At the apex of care

Endodontist **Trevor Lamb*** on the important role of the dental hygienist.

The two dental specialities which interact most closely are endodontics and periodontics. There are two types of periodontitis: coronal periodontitis caused by gum infections and apical periodontitis caused by root canal infections. Every textbook mentions the perio-endo lesion, reflecting the dual component of a significant number of infections.

Endodontists and periodontists share a common aim – saving teeth – and that shared mission means that some patients are referred between us. At the apex of this relationship very often is you, the dental hygienist. You are at the frontline of periodontal care and, through your dedicated scaling and hygiene instruction, you help patients save their teeth.

With the launch of the Saving Teeth Awareness Campaign (www.savingteeth.co.uk) earlier this year, supported by myself and my colleague Julian Webber, among others, I have thought in depth on the subject. I have thought that those patients in practices which give free rein to their dental hygienists to undertake thorough cleaning are fortunate indeed.

Trevor Lamb

** Trevor Lamb is an endodontist with over 24 years' experience in the specialty of endodontics. He received his BDS in 1982 from The University of the Witwatersrand and his postgraduate endodontic training from The Medical University of Southern Africa.*

An endodontically compromised tooth can be saved by a hygienist and sometimes, especially in larger practices, you are also in the frontline of diagnosis. What you need to look out for is the presence of: previous pulpotomies, pulp capping, large restorations approximating the pulp, deep carious lesions, considerable diminution in the pulp canal space. All these are strong evidences for a potential endodontic problem.

The dentist or specialist will confirm the diagnosis with pulp vitality testing. This employs cold and hot stimuli and, if there is any doubt to the condition of the pulp, electric pulp testing. This should always be followed up with a good quality paralleling technique peri-apical radiograph.

So what happens when your patient is referred to a specialist? The root canal procedure involves the removal of infected or dead pulp (nerve) tissue by shaping and sterilising of the canals and finally the sealing the canals. Treatment time for a three rooted molar normally takes about two hours. In re-treating a previously root canal treated tooth the challenges faced are more demanding. Notwithstanding the difficulty faced in removing the old root canal filling material, the bacteria that have remained in the canals for a long period of time have sometimes become more resistant to our standard sterilising techniques.

Following a painless local anaesthetic, the tooth is isolated with a rubber dam. This serves not only to prevent the ingress of salivary bacteria into the root canal system, but it is an important safety measure. During the treatment I use an operating microscope which magnifies the tooth so that I can see down into the root canal system and view in minute detail all anatomy and treat the tooth with precision. There is a variety of specialised root canal shaping instruments that I have at my disposal. There is no instrumentation system that can fully address all situations and each tooth has to be individually assessed.

The accurate shaping of the root canals is an important aspect of the therapy as it allows the cleaning agent, sodium hypochlorite, to penetrate the furthest end of the canal and thoroughly sterilise it, thereby killing the bacteria. Once I am satisfied that the canals are properly sterilised, the canals are filled with a filling material called gutta percha.

It's not unusual in dental practices for patients in pain to be given a course of antibiotics and told to return in a few days when the inflammation has reduced, but not at the Harley Street Centre for Endodontics. We usually treat the patient immediately. To my mind, it is best for the patient to start the root canal treatment as soon as possible because they avoid a course of antibiotics and there is immediate relief of pain. The sooner you remove the infected pulp, the faster healing can take place.

There are exceptions to this. If the infection is entrenched, I place calcium hydroxide, also known as slaked lime, in the tooth as an interim dressing. This is a natural antibiotic. It is so alkaline that the bacteria is de-natured and cannot survive in its presence. This step involves a second visit to complete the root canal treatment.

We are proud of our pain management regime and this is much appreciated by our patients. A throbbing tooth (one which has irreversible pulpitis with acute apical periodontitis) causes intolerable pain. Patients often ring or write after their treatment to express their gratitude because their pain was taken away immediately.

There is no doubt in my mind that a natural tooth is the ultimate biological structure. If a pulp of a tooth is infected, the first choice should be a root canal treatment, followed by a definitive coronal restoration.

At The Harley Street Centre for Endodontics we monitor our patients for healing after performing a root canal treatment. This is routinely done after a year and if necessary we will monitor patients indefinitely until we are happy that the root canal infection has healed.

We stay in touch with the referring practice and keep them informed. The multi-disciplinary teamwork makes the work additionally rewarding. These days, the dental hygienist makes a valuable contribution to this teamwork. The dentist or the relevant specialist in endodontics or periodontics will always assume the responsibility for the treatment of the tooth, but the dental hygienist will always form part of the early warning system for the patient.