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## EA INTRODUCES NEW ASSOCIATE, DR. MOELLER



Endodontic Associates is proud to announce the addition of a new associate, **Dr. Drew Moeller.**

Dr. Moeller will join **Doctors Carl Botvinick, Craig Duhaime and Tiffany Chimelak** in the Waterford, Clarkston and Commerce locations.

Dr. Moeller graduated from Calvin College in 2007 with a Bachelor of Science degree in Biology. While attending Calvin College, Dr. Moeller founded the school's first pre-dental club in 2003. As a dental student, Dr. Moeller was a member of the Xi Psi Phi dental fraternity. Dr. Moeller graduated from dental school at the University of Michigan in 2011.

After receiving his D.D.S., he practiced as a general dentist at the Hackley Community Care Center in Muskegon Heights, MI, providing comprehensive dental care for two years. In addition, Dr. Moeller also served as an Adjunct Clinical Lecturer of general practice dental work at the University of Michigan School of Dentistry from 2011-2013. Dr. Moeller completed his specialty training in Endodontics at the University of Detroit-Mercy School of Dentistry in June, 2015.

He is an active member in the American Association of Endodontists, American Dental Association, Michigan Dental Association, the Michigan Association of Endodontists, and the Oakland County Dental Society.

Dr. Moeller loves spending time with his wife, family, and friends. He also enjoys golf, mountain biking, travelling, and frisbee.

## MTA-repaired Root Perforations: Long-term Results

**N**onsurgical repair of iatrogenic root perforations creates several challenges for the clinician. Adequate visualization of the perforation may be difficult because bleeding from the site is quite common. Additionally, managing both the root canal space and the perforation is technically very demanding. Historically, the prognosis for perforation repair was less than ideal, most likely due to materials that did not provide an optimal seal and/or were not highly biocompatible. Since mineral trioxide aggregate (MTA) was introduced, several studies have confirmed its favorable biocompatibility, sealing ability and bioactivity.

In 2010, Mente et al from Ruprecht-Karls-University of Heidelberg, Germany, published the results from phase 1 of their study of teeth with root perforations treated by the orthograde placement of MTA in the perforation area, in which 86% of the 21 teeth examined were healed. However, none

of the analyzed potential outcome factors displayed a significant effect on the outcome, suggesting that the study was underpowered. A power calculation performed after phase 1 indicated that at least 40 teeth would be needed to determine a 95% confidence interval for the healing rate.

Phase 2 of the study reinvestigated the potential outcome predictors with a larger sample size and longer follow-up periods than those applied in phase 1. All the patients involved in phase 1 were recalled for phase 2.

Root perforations in different areas of the root repaired with MTA between 2000 and 2012 were investigated. Calibrated examiners assessed clinical and radiographic outcomes by using standardized follow-up protocols 12 to 107 months after treatment. The outcomes were dichotomized as healed or diseased.

Of the 64 teeth (85% recall rate), 86%

were healed. The univariate analyses (chi-squared tests) identified 2 potential prognostic factors: the experience of the treatment providers and placement of a post after treatment. In the multivariate stepwise logistic Cox regression, none of the potential prognostic factors displayed a significant effect on the outcome at the 5% level.

### Conclusion

The 86% success rate for teeth undergoing root perforation repair in this historical cohort study indicated that the orthograde repair of root perforations by using MTA is an appropriate treatment option in all areas of the root. Additionally, this favorable success rate remained consistently high, even after follow-up periods of more than 4 years and up to 9 years after treatment.

*Mente J, Leo M, Panagidis D, et al. Treatment outcome of mineral trioxide aggregate: repair of root perforations—long-term results. J Endod 2014;40:790-796. ■*

## Treatment of Necrotic Immature Permanent Incisors

**P**roper management of the necrotic immature permanent incisor following traumatic injury is critical for its long-term survival. Traditionally, apexification with calcium hydroxide [Ca(OH)<sub>2</sub>] paste has been highly successful, but requires several visits over a number of months to complete. An alternative method, using mineral trioxide aggregate (MTA) as an apical plug, has gained significant popularity because it decreases the overall treatment time necessary to establish a hard tissue barrier at the

open apex of the traumatized tooth.

Lee et al from Taipei City Hospital, Taiwan, compared clinical outcomes in 40 children (18 female, 22 male; ages 6.5 to 10 years) with necrotic immature permanent incisors treated with Ca(OH)<sub>2</sub> or MTA to develop apical hard tissue barriers and potentially achieve additional root length.

Forty necrotic immature incisors with open apices ranging from 1 mm to 3.5 mm in diameter were evaluated.

The 40 teeth included:

- 32 maxillary central incisors
- 4 maxillary lateral incisors
- 4 mandibular central incisors

Twenty incisors had root apices less than 2 mm wide; the other 20 incisors had root apices between 2 mm and 3.5 mm wide. The 40 incisors were evenly allocated to 4 groups according to patient age, type of tooth and width of root apex. Each group underwent a different treatment modality:

*Continued on page 4*

## BUSINESS ADVICE

### 10 Leadership Principles To Achieve Elite Status

**Mark Divine was an accomplished CPA before launching a second career as a Navy SEAL. How do the SEALs realize such phenomenal success? In his Wall Street Journal best-seller *The Way of the SEAL*, the former commander on SEAL Team One outlines 10 leadership principles doctors can use to build a winning team.**

#### 1. Realize your 20X factor

We drastically sell ourselves short on what we can actually accomplish, says Divine. During the repeated bouts of bone-chilling surf torture as part of his SEAL training, his instructor initiated him into the 20X worldview. You are capable of achieving at least 20 times what you think you can. Challenge yourself to up your game and start breaking free of perceived limitations.

#### 2. Strive with an uncommon desire to succeed

The game is won or lost before it begins, says Divine. Align yourself with the SEAL ethos – a SEAL is a common man with an uncommon desire to succeed. By doing so, you will ignite the team into a state of thought and action that will not be denied.

#### 3. Forge grit

80% of those who aspire to be SEALs drop out and never reach that goal. The ones who succeed are not usually the best athletes; they are simply the ones who never surrender. Develop five skills to forge mental toughness: control your response, control attention, develop emotional resilience, set effective goals, and visualize powerfully.

#### 4. Always think offense

Playing defense, or passively hoping for the best outcome, is not part of the SEAL mindset. Rather, scan the field, prepare contingency plans, and then take action at the first sign of opportunity.

#### 5. Breathe like a warrior

Operating at peak levels in high-stress environments is crucial to the successful warrior, whether on the battle field or in the dental practice. Box breathing will help you stay calm and focused. A few minutes of deeply inhaling to a four count and exhaling to a four count releases tension, engenders emotional control, and rivets you powerfully into the present moment.

#### 6. Target big payoffs

SEALs select high-value targets and remain laser-focused on accomplishing their mission. Your team must always analyze which targets fit your mission, and avoid wasting time and energy chasing the wrong goals.

#### 7. Embrace SEAL values and traits

SEALs expect to lead and be led. As such, they demand uncompromising integrity, discipline, and innovation. Their training is never complete, and neither should yours or your staff's.

#### 8. Eliminate distractions and open your vision to simple solutions.

As such, you can control where, when, and how to make an impact. Start by decluttering physical surroundings, prioritizing commitments, dealing with emotional baggage, and smartly delegating to others.

#### 9. Mix the ingredients of an elite team

Focus equally on the three main components: individual self-mastery, team culture and spirit, and organizational structure and support. With practice, you can interweave these three to create a phenomenal team.

#### 10. Develop a “me and team” attitude

SEALs can act as lone wolves, and so can your team members. You must maintain the discipline to work on yourself, while also working on the team.

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## Quote of the Quarter...

“Our greatest weakness lies in giving up. The most certain way to succeed is always to try just one more time.” – *Thomas A. Edison*

## CLIPS & PICS

Endodontic Associates Rochester office hosted their summer “Picnic in the Park”ing lot on Tuesday, June 16. Over 100 dentists and staff attended the event on a beautiful summer day and enjoyed BBQ and Mediterranean fair. The casual environment allowed EA **Drs. Glass, Nowicki, Vokal** and **Ryan** to visit with the dentists and staff while they enjoyed their lunch.



## Treatment of Necrotic Immature Permanent Incisors *Continued from page 2*

- Group 1 teeth were treated with ultrasonic filing and MTA placed in the apical root canal.
- Group 2 teeth were treated with ultrasonic filing and Ca(OH)<sub>2</sub> medication.
- Group 3 teeth were treated with hand filing and MTA placed in the apical root canal.
- Group 4 teeth were treated with hand filing and Ca(OH)<sub>2</sub> medication.

After the ultrasonic or hand filing procedures, each of the 40 treated canals was dried with 3 paper points and loosely packed with Ca(OH)<sub>2</sub> in the coronal root canal as an intracanal medicament for 7 days. Access was sealed with intermediate restorative material. During the second visit, each canal was irrigated with a sodium hypochlorite solution and dried with 3 paper points. Each tooth continued to receive the same treatment as was

performed at the first visit until clinical symptoms and signs associated with the necrotic pulp subsided.

A paste of MTA and sterile water was placed in the apical part of the root canal of incisors in groups 1 and 3. A well-mixed Ca(OH)<sub>2</sub> paste was placed in the root canal of incisors in groups 2 and 4. Radiographic evidence of the formation of an apical hard tissue barrier showed the teeth to be endodontically restored. Group 1 incisors needed the shortest mean duration (5.4 plus or minus 1.1 weeks) for apical hard tissue barrier formation, followed by group 3 incisors (7.8 plus or minus 1.8 weeks), group 2 incisors (11.3 plus or minus 1.3 weeks) and group 4 incisors (13.1 plus or minus 1.5 weeks). Group 1 incisors had a significantly shorter mean elongated root length (2.1 plus or minus 0.2 mm) after treatment than group 2 incisors (3.5 plus or minus 0.3

mm; *p* less than .001); group 3 incisors had a significantly shorter mean elongated root length (2.1 plus or minus 0.1 mm) after treatment than group 4 incisors (3.7 plus or minus 0.3 mm; *p* less than .001).

### Conclusion

Necrotic open-apex immature incisors treated with ultrasonic filing plus MTA placement needed the shortest mean duration for apical hard tissue barrier formation. For elongation of apical root length, Ca(OH)<sub>2</sub> treatment was better than MTA, regardless of which instrumentation method was used.

*Lee L-W, Hsieh S-C, Lin Y-H, et al. Comparison of clinical outcomes for 40 necrotic immature permanent incisors treated with calcium hydroxide or mineral trioxide aggregate apexification/ apexogenesis. J Formos Med Assoc 2014;doi:10.1016/j.jfma.2014.06.005.rs. J Endod 2015;41:28-32. ■*

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