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ENDODONTIC CENTRE

SEVENTH HEAVEN?

FEB 2014

This newsletter highlights a challenging 27 with irreversible pulpitis and symptomatic apical periodontitis. The MB cusp is at high risk of fracture; light will not pass through a fracture in enamel/dentine. The fractures are likely restricted to the clinical crown as there were no probing defects, mobility, or vertical bone defects (on the radiographs). Nevertheless, the entire occlusal amalgam was removed to confirm the fractures were restricted to the clinical crown. To prevent fracture propagation, the cusps were reduced to eliminate contact in lateral excursion and vertical occlusion. The illumination and magnification of the microscope allowed a thorough exploration of the extent of the fractures and location of the four orifices.

Although less frequent than in maxillary first molars recent SEM and light microscopy studies report a 38% frequency of MB2 canals in upper sevens. Generally, the roots of second molars are less curved than those of first molars. Not only did this 27 have an MB2 canal, its buccal roots were highly curved. Using the balanced force technique, initial exploration was with a short 15/02 hand file. Short hand files provide more accurate tactile feedback and efficient instrumentation. Attaining patency early in such challenging canals can lead to instrument fracture, débris accumulation with canal blockage, ledges, and transportation. Instead, the instrumentation of each canal is divided into three sections –coronal, apical, and then middle. Initial flaring of the coronal third allows exploration of the apical regions without contact between the file and coronal walls (= less stress).

Light pressure balanced force with a combination of short, medium, and long hand files (06/02 to 15/02) was necessary to gain patency on these canals. Successive small hand files are used at length until a 10/02 file feels loose at working length (WL). Once a WL glide path is established a combination of NiTi hand files with 02 and 04 rotary files will complete the apical and then middle sections of the canal. Thermal treated 04 rotary NiTi files offer greater flexibility and safety when instrumenting curved canals. To prevent taper lock and other mishaps only a small surface area of any rotary file should be accumulating dentine débris.

Although unorthodox, this regimen allowed safe negotiation of the extreme mid-root curve of the MB canals and the sharp apical curve of the DB canal. The palatal canal was highly calcified and it took time to get to length and then enlarge it to an acceptable master apical file. Negotiating curved canals is not unlike skiing a double black diamond run; it takes the right equipment and precise technique to get to the bottom in one piece!

Regards,

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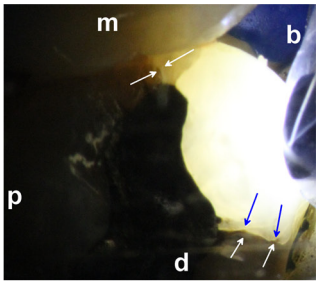

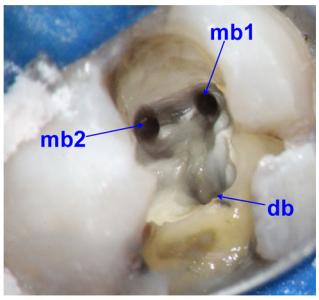

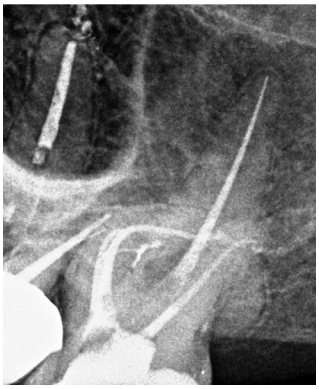

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Extended hours are also available

The Richmond Endodontic Centre Boardroom is open; it is available for meetings, lectures, and study clubs. Please come by and have a look at our new presentation centre!

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