

Endodontic Spotlight

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Summer 2014



Introduction

Summer in Seattle sure is nice! I hope you are enjoying the great weather and long days. This edition doesn't have a theme – instead we have three separate articles that I found really interesting. We start off with a study that looks at the importance (or lack thereof) of filling lateral canals. Next we have a systematic review that looks at systemic inflammation in patients with endodontic disease. Finally, we have an article reminding us to always be aware of potential conflicts of interest and biases of the authors or speakers. I hope you all find these studies as interesting as I do.

Ricucci D, Siqueira JF. Fate of the tissue in lateral canals and apical ramifications in response to pathologic conditions and treatment procedures. J Endod 2010;36:1-15.

This article analyzed lateral canals (and apical ramifications) histologically to determine their importance in endodontic treatment procedures. The authors studied histologically serial sections of 493 teeth from various clinical situations. Overall, the tissue in the lateral canals was similar to the condition in the adjacent main canals (i.e. the lateral canal was vital if the main canal was vital, and it was necrotic if the main canal was necrotic). They also found that the tissue in the lateral canal was relatively unaffected and uncleaned by instrumentation and irrigation, regardless of the technique used. Interestingly, lateral canal that appear radiographically “filled” were not actually obturated. Instead there was a mix of inflamed pulp tissue and necrotic debris combined with the filling materials. In fact, forcing obturation material into vital tissue in a lateral canal may result in physical damage, chemical toxicity, and unnecessary inflammation. Thus the ability to “fill” a lateral canal does not improve success rates and therefore should not be used to advocate one technique over another. While a “filled” lateral canal may look nice, it is actually unimportant for the outcome of the procedure.

SUMMARY: Lateral canals that appear radiographically “filled” were not actually filled and instead contained necrotic or inflamed tissue, and the “filling” of these lateral canals does not affect success rates.

Gomes MS, Blattner TC, Filho MS, Grecca FS, Hugo FN, Fouad AF, Reynolds MA. Can apical periodontitis modify systemic levels of inflammatory markers? A systematic review and meta-analysis. J Endod 2013;39:1205-17.

This systematic review and meta-analysis evaluated the effect of apical periodontitis on systemic markers of inflammation. The authors' systematic review yielded 20 articles that matched their inclusion criteria. They compared the level of various inflammatory markers in patients with apical periodontitis compare to controls who were without endodontic disease. They found that apical periodontitis was associated with increased levels of CRP, IL-1, IL-2, IL-6, asymmetrical dimethylarginine, IgA, IgG, and IgM. Thus, apical periodontitis contributes to a systemic immune response beyond the localized lesion. *SUMMARY: Apical periodontitis causes an increase in systemic levels of inflammatory markers.*

Brignardello-Petersen R, Carrasco-Labra A, Yanine N, Ulloa C, Araya I, Pintor F, Villanueva J, Cornejo-Ovalle M. Positive association between conflicts of interest and reporting of positive results in randomized clinical trials in dentistry. J Amer Dent Assoc 2013;114:1165-70.

This systematic review article evaluated the effect of conflict of interest on the results of clinical research in dentistry. The authors evaluated all randomized controlled trials published in the ten dental journals with the highest impact factor from July 2010-June 2012, and found 135 trials that met their inclusion criteria. They analyzed the articles to determine whether the authors had a conflict of interest, such a financial incentive for the intervention or product to do well. They classified the results as positive (if the intervention had statistically significant benefits or lacked adverse effects, or if the competitive product had no benefit or significant adverse effects), mixed (if the intervention had both positive and adverse effects), or negative (if the intervention had no benefit or numerous adverse effects). They found that if the authors had a conflict of interest, they were 2.4 times more likely to report positive results than mixed or negative results. In addition, the greater the conflict of interest (i.e. ownership or significant financial interest in the product or company), the more likely they were to report positive results. Thus, this study shows that it is extremely important to recognize who is presenting the findings and identify possible conflicts of interest. *SUMMARY: Authors with a conflict of interest in a product are more likely to report positive results favoring the intervention in randomized controlled trials.*

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