



## High-tech endo – is this the key to success?



When assessing the recent developments and improvements in the field of endodontics over the last ten years it is clear that most innovations have been limited to new devices, instruments and materials. Remarkable progress can be seen with the introduction of rotary nickel-titanium systems, electronic apex locators, operating microscopes, and new devices for thermoplasticised root canal fillings. At the same time, new materials like MTA, Resilon root canal filling material and MTAD, to mention but a few, have been developed. Without doubt, most of these innovations make endodontic treatment more comfortable, faster and less exhausting for both the patient and the endodontist.

Meanwhile, for some endodontists conventional stainless steel hand-instruments or the traditional lateral compaction technique are still smiled upon. Those who do not routinely use a microscope in their everyday practice or who have not yet included warm gutta-percha filling techniques in their treatment spectrum might have the impression that it's too late for that now!

With all the hype, it should be remembered that there is little scientific evidence that this tendency for 'high-tech endo' really contributes to an improved treatment outcome. At the same time, several epidemiological studies from around the world demonstrate persuasively that on average the prevalence of root canal filled teeth associated with radiographic signs of periapical pathosis is considerably high, and that according to different criteria the technical standard of endodontic treatment is surprisingly often less than adequate. To influence the treatment outcome of everyday endodontic

treatment it seems advisable to remember the main biological principles of endodontic therapy: asepsis, antisepsis, and the use of biocompatible materials. Obviously, a deeper insight and improved knowledge of biological, microbiological and histological principles are of utmost importance in modern endodontics. Certainly, a highly radio-opaque root canal filling with excellent maintenance of the original canal curvature looks nice and pleases the endodontist, but even those cases will fail without a thorough antimicrobial regime. The most important aspect is to remove the microorganisms located inside the endodontic space. Thus a biologically based concept of endodontic treatment, including 'old-fashioned treatment procedures' like the rubber dam, proper cleaning and shaping and sufficient irrigation of the root canal, still seems to be the real key to success.

Against this background, ENDO tries to provide you with valuable information of current developments of new devices and materials (see the review by Vaudt et al on rotary root canal instruments in this issue), and will from time to time consolidate and update the current knowledge of biological basics. With this in mind, I would like to draw your attention to the remarkable overview by Özok et al on the importance of biofilms in root canal infection.

So my advice: do not over-emphasise technical aspects and enjoy your ENDO!

Edgar Schäfer