Numbing the pain

Dr Michael Sultan looks at how treating inflamed teeth with intra-osseous anaesthesia can help relax a nervous patient

One of the most challenging tasks in endodontics is successfully treating a patient who is anxious and has been in pain from a severe pulpitis. But the key to making sure it goes smoothly is a fantastic anaesthesia.

When faced with “Hot Pulps” (usually mandibular molars that have caused severe pain and seem impossible to anaesthetise), the normal injection of choice is the inferior dental block. The cortical plate of the posterior mandible is quite thick and the easier infiltration injections are rarely found successful in this situation.

A practice lifesaver

The intra-osseous injection is more often than not the lifesaver in the practice. We often get patients referred in due to anaesthetic failure and this injection technique has prevented procedures from being abandoned.

The intra-osseous injection is where the buccal mucosa adjacent to the tooth is anaesthetised and a perforator is used to drill through the cortical plate into the cancellous bone, allowing direct placement of the anaesthetic into the bone. Success rate of this injection, if coupled with an inferior dental block, is high at approximately 80 per cent and rises to 98 per cent for repeat LA.

Intra-osseous injections can be used as a stand-alone procedure and as an alternative to local infiltrations. When used as a stand-alone injection, a study has shown that in the upper incisor region, intra-osseous injections had a quicker onset, but shorter duration than an infiltration injection. It has been suggested that the advantages of injecting into the upper incisor is to obtain single-tooth anaesthesia and avoid uncomfortable labial or lingual numbness. But generally for the hot pulps, it is recommended that the intra-osseous injection can be used as a supplementary injection.

To make sure you find the optimal injection site for anaesthesia, ideally it should be distal to the tooth; although with mandibular second molars, it should be mesial. Ideally, the injection should be through the attached gingiva to allow injection through a minimal thickness of cortical bone. This should be perpendicular to the gingiva and between two-four mm apical to crestal bone. Placement may need to be varied according to proximity of adjacent teeth so that roots are not damaged.

In addition, if there is deep pocketing, the injection needs to be more apical and may be in the alveolar mucosa. This would not present a problem with the