RICHMOND
ENDODONTIC CENTRE

MB2 ENVY

JUL 2014

Dental textbooks and contemporary literature are replete with information addressing the complex anatomy of maxillary molars. Dentists and endodontist operate with the mantra of 'expect to detect' the MB2 and are aware it is often the toughest canal to negotiate. What of the anatomical challenges of mandibular molars? We know to centre the access preparation over the mesial and distal roots so as to avoid a furcal accident and prevent strip perforations by not over-instrumenting. The two cases below demonstrate the anatomy of mandibular molars is special too.

The distal root of the mandibular molar can have one or two canals. Often the single canal is extremely thin in the mesial-distal direction and wide buccal-lingually. This ribbon shaped configuration is best treated as two individual canals; over-preparation of the middle portion will leave copious amounts soft tissue remnants and runs the risk of a strip perforation. Occasionally the distal canal can split into two unique canals in the apical third. I recently treated such a case; the patient had persistent tenderness to percussion despite endodontic treatment. Resolution of the symptoms was achieved by locating and treating the two distinct canals at the bottom of the root. Countless bite adjustments, extraction, or endodontic microsurgery were all avoided by recognising and addressing the anatomical complexity via orthograde endodontic treatment.

The next two radiographs are of a recent case where I found a mid-mesial canal in a 72 year-old gentleman (necrotic pulp with symptomatic apical periodontitis). Depending on age, gender, and ethnicity mid-mesial canals can have a prevalence of up to 17%. Locating the mid-mesial canal requires troughing up to 2mm below the chamber floor to reveal the subpulpal groove (aka isthmus) that runs between the ML and MB orifices. Typically the mid-mesial canal is in the mid-line or closer to the ML orifice. Studies show that without magnification incidence of finding this canal is almost zero; the use of loops (4.5X) significantly increases the incidence of locating it. Better still, the literature has found that use of a microscope not only further improves the ability to locate the mid-mesial canal but also increases the rate of successful instrumentation of it.

The maxillary molars command a lot of attention and that is fine as long as the complexities of mandibular molars are not ignored. This message has been brought to you by your mandibular molar loving local endodontist and I encourage everyone to embrace mandibular molar anatomical complexity.

Regards,

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Certified Specialist in Endodontics

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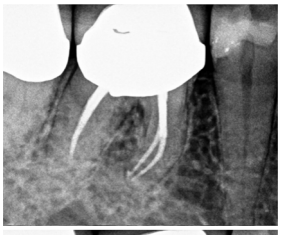
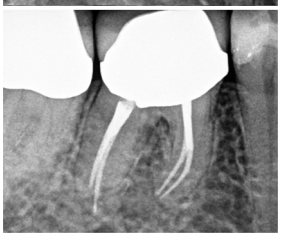


PRE-OP D



POST-OP D

PRE-OP M

POST-OP M

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