

“Dental Myths & Controversies II” Continuing Education Course

The Fifth Annual PROH Conference was held at the World Trade Center in Portland on November 21, 2008. Below is a summary of the continuing education course presented by Oregon Health & Science University faculty at the conference.



“What is the best material for pulp capping?” by Tom Hilton, D.M.D., M.S., Alumni Centennial Professor in Operative Dentistry. He directs the PROH network and maintains a part time private dental practice.

Dr. Hilton opened his presentation by confirming that the most recent Cochrane review and systematic review both supported the practice of avoiding pulp exposure rather than removing caries completely. After reviewing literature on various materials used for pulp capping, he concluded that zinc oxide eugenol, glass ionomer and adhesive systems are poor agents for direct pulp caps. Mineral trioxide aggregate (MTA) is showing results comparable to calcium hydroxide (CaOH) in short term data. The “gold standard” continues to be CaOH. It has the longest track record of clinical success, it is the most cost effective and it is likely that CaOH is the effective agent in MTA.



“Caries management: Is fluoride enough?” by Juliana da Costa, D.D.S., M.S., assistant professor, department of restorative dentistry and a practitioner in the Oregon Health & Science University Faculty Dental Practice.

Dr. da Costa began by verifying that there is evidence for the validity of dentists' subjective assessment of a patient's level of caries risk. She reviewed the literature on numerous topical agents (fluoride toothpaste, highly concentrated fluoride toothpaste, fluoride rinse, fluoride gel, fluoride varnish, xylitol, chlorhexidine rinse and MI paste) and the use of combinations of agents. There is overwhelming evidence that the daily use of fluoride toothpaste and the biannual application of fluoride gel are beneficial in decreasing caries incidence. The evidence is either controversial or lacking that fluoride rinse, fluoride varnish, xylitol, chlorhexidine rinse and MI paste decrease caries incidence. There is reason to believe that preventive strategies are more effective when they are combined than when they are administered individually, nonetheless the evidence is lacking. There is evidence that active fluoride therapy, combined with good oral hygiene, supervision of caries progression and a change in criteria for when to place restorations, led to marked reduction in the need for restorations. Dentistry has moved historically from extraction to surgical restoration. Identification of early carious lesions and treatment with nonsurgical methods, including remineralization, represent the next era in dental care.



“Does orthodontic treatment harm, improve, or have any affect on a patient's periodontal status?” by Jennifer Crowe, D.M.D., third-year resident, department of orthodontics.

Dr. Crowe presented several articles in which malocclusion was mildly correlated with periodontitis. However, research does not support *generally* recommending orthodontic treatment to patients as a means of preventing future periodontal breakdown. More research is needed to better identify which patients benefit most from orthodontic treatment. In general, orthodontics does not have a clinically significant negative impact on a patient's periodontal status. She emphasized that teeth should be moved within their biologic limits, but that more research is needed to determine those limits. All patients must be closely monitored to avoid active periodontitis during orthodontic treatment. Periodontal disease is multi-factorial and variation between individuals is high. Orthodontics can be a useful adjunct to periodontal and restorative procedures even when the periodontium is compromised or teeth are deemed un-restorable.



“Scalpel vs. Brush: What is the best biopsy technique?” by Cindy Kleinegger, D.D.S., M.S., associate professor, department of pathology and radiology and a practitioner in the Oregon Health & Science University Faculty Dental Practice.

Dr. Kleinegger pointed out early in her presentation that brush cytology is not equivalent to a biopsy. Not all microscopic features of epithelial dysplasia can be assessed on cytology. Brush cytology is designed to investigate clinical lesions that would otherwise not be subjected to biopsy because the level of suspicion for carcinoma is low based upon clinical features (class II lesions). An atypical or positive brush cytology must be followed with a scalpel biopsy for definitive diagnosis. Brush cytology may be useful in patients with class II lesions who may not comply with monitoring and in patients with class I lesions (clinically suspicious lesions) who will not accept immediate scalpel biopsy. Better research is needed on class II lesions and the study design needs to include brush cytology *and* scalpel biopsy on *all* lesions.

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“Adhesive systems: Does simpler = better?” by Jack Ferracane, Ph.D., chair, department of restorative dentistry and division director, department of biomaterials and biomechanics. He is also a principal investigator for the PROH network.

Dr. Ferracane identified the claims of self-etch systems as being simpler to use (they are quicker and less technique sensitive) and resulting in better performance (equal/better adhesion to dentin and enamel, less post-operative sensitivity, and equal/better clinical performance with regard to retention and leakage/staining). The evidence indicates that for resin dentin adhesives, the three part etch-and-rinse systems are still considered the gold standard, and simpler does not yet mean better. Overall, the following conclusions were drawn: 1) GIC shows the best results and least variability; 2) 3-step etch-and-rinse and 2-step self-etch were the best resin adhesives; 3) 2-step etch-and-rinse shows high variability, especially those with acetone solvent; and 4) 1-step self-etch shows the most variability and the poorest results (although it improved with separate enamel etching).



“Is local anesthetic nerve damage affected by injection technique or drug used?” by Leon A. Assael, D.M.D., professor and chair, department of oral and maxillofacial surgery and director of the oral and maxillofacial surgery residency program.

Dr. Assael began with a review of the various types of persistent altered sensation. Evidence that points to the mechanics of the injection causing nerve damage include: 1) two out of three cases involve the lingual nerve, 2) needle piercing or breakage occurred, 3) trismus is often associated with the loss of sensation, and 4) hematoma can be associated with the loss of sensation. Evidence that the drug used causes nerve damage is indicated by 1) amides causing more problems than esters; 2) higher concentrations lead to higher risk; and 3) vasoconstrictors increase the risk.