

> MOVING TARGET

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Contemporary anatomical research supports a shift from assuming a fourth canal is unique in maxillary first molars to considering its absence idiosyncratic. We are now, more than ever, obliged to find it. Does it even give us a sporting chance? Not really, more than any other orifice the MB2 is a moving target. In teeth with minimal secondary or tertiary dentine the orifice is almost directly palatal to the MB1. As secondary and tertiary dentine is formed the coronal extent of the orifice often shifts distally. Not only is the MB2 most often the smallest orifice but its position is the least reliable to boot.

The images above are of a case recently completed as part of a live demonstration I did in my Tuesday Night Study Club - Let's Kill Pulp. None of the pre-op PA's (A) were suggestive of an MB2. As per my typical modus operandi I initially troughed straight towards the palate from the MB orifice (parallel to the mesial marginal ridge) with a skinny, long-shank, high-speed diamond crown-prep bur. I eventually stopped shaving the dentine for fear of causing a perforation. I had removed a lot of secondary and tertiary dentine (disorganised/rough appearance) and exposed primary dentine (smooth and dark on the floor) with a distinct lack of clues, such as white dentinal dust in a minor remnant of an isthmus or orifice. Not quite ready to give up on finding an MB2, I used red and white Muncie burs to lightly remove secondary and tertiary dentine from the chamber floor. The MB2 orifice was then discovered in a pronounced distal position (B); it was almost directly buccal to the palatal orifice. As more of the orifice was uncovered it shifted quickly in a mesial direction (C).

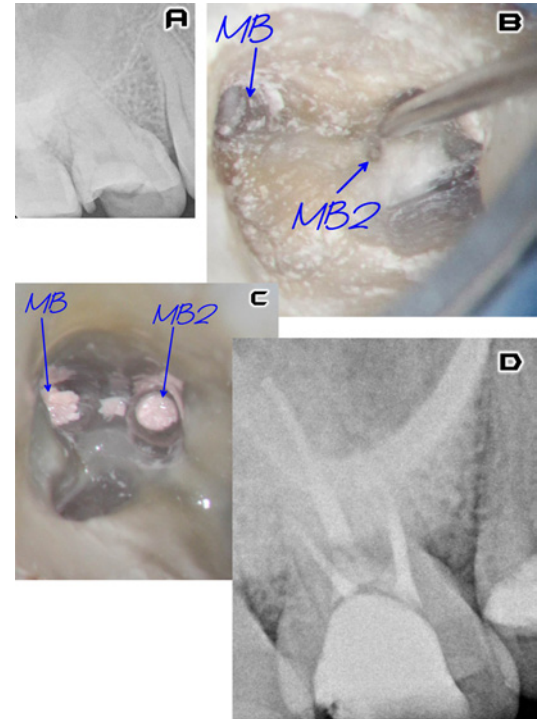
Fin-de-siècle textbooks deemed the MB2 orifice was on an imagined line running between the MB and palatal orifices. Contemporary anatomical studies suggest this line will direct one in too distal of a direction for orifice location at the chamber floor level. With this in mind, modern access preparations run parallel to the mesial marginal ridge from the MB orifice for several millimetres before turning distally towards the palatal orifice. The traditional position of the MB2 orifice can be likened to the position in a tooth with significant secondary and tertiary dentine present (i.e. calcified chamber). Whereas the au courant position of the MB2 is the original location at the chamber floor level prior to the coronal disruption by secondary and tertiary dentine.

I recommend starting with troughing from the MB orifice and looking for clues of an isthmus extending from the MB1 or actual orifice palatal to the MB1. Do not shave too much smooth dark dentine away as this is primary dentine which never covers an orifice. If no progress is made, switch to sweeping away secondary and tertiary dentine coronal to the true chamber floor (smooth dark primary dentine). Both methods, in moderation, will complement each other and increase your chance of finding more MB2's more often. Of course, all of the aforementioned relies upon superior illumination and magnification. More so than any other orifice the MB2 is a moving target. With a systematic approach and practice we reduce the deep seated choler associated with attempts to discovering the elusive MB2.

Regards,



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