"The integrated systems provide enormous support for the user during root-canal preparation"

An interview with Dr Emanuele Ambu, Italy

Dr Emanuele Ambu

_Dr Emanuele Ambu is an internationally recognised endodontic expert. During the 15th Annual Congress of the European Society of Endodontology (ESE), which took place from 14 to 17 September in Rome, Italy, the dedicated Italian specialist offered interesting insights into his working methods. He explained why it is particularly important to have high-quality instruments in endodontics and why he therefore likes to work in collaboration with the Japanese company Morita.

_Marcel Meurer: *Dr Ambu, what are you intensively involved in at the moment?*

Dr Ambu: In practical research, I am currently focusing on the application of digital volume tomography in endodontic treatment. I am also involved in the so-called hybrid concept, which is a working method that enables quicker, more reliable preparation of the root canal.

_How important is it in endodontics to be up to date on the state of the art of this specialised field?

Extremely important! During the last 15 years, there has been a whole series of paradigm shifts in the area of root-canal treatment (RCT). Newly developed instruments and materials definitely support the endodontists, thus ensuring a much more reliable and easier treatment procedure. There are now rotary nickel-titanium instruments (NiTi files) that enable preparation of the root canal within a few minutes. Moreover, instruments such as the apex locator also help considerably to improve the quality of any endodontic treatment, as the entire therapy can be performed more quickly and with less pain for the patient. In addition, there is technological progress regarding the cleaning and sealing procedures of the root canal, and microscopy and 3-D volume tomography (CBCT) have considerably facilitated endodontic treatment success. Surgical microscopes and 3-D volume tomography are extremely essential in treatment planning and in the therapy itself to ensure successful completion of complex endodontic cases. At the end of the day, it is our duty as conscientious dental practitioners always to treat patients according to state-of-the-art techniques.

_How important are specialist congresses such as the ESE for you? What are the most important findings that you took with you this year from Rome?

I think specialist society congresses are very important. Since I joined the ESE in 1999, I have not missed one single congress. This year's event in particular, was one of the most interesting: over 200 lectures, fantastic poster presentations and also the fact that Rome is a city that radiates a special magic, even for Italians like me. I was personally involved during the congress in presentations about pulp regeneration and the application of CBCT systems in endodontic treatment.

_There appears to be some kind of competition between endodontics and implantology. Do you think there is some rivalry between these two specialist disciplines?

I think it is wrong to talk about rivalry between the two areas of dentistry. Each case must be examined very carefully. The main priority of each dentist should be to try to conserve the tooth, by utilising other treatment areas. This includes the periodontal and restorative techniques of dentistry, which the treating dentist should take into consideration and fully exploit. When there is no possibility of conserving the tooth, there is also no objection to providing a dental restoration with a crown on an implant. An implant should therefore not be used solely because it is the cheaper option for the patient or because it is easier for the dentist to place an implant. Far too many teeth are extracted nowadays because of inadequate endodontic skills and knowledge. Nowadays, we know that there is virtually no difference between the long-term success rates of RCTs and implants. There is of course no golden rule for when RCT should be carried out and when the time is right for an implant. However, the American Association of Endodontics issues very clear statements on the subject: the endodontic treatment of a hopeless tooth is just as unethical as the extraction and replacement of a restorable tooth with an implant.

_Where is the "art" in root-canal treatment? In other words, what are the challenges and what determines the degree of difficulty?

According to Dr Herbert Schilder, the aim of endodontic treatment is always the complete removal of bacteria from the root-canal system. This allows apical periodontitis to be controlled, and prevents its occurrence following treatment. In fact, this aim is relatively easy to achieve: dentists must complete all treatment steps carefully—beginning with correct isolation of the treatment site using a rubber dam to the permanent restoration of the tooth. Treatment of a single-rooted, straight tooth is much easier than treatment of a molar with four severely curved root canals. Nevertheless, we now have instruments and techniques available that enable reliable treatment of all teeth.

_You have had the opportunity to try out the Soaric endodontic treatment unit from Morita. How does the workstation support dentists during treatment?

I had the opportunity at the IDS in Cologne and the congress in Rome to test Soaric and to work on a phantom head. I really appreciate the integrated endodontic system of the treatment unit. Soaric is fitted with an endo motor with integrated apex locator, making it easier to use the rotary instruments. I think that Soaric is fantastically well suited for endodontic treatment. The attachment for direct connection of a surgical microscope indicates that Soaric was entirely developed for endodontic experts.

_In general, do you personally perform treatment alone (two-handed treatment) or rather with an assistant (four-handed treatment)?

I always work using four-handed treatment with an assistant. I am often also supported by a colleague during surgical procedures. However, I am convinced that Soaric also provides an excellent opportunity to treat alone. The instruments are arranged pretty well, so they enable the dentist to perform an intuitive treatment procedure.

_In your opinion, what makes Morita one of the leading suppliers of units and instruments for root-canal treatment?

The name Morita is familiar to every endodontic specialist, not least because of the electronic apex locators (Root ZX, J. Morita). The company is one of the leading manufacturers of integrated endodontics. Integrated systems in particular, such as the DentaPort or the old TriAuto ZX (the first endodontic handpiece with an integrated apex locator) or the new TriAuto mini, provide the user with enormous support during root-canal preparation.

_Which instrument is indispensible for an endodontist?

We require all instruments and equipment that enable us to perform good treatment. In my opinion, a surgical microscope, apex locator and an appropriate endodontic handpiece are the minimal requirements for providing good treatment. I personally believe that an electronic apex locator is indispensible. The root canal can be prepared conventionally using files and sealed with gutta-percha heated over a flame. What we really must establish during root-canal preparation, however, is the exact working length!

_Which is the most important instrument for root-canal preparation? How many files do you require as a rule?

We have developed a technique—the hybrid concept—which allows us to prepare a root canal using only three instruments. For preparation, we require the TriAuto mini, but not in automatic mode. We reach the apex simply by using a 10 K-file, to create a glide path. In this way, we reduce the likelihood of the rotary instruments fracturing. The second instrument is then used: the 35.08 EndoWave rotary file is used to enlarge the access of the crown and middle third to the root canal. The working length is determined using the apex locator. We reach the apex using the 20.06 EndoWave file and can completely prepare the root canal using this file. In accordance with the principle of estimating the apical extension, we widen the canal with the rotary instruments and use the attachment with the largest diameter. We use the TriAuto mini in automatic mode in the case of canals with severe curvatures. With this technique, we reduce the risk of damage to the tooth structure outside the canal. We then reach the apex automatically using the smallest rotary instrument in the world, the MGP 1 (a rotary NiTi file with a conicity of 0.02 mm and a #10 tip diameter).

Then follows MGP 2 and MGP 3 (also with a conicity of 0.02 mm and #15 and 20 diameters). The DentaPort or the TriAuto mini in combination with the Root ZX mini can be used in the automatic mode. In this mode, rotation starts as soon as the file tip is inserted into the canal opening. Once the apex has been reached, the unit is simply removed by rotating the files in a counter-clockwise direction. Using a glide path of 20.02, the 35.08 EndoWave file can prepare the crown and middle third of the root canal, even with severe curvatures. The apex is then reached and prepared using the 20.04 EndoWave file and finally preparation is completed using the 20.06 EndoWave file.

_What makes a good file?

The ideal instruments should be reliable. It is particularly important that the files are fracture resistant and can be used several times.

_What advice would you give to young colleagues for their career path when they start in endodontics?

I would strongly advise young colleagues, when starting their endodontic career, to observe the endodontic treatment protocols and guidelines and use high-quality instruments. We use certain instruments and units for a very long time in our professional life, particularly because they are of good quality. For example, I have been working with my first Root ZX since 1993, which is still in good working order. I use it together with some newer apex locators from Morita._

Editorial note: A video demonstrating Morita's hybrid concept is available on www.dental-tribune.com/articles/content/id/6828 or simply scan the QR code with you smartphone.

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