

Complex root canal anatomy in the MB root of maxillary first molars

The maxillary first molar is the tooth that most frequently ends up needing endodontic retreatment. Majority of the initial endodontic treatment failures originated from the untreated MB₂ canals. The MB root of a maxillary first molar is usually broad in the buccal-palatal dimension and narrow in the mesial-distal dimension. It looks like a sail. This sail-like root shape is often not fully revealable on conventional PA radiographs, but becomes apparently appreciable on the CBCT sections. There is often a fin-like narrow root canal space in between the MB and the MB₂ canals. This fin-like space can sometimes be negotiated as an independent canal with its own point-of-negotiation (POE) and its own point-of-exist (POE). The MB₂ canal sometimes is located quite palatally away from the main MB canal and can be very hard to find, this usually coincides with a broader MB root in the buccal-palatal dimension with more chance of fin-like space in between the MB and MB₂ canals.

Case 1 is an example of a retreatment case with a broad MB root anatomy, which can be well appreciated on the serial horizontal CBCT sections. **Case 2** is a bench exercise I did a few years ago on an extracted maxillary first molar. I was surprised to see how complex the MB root canal anatomy was on this tooth.

Sincerely Yours,

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