

A Philosophical Shift in the Provision of Root Canal Procedures is Essential

Daily, one can observe the use of social media to extol the two-dimensional achievements of technologically driven root canal procedures. Curvatures exist in large numbers; accessory and lateral canals are predominant; teeth purported to have 5, 6, 7, and maybe more separate and distinct canals are highlighted; and self-aggrandized heroism around curvatures tends to support a continuous flow of technological attainments. One may question what is wrong in this. Teeth are being retained, at least for the final radiograph, as the clinical skills of many clinicians are being showcased for the world to see on social media platforms. Manufacturers are pleased to see their developments being put to test, and marketing managers are excited to know that their sales forces are showcasing that they are meeting the challenges posed by the erratic and unpredictable root canal anatomy. Unfortunately, most of these represent a single tooth procedure with little substantial long-term follow up, which tends to send mixed messages and serve as a narrowly focused goal for aspiring dentists, postgraduate students, and endodontists. These postings are being viewed as the essence of the specialty, which could not be further away from the scope of this specialty (1).

However, let us put that discussion aside and look deeper into the real essence of what is happening in the provision of these procedures, and let us focus on them to look at the historical and prevailing philosophies. The traditional concepts of root canal preparation, biomechanical preparation, chemomechanical preparation, or cleaning and shaping have been known for decades. However, when one carefully considers these terms or concepts, little is known regarding the salient technological and biological implications and ramifications desired or projected outcomes. The same concept is true in case of a pulpectomy procedure, i.e., root canal treatment. Furthermore, what is lost is how these implications are integrated and how clinicians must constantly and vigilantly rethink what they are doing so that each step in the process focuses on the outcome of long-term tooth retention. Introspectively, let us redo the paradigm in a meaningful way that can be embraced by all clinicians, at least for root canal procedures.

Once a root canal procedure is indicated, the usual approach is to establish an acceptable access opening; however, let us not get into the empirical focus on minimally invasive access openings as the scientific finality of that concept is far from being conclusive for many reasons. The next procedure is to establish a reliable and safe pathway for the apical extent of the root canal; this is contemporarily known as a glide path, which is nothing more than a patent pathway. In itself, this concept is routinely violated because nothing glides, as many authors and clinicians may only teach it as a pecking motion. However, this is where the overall paradigm requires a cognizant shift in thought, a shift that should foremost be in the clinician's mind during all root canal procedures. Consider the following, and when you do constantly ask the question "WHY":

1. The first procedure is to **enlarge** the canal, which is primarily technical in nature, using a vast array of new tools.
2. The second procedure is to **shape** the canal, and in the process, focus on both technological and biological principles.
3. The third and fourth procedures are to **irrigate and disinfect** the canal, respectively, which are primarily biological processes. While irrigation is used during the two previous procedures, the ultimate process of irrigation focuses on thorough tissue removal, including the smear layer, which then enables the disinfection phase.
4. The fifth procedure is to **fill** the canal space in all dimensions, which is primarily technical to achieve a long-term biological outcome, i.e., healing of the periapical tissues and prevention of further disease.

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5. The sixth procedure is to **restore** the tooth with a functional and viable coronal restoration, i.e., to ensure tooth stability and periodontal health.

Enlarge, Shape, Irrigate, Disinfect, Fill, Restore

Maybe it is time to eliminate some archaic terms such as chemomechanical and biomechanical preparation in addition to the cleaning and shaping verbiage that has mindlessly and meaninglessly permeated our lexicon based on our current knowledge as well as to elevate our focus on what we are actually doing during root canal procedures, thereby choosing a

better pathway to achieve our goal of long-term tooth retention in full and pain-free function.

References

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