Better technology and referral relationships — Are they related?

By Dr Gary Glassman, CA

Advancements in technology have made it easier for dental professionals to deliver successful endodontic treatment. Nevertheless, endodontics continues to be a specialty that is best handled by trained experts.

It is appropriate for a general dentist to perform endodontic treatment on a patient when he or she is properly trained to perform the said procedure, has the appropriate equipment and possesses the requisite skill set for the treatment. However, if there is any doubt that the clinician can perform the procedure to the same standard of practice as an endodontic specialist, the case should be referred out. The American Association of Endodontists offers its case difficulty assessment form and guidelines to help general practitioners with case selection.

Rapid advancements in endodontic technology have permitted dental professionals to enjoy higher success rates. Patients can retain their teeth for as long as possible, reducing the need for retreatment and/or extraction, and thereby limiting the high costs they once faced.

The dental operating microscope is a prime example. As it enables clinicians to visualise the anatomy of the pulp chamber, they can locate the canal anatomy more proficiently and offer minimally invasive treatment by keeping access openings as small as practical while maintaining the structural integrity of the tooth.

In addition, practitioners are able to maintain a more ergonomically favourable position, thereby reducing stress on their back and neck.

Ultrasonic instruments with specially designed endodontic tips allow clinicians to uncover calcified canals, remove pulp stones, refine access preparations, and remove posts and cores. They aid in the debridement of the root canal system during irrigation protocols in a controlled and predictably safe manner.

Cone beam computed tomography (CBCT) offers unprecedented accuracy and acuity. We can visualise the tooth in 3D; it is like a road map to the anatomy of the root canal system. In addition, the resolution of the CBCT is higher than that of traditional radiography, allowing the detection of periradicular pathology, which may have otherwise gone undetected. The type, location and extent of internal/external resorption can now be definitively diagnosed and the relationship of normal anatomical structures can be assessed with ease.

Dental service organisations offer specialists like endodontists an opportunity to connect with general dentists and their patients, who may require advanced care. An open dialogue between endodontists and their general dentist colleagues will help ensure that patients receive the best possible treatment. Plus, the accessibility of the patients through their general dentist’s office is often more practical and convenient, both for the patients and the practitioners.

Communication and continuing education are key components of the relationship between endodontists and general dentists, noting that a true partnership between practitioners ultimately leads to better patient care.

Dr Gary Glassman
Endodontic Surgery
https://www.rootcanals.ca
Dentsply Sirona launches the TruNatomy™ solution, redefining root canal treatment

Combining Swiss precision and advanced engineering, the TruNatomy™ range offers clinicians a solution that provides efficient performance and increased respect of the tooth anatomy, combined with a smooth user-experience.

By Dentsply Sirona

TruNatomy™ unique combination of features was developed in partnership with skilled practitioners, Dr. George Bruder and Dr. Ove Peters, leaders in the field of endodontics, working in partnership with the Dentsply Sirona’s Maillefer Research and Development Engineering teams. TruNatomy™ capitalizes on Dentsply Sirona’s ten years of experience in manufacturing files like ProTaper® and WaveOne® Gold families. Combining Swiss precision and advanced engineering, the TruNatomy range offers clinicians a solution that provides efficient performance and increased respect of the tooth anatomy, combined with a smooth user-experience.

Additionally, there is a growing interest in maximizing the preservation of dentin in endodontics and TruNatomy™ addresses that need. Thanks to its slim, highly flexible alloy wire and regressive taper, TruNatomy™ enables clinicians to provide a smooth predictable root canal treatment even in cases with curved canals or limited straight line access. TruNatomy™ is available with matching ConformFit™ gutta-percha points, paper points and irrigation needles.

Innovations simplify traditional workflows: “Our developments in consumables provide solutions to dentists’ challenges in filling treatment and endodontics as well as with the emerging digital dentistry,” says Thomas Leonardi, Group Vice President Consumables Dental Product Group at Dentsply Sirona. “And, as a result, we expect reduced chair time for our patients and improved patient satisfaction.”

With a unique set of features, TruNatomy™ offers a host of benefits including:
- Better performance and more space for debridement and debris removal thanks to a new file design with an enhanced off-centered cross section, a slimmer NiTi wire and a higher speed of operation provides greater efficiency with less torque.
- Respect of the natural tooth anatomy thanks to its superior canal centering ability. The instrument adjusts to the canal (and not the other way around).
- Preservation of the tooth integrity achieved by the combination of the file geometry, the slim wire and its increased flexibility together with a shorter green handle that perfectly fits micro-head handpieces, allowing to perform efficient root canal treatment without straight line access, only removing dentin where clinically needed.
- A smooth experience with files that progress down the canal with almost no screwing in effect, giving you a full sense of control during the whole preparation.
- Simplicity since this single-file shaping system (following the use of the TruNatomy™ Optic Modifier and TruNatomy™ Glide Path) is an easy to learn rotary endo solution complemented by matching paper points, Conform Fit™ gutta-percha points and a flexible irrigation needle.

New Propex IQ® apex locator from Dentsply Sirona: Cutting-edge technology for more efficient root canal treatments

By Dentsply Sirona

With Propex IQ®, Dentsply Sirona is now launching the first apex locator on the market that can be combined with a smart handpiece – the X-Smart IQ® – and that can be fully integrated into an iPad platform – the Endo IQ® application. The apex locator offers clinicians the latest technology for root canal treatment to the highest standard.

In root canal treatments, it is important to work with extreme accuracy and precision. For every root canal that needs shaping, the dentist must determine the working length. The new Propex IQ® apex locator from Dentsply Sirona Endodontics brings modernized smart technology to endodontic practice. The accurate and reliable detection as well as the visualization of the progression of the endodontic file in the root canal – which can be compared to a parking sensor in the car – provide security for the dentist and enable him to focus more on the patient.

Propex IQ® offers the most comprehensive package of tools when the apex locator is used together with the X-Smart IQ® handpiece and the Endo IQ® application. It is a consistent ecosystem where Endo IQ® is the core and Propex IQ® and X-Smart IQ® are the functional supplements. When the devices are used together, they allow clinicians to customize individual settings before the treatment of the canal they want to treat. If the feature Shaping Target for instance is enabled, once the preset-point has been reached, and auto-reverse feature is activated, the X-Smart IQ® handpiece automatically changes the motions of the files and reverts them back. A further advantage. With the app, clinicians can monitor the progression of the file on their iPad throughout the full course of the treatment.

“Digital technologies can bring real added value to clinicians in endodontic practice today”, says Valerie Baschet, Group Vice President Global Endodontics, Dentsply Sirona. “At Dentsply Sirona we are pleased that our new Propex IQ® apex locator combines latest technology with our many years of experience in endodontics. This way, we help clinicians to treat the root canals even more efficiently and accurately.” It is planned that Dentsply Sirona will further expand its endodontic practice ecosystem based on the Endo IQ® software with further elements in the future.

With a weight of just 80 grams, the apex locator is ultra-light and portable. The device can be placed on the tray during treatment. Propex IQ®, X-Smart IQ® and Endo IQ® can be used together for 16 treatments without having to recharge the batteries. The smart handpiece is ergonomically shaped and meets the highest demands of everyday practice. It is connected to the apex locator with a cable. The communication to the Endo IQ® app takes place wirelessly. Firmware upgrades for using the Propex IQ® apex locator and X-Smart IQ® handpiece are fully integrated in the Endo IQ® application and can be easily installed by updating it. Propex IQ® can also be used modularly, without the smart handpiece and the app.

Find out more by scanning the QR code.
TruNatomy™

• More space for debridement & debris extraction
• Respect of the natural tooth anatomy
• Preservation of tooth integrity while allowing for appropriate irrigation, disinfection and obturation

For a truly smooth, controlled and efficient experience.

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E=mc³: Endodontics is equal to the third power of many changes

By Dr Kenneth S. Serota, USA

Revolutionary protocols and materials science demonstrate the evolving sophistication of modern era root canal therapy. The technological advances of the past three decades have enabled greater debridement and disinfection of the labyrinthine root canal space, iterations of apex locators, enhanced magnification and illumination, new file designs and metallurgy provide for bio-minimalism and diminished fracture potential. The development of bio-active adherent sealers has enhanced the biologic potential of root filling. However, the sum of these innovations has not as yet produced a substantive increase in treatment outcome percentages. For years, clinicians have accepted on faith the purported marketing claims of company-supported in vitro testing. Fortunately, scientific determination of the metrics of success of preclinical studies has replaced the possibility of experimental bias.

The most profound change in endodontics is the recognition that root canal therapy is a restoratively driven discipline. Bio-smart materials used in the root and crown do not require egregious removal of tooth structure as dictated by classical protocols. Clinicians blinded by the optics of the “artistry” of radiographic results are recognizing that this does not represent the totality of the biologic requirements of success.

The “look” academically disenfranchised the clinician from the understanding of the biomechanical dynamics of dentine and its impact on the potential for fracture. The excessive removal of tooth structure to promote adequate preparation for restoration is now recognized as the most important tipping point in the configuration of the restoration required.

The rigid restorative mandate of posts and cores had the propensity to cause catastrophic failure. Fortunately, reduced taper, new irrigation products have reduced the retention of greater volumes of tooth structure and the costs of new equipment. Overprepared tooth structure is not necessary in the adhesion era.

The dogma of the protocol of cleaning, shaping, irrigation and “mono-bloc obturation” is axiomatic folly. The pendulum swings of new equipment and treatments are not necessarily best practices. The primary disease vector of pulpal and peri-radicular disease is biofilms to date, the mechanism for their removal remains elusive. The work of Kishen and Shrestha on biofilm disruption by nanoparticles shows the greatest hope for elimination of recrudescent disease as a consequence of biofilm resistance intractability.

The ebbs and flows of endodontic growth, even if measured in dollops, has always have been part of the terrain of interdisciplinary dental therapy. The recognition that endodontics is an equal member at the table of disciplines is now assured as the pendulum extends to extend its involvement beyond the office. Endodontics is a foundational component of the state of oral health. Its outreach is now extended to a point commensurate with its potential.

Dr Kenneth Serota graduated with a DDS from the University of Toronto Faculty of Dentistry in Canada in 1973 and received his Certificate in Endodontics and Master of Medical Sciences from the Harvard–Forsyth Dental Center in Boston in Massachusetts in the US. Active in online education since 1998, he is the founder of the ROOTS endodontics forum and the NEXUS interdisciplinary forum. Dr Serota is an adjunct clinical instructor in the University of Toronto post-doctoral endodontics department.