recommended for clinical application. However, the reliability of adhesive cementation of endodontic posts appears to be material-specific.

Naumann M, Sterzenbach G, Rosentritt M, et al. Is adhesive cementation of endodontic posts necessary? *J Endod* 2008;34:1006-1010. ■

Quote of the Quarter

“Happiness is not a station you arrive at, but a manner of traveling.”

— Margaret B. Runbeck

Peter Vanderkaay Brings Home the Gold

Endodontic Associates was fortunate to participate in swimmer, Peter Vanderkaay's, triumphant return home on Saturday, December 6 at the Royal Oak YMCA. **Dr. Mark Vanderkaay** hosted friends and professional colleagues to celebrate Peter's athletic successes.

Over 250 people packed the parking lot and upper rec room at the downtown Royal Oak Y, on a snowy afternoon, for their chance to meet Peter, take a photo, get an autograph and see his three Olympia medals (2004 Athens gold 4 x



Peter Vanderkaay's gold medal smile

200m freestyle relay, 2008 Beijing gold 4 x 200m freestyle relay, and 2008 Beijing bronze 200m freestyle). Peter and his relay teammates, Michael Phelps, Ryan Lochte and Klete Keller, hold the current World, Olympic and American Records, for the 4 x 200m freestyle relay.

Dr. Vanderkaay and his wife Robin were thrilled to share their son's accomplishments. Robin said, "It is unbelievable how special this is for people here in Michigan. Peter thought no one would

come, but we told him, these people feel so much pride in your Olympic victories; for your family, Detroit, and our country."

Endodontic Associates' doctors have been colleagues and friends of Dr. Vanderkaay for years and we are honored to salute Peter and his amazing success. Congratulations to the Vanderkaay family and we will be pulling for Peter in the 2012 Summer Olympics. ■



Vanderkaay signs for fans

6th Annual ADA Give Kids A Smile Day



Dr. Jay Lang and assistant Ashley Toth

On Friday, February 6, the American Dental Association executed their 6th annual Give Kids

a Smile national children's dental access day. Give Kids A Smile is a program that reaches out to children in income chal-

lenged homes throughout the country to provide free dental care to those who need it most. Some of the free services provided include dental treatment, oral health screenings, and educational and preventative programs. With oral health being a key to overall good health, there were 12,000 dentists nationwide that teamed with over 27,000 hygienists, assistants and volunteers to help over half a million children. Endodontic Associates **Dr. Jay Lang** and assistant Ashley Toth from our Rochester Hills office participated in the program at the University of Detroit-Mercy Dental School. In the photograph to the left, they were able to help a 13 year old girl by performing 3 root canals, free of charge. ■