



# Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology

## EDITORIAL

### Are we doing enough?

This will be my last editorial in this journal, because I recently relinquished my role as the Endodontology section editor. I have enjoyed this role immensely, and I have seen the growth of the endodontology knowledge base at first hand. During the >10 years I have served in this role I have experienced an astonishing increase of manuscript submissions. Endodontology research is no longer limited to a few countries but is becoming increasingly spread to all corners of the world. However, as the research interest in endodontology is increasing, endodontic preservation of teeth in dental practice is under increased scrutiny and questioning by many interests but especially those of the more lucrative dental implant craze. I believe we are at a crossroads and that we need to carefully evaluate where we have been and where we are heading. Critical analysis is now important, so that we can together form a successful plan for the future.

I regularly receive manuscripts on cross-sectional outcome studies of endodontic treatment from various countries or population groups. These studies report results which are, in most cases, depressingly similar. They show that residual disease after endodontic treatment, in general population groups, is high. Any way that we look at these results, the numbers of untoward outcome in general practice is unacceptable if we compare the frequency with results from controlled outcome studies. A year after treatment of endodontic cases with uncomplicated pulpal diseases, the result should be highly predictable and successful. Some endodontists like to put forward insurance data to show how rosy the endodontic picture is. Unfortunately, insurance data tells nothing about residual disease, only retention. In addition, there are many reliability questions involved with insurance data mining. Therefore, it does not change the disease information obtained from more detailed studies.

Why are we in this embarrassing situation in a discipline that in scientific journals normally reports a high rate of healing (success)? Advances in recent years

have mostly been associated with instrument design and materials, which has resulted in improvements where the treatment can be delivered with less patient suffering in a shorter time period. There is little evidence, however, that the treatment outcome is significantly enhanced.

We have through objective research assembled essential factors for a successful endodontic treatment. However, all this essential information has been lost in the transfer to the treatment room where our entire endodontic knowledge base has been brutally collapsed into an expedient process, all too often, called “doing a root canal.” The literature tells us that the treatment of a tooth diagnosed with a vital and inflamed pulp (pulpitis) has a significantly higher rate of success compared with teeth with pulp space infection and periapical disease. In the first case the treatment should focus on asepsis, whereas the latter diagnosis requires a focus on antisepsis. Real life is not that clear-cut, and all kinds of variations exist in between. Despite this knowledge, most dentists use only 1 treatment modality or diagnosis, superficially known as “doing a root canal.” This is not surprising, because most pre- and postdoctoral teaching programs fail to make a distinction between the various pulpal diseases and their optimal treatment. This is a practice which is also furthered by the American Dental Association/American Association of Endodontists (AAE) insurance codes, which make no distinction for treatments of various teeth with simple or complex pathology. It is a travesty that graduates of higher education, dentists/endodontists, are unable or unwilling to differentiate between the 2 treatment concepts limited to just 2 fundamentally different diseases. This result provides an environment where the science-based treatment of a disease takes a back seat to a mechanical procedure (“doing a root canal”).

Is there a fix to this very severe problem of poor endodontic treatments in dental practice resulting in a high number of unfavorable treatment outcomes? Yes, but not until the specialists (and their organizations)

and educators of the endodontology field seriously change their approach to endodontic education, at both pre- and postdoctoral levels. The trend has too long been downward to mediocrity. We must therefore take charge and first accept that at most dental schools in the USA (and probably the world), the dental graduate has insufficient endodontic case experience to be a safe independent beginner. The experience required to graduate has continually been lowered to a level where even the best student lacks minimal competency, any way that we define it. Although a poor excuse, lack of suitable patient material is often used by administrators as an explanation to this phenomenon. Thus, the classic clinical teaching model is no longer working and must be modified to allow for a higher patient throughput satisfying the needed flow of cases. An endodontic procedure is irreversible and more complex than a restoration with amalgam or resin composite. Still, the endodontic educator appears satisfied with a graduate's single-digit case experience when the restorative dentistry educator often requires triple-digit case experience for graduation. The schools' curricula also often severely limit the didactic time to a level where technique gets the majority of time and the understanding of pathology, microbiology, and treatment objectives are minimized.

These topics are also often missing in postgraduate teaching programs, especially in large 2-year programs. The subjects are taught, but the facts are rarely practiced. Is the treatment protocol regularly modified owing to pulp or periradicular diagnosis? Is biopsy material regularly discussed at light-microscopic levels? Is asepsis systematically taught by using microbiologic techniques? Is antiseptic success regularly tested by a simple culturing technique or systematic multiyear follow-ups? These are simple teaching techniques that help the student's understanding and demonstrate facts. Instead the specialist-to-be reads endless number of papers on these subjects, and the facts often enter one ear and leave the other without much mental retention. In microbiology, the postgraduate student reads and learns to regurgitate hundreds of bacterial strains and molecular mediators without much understanding of what it means clinically, if anything. We seem to be

mostly infatuated with high-tech toys and tissue-engineering biology while forgetting the basics. I am old-fashioned enough to believe that it is now time to return to a solid teaching base and by rigorous follow-ups make sure that the graduates have a good intellectual understanding of the objectives of endodontic treatment. That requires hard-working dental school teachers and program directors, solidly supported by the local community of endodontic specialists and their national organizations (AAE). The quality of endodontic treatment in general practice must improve, or the scope of cases should be restricted to simple vital pulp treatment. These changes are necessary to enhance the standing of endodontic treatment as a valuable therapy option. Endodontic treatment is highly successful if executed in the right way. Only by solid efforts by all of us and by abandoning "social promotion" of students/trainees can the trend be changed and lead to an acceptable competency.

I hear much too often from my specialist friends how general dentists do unsatisfactory endodontic treatments requiring retreatments or repairs by specialists. However, we have ourselves created this situation by ignoring the predoctoral programs and focusing all our efforts on postdoctoral education. To remedy this serious deficiency is everyone's responsibility and must be shared by "town and gown." Therefore, the specialist organizations, such as AAE, must look beyond their parochial interest and politics and truly get engaged in the process of high-quality endodontic education at all levels. This will be a very heavy chore and may require organizational changes. Not until basic endodontic treatment of the general public is performed at an optimal level, and therefore highly successfully, will the speciality flourish again.

Thank you for listening to me a last time. As always, I have enjoyed the opportunity to share my thoughts with you.

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