

Introduction of Electric Handpieces into the Dental Curriculum: Assessment of the Maryland Experience

Gary D. Hack*, Sandy Allen, Kathy J. Martin, Louis G. DePaola
 University of Maryland Dental School, Baltimore, MD, USA

Abstract

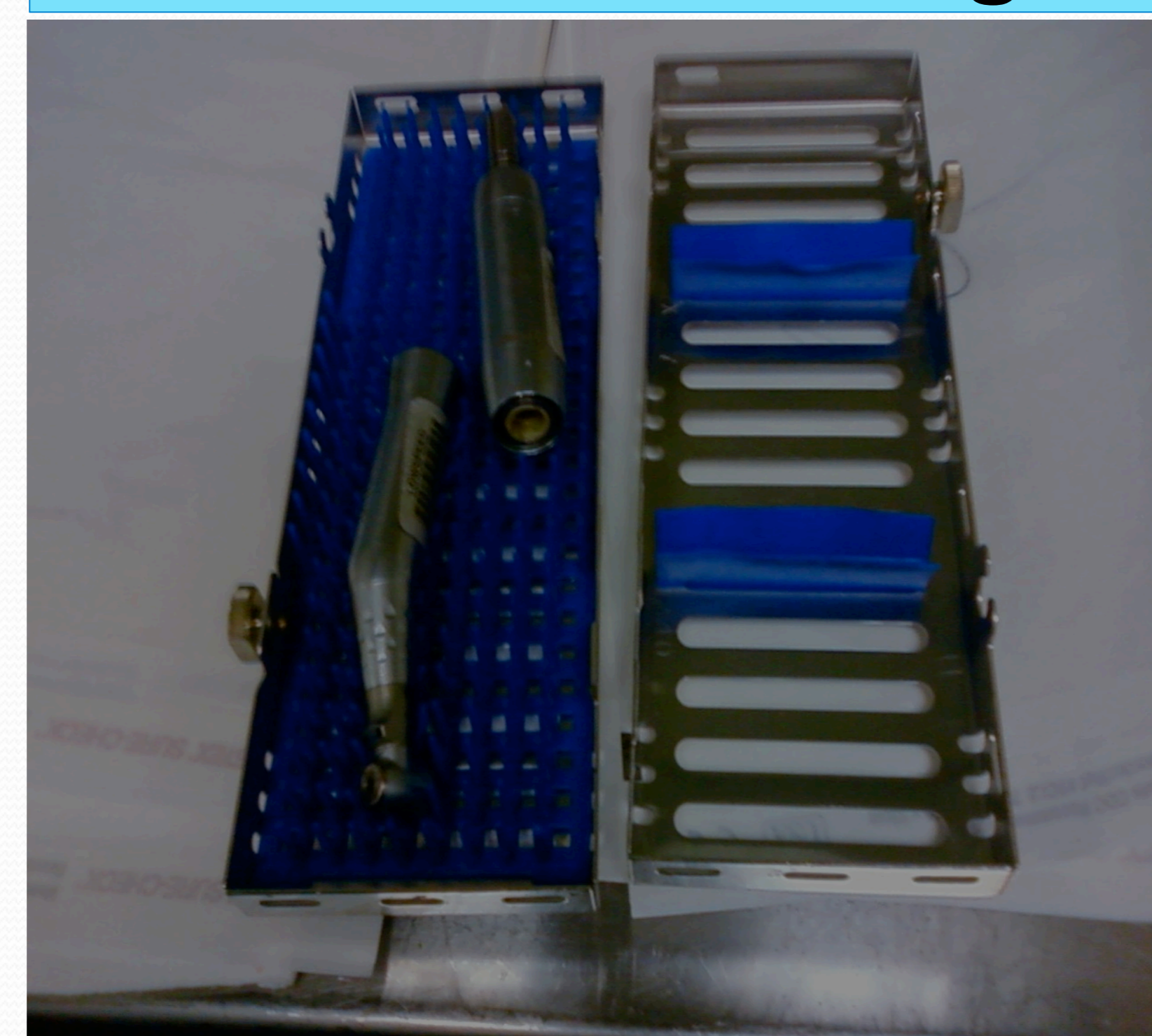
Making the switch from air-driven to electric handpieces was guided by the vision of incorporating state-of-the-art technology into the dental curriculum. A leap of this magnitude required a culture shift, and as with every new program, an assessment of the environment was necessary. Therefore, the strengths, weaknesses, opportunities, and threats associated with such a decision were evaluated. Included in this assessment were planning methods and processes, decision making approaches, and implementation strategies.

The authors will describe the decision making process used to procure electric handpieces, to drive the transition from air-driven to electric, and to utilize InfoDot technology to track, order, repair and maintain handpiece components. Based on our initial experiences, we will discuss the future of electric handpiece use in dental education, current product effectiveness, and acceptance by the students and faculty. Suggestions will be made that will assist in integrating electric handpieces into the dental curriculum.

Procedures Performed with Electric Handpieces

	Anafran Polishing	Root Canal Treatment - NITI	Pin placement	Deep Caries Removal	Caries Removal	Bone Surgery	Pin Hole Drilling	Temporary crown & bridge prep.	Gold and Microfill Polishing	Gross Caries Removal	Interdental and Subgingival Polishing	Anafran Overhang Removal	Chrome Cobalt Endo Technique	General Cavity Prep. Finishing	Retention Adjustment	Porcelain Groove Cutting	Frail C+B Prep. Finishing	Cavity Prep. Finishing Bevels + Margins	Occlusal Adjustment	Dentin Reduction	Tooth Sectioning	Bulk Enamel Reduction	
CA 1:5 500 - 200 000 Bur speed in rpm																							
CA 1:1 100 - 40 000 Bur speed in rpm																							

Protective Casing



InfoDots & Bar Codes



Safety Button



Simulation



Dream Room Clinic



Transitioning to Electric Handpieces

In September, 2006, the University of Maryland Dental School moved into a facility that was outfitted with the most technologically advanced dental equipment available at the time. A major component of this process was selection of the equipment to be used by the students. The sequence of events listed below describes the phases of our experience of transitioning to electric handpieces.

- 2005-06** Planning, Purchasing, & Preparing
- Sept 2006** Introduction /Implementation Phase
- 2007** Introduction to Simulation
- 2007-09** Stabilization/ Identifying Improvements
- 2010** Lessons Learned/Future

Sterilization



Conclusion

Our assessment of this curricular change evidenced a positive student response to the use of electric handpieces throughout their years of dental education. Electric handpieces represent an innovative technological advancement that clearly supports curriculum enhancement. Through the use of electric handpieces, we were able to introduce our students to rotary endodontics as well as implant placement techniques during their preclinical training and carry this experience into their clinical years.