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From The Journals

Fracture Strength Of Tooth Roots Following Canal Preparation By Hand And Rotary Instrumentation

Lam PPS, Palamara JEA, Messer HH. J Endod 2005; 31:529–32.

The aim of this *in vitro* study was to compare fracture strength of tooth roots following canal preparation using different instrumentation techniques. Mesio-buccal roots of 39 extracted human mandibular molars were chosen, which were randomly allocated into three groups (n = 13). In Group 1, the root canals were instrumented by stainless steel hand files (K-files) for conventional step-back preparation; in Group 2, rotary NiTi Lightspeed instruments were used for canal preparation of greater apical enlargement; and in Group 3, rotary NiTi Greater Taper files were used for canal preparation of increased canal taper. All root canals were subsequently obturated to the mid-root region and a vertical load was applied by inserting a spreader into the canal until fracture. The mean fracture load for hand instruments was 10.2 ± 4.4 kg, 15.7 ± 9.1 kg for Lightspeed and 13.2 ± 6.1 kg for Greater Taper; however, the differences were not statistically significant. The authors concluded that greater apical enlargement and increased canal taper did not increase fracture susceptibility of roots any more than conventional step-back preparations.

A Comparison Of Articaine And Lidocaine For Inferior Alveolar Nerve Blocks

Mikesell P, Nusstein J, Reader A, Beck M, Weaver J. J Endod 2005; 31:265–70.

This prospective, randomised, double-blinded study aimed to compare the degree of pulpal anaesthesia following inferior alveolar (IAN) blocks using 4% articaine with 1:100,000 epinephrine or 2% lidocaine with 1:100,000 epinephrine. In addition, solution deposition pain and post-injection pain of the two solutions were evaluated using a Heft-Parker visual analogue scale. Using a cross-over design, 57 healthy subjects randomly received an IAN block injection with either an articaine or lidocaine solution, at two separate appointments at least one week apart. An electrical pulp tester was used to test for anaesthesia, in 4-min cycles for 60 min, from the second molar to the central incisor. Anaesthesia was considered successful when two consecutive maximum output readings were obtained within 15 min and the reading was continuously sustained for 60 min. Anaesthetic failure was found in 7 to 72% of subjects administered with the articaine solution, and 9 to 75% with the lidocaine solution; however, the differences were not statistically significant. There was no significant difference between the two anaesthetics for the solution deposition pain ratings and post-injection pain on the day of the injection and first post-injection day. The authors concluded that the pulp anaesthetic effect of 4% articaine with 1:100,000 epinephrine was similar to 2% lidocaine with 1:100,000 epinephrine for inferior alveolar nerve blocks.