

Where we have been, where we are and where we are going? Is “Big Brother” watching us?



Dr Gary Glassman

The future of endodontics is bright and holds incredible promise as we continue to develop new techniques and technologies that will allow us to perform endodontic treatment painlessly and predictably. For the past 100 years the objective of dentistry has always been and always should be to maintain the natural dentition wherever possible. And the objective of endodontic treatment has never wavered since root canal treatment was first performed; that being to prevent or treat apical periodontitis such that there is complete healing and an absence of infection, while the overall long-term goal is the placement of a definitive, clinically successful restoration and preservation of the tooth. With the emergence of exciting technologies, clinical endodontics is seeing higher successes never seen before.

The Dental Operating Microscope (DOM), and ultrasonics instruments have allowed us to locate canals with surgical precision while allowing maximum conservation of tooth structure. The design and metallurgy of nickel titanium files (NiTi files) with its super elastic characteristics allow better maintenance of the original canal anatomy, while the motion, rotary, reciprocation, or a combination of both produce less extrusion of debris, increased resistance to cyclic fatigue, allow greater cutting efficiency and reduced time for canal shaping compared to stainless steel files.

Mineral trioxide aggregate (MTA) has been and continues to be a remarkable and biocompatible restorative material that has become the standard for pulp capping and root perforation, and has salvaged countless teeth that previously had been considered hopeless.

Methods to improve disinfection in the root canal system has been the focus of perhaps the greatest international attention in endodontics. Better root canal disinfection may lead to even greater endodontic successes!

But perhaps the greatest boon to our profession and a pivotal tool in the practice of endodontics is the use of cone beam computed tomography (CBCT). Interpretation of a two-dimensional image of a three-dimensional object can make the interpretation of radiolucencies, complex dental anatomy and surrounding anatomic structures very difficult. CBCT technology, with its three dimensional rendering ability has allowed detection rates of root canal anatomy and detection of periradicular pathology to be dramatically increased. Although the detection of vertical root fractures is difficult at best with both conventional radiology and CBCT, CBCT has been shown to be an excellent supplement to conventional radiography in the diagnosis of root fractures. The differentiation between internal and external resorption; location and size, has allowed diagnosis and subsequent treatment to be more decisive and predictable. Unnecessary investigative treatment may be avoided now that three dimensional evaluation of these 'lesions' can be achieved. The same pertains to the precise nature of a perforation and the role that CBCT plays on its subsequent treatment. Post operative healing can be monitored more accurately with CBCT due to its superior resolution compared to conventional radiology and more 'informed' decisions can be made with respect to treatment planning.

Will the information that the CBCT provides force the clinician to exhaust all efforts to find all the canals and subsequently address the anatomy? Will it force the clinician to elevate their efforts to provide a better debrided canal and a more thorough obturation? Is “Big Brother” watching? I believe the answer to all of the above is YES!!

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