

# Prevalence of Middle Mesial Canals in Mandibular Molars after Guided Troughing under High Magnification: An In Vivo Investigation

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Year: 2015

Journal: JOE

## Aim

- Record the incidence of middle mesial (MM) canal in MAN molars before & after troughing by using a standardized troughing approach.
- Characterize the pathway of the middle mesial canal
- Determine whether a correlation exists between the prevalence of a MM canal & patient's age.

## Materials & Methods

- 91 teeth (87 patients) referred for RCT on their MAN molars were included in this study.
- All procedures were performed by one clinician using a surgical operating microscope.
- The procedures followed the following protocol:
  1. Anesthesia + Rubber dam isolation
  2. Access preparation and identification of all accessible canals.
  3. Orifice enlargement of the MB & ML canal
  4. Troughing between the MB & ML canal using the Munce discovery burs (size 2) within a 2mm depth
  5. Searching for an accessible MM canal
- If a canal was located, its pathway was recorded and was classified as either:
  - a) **Independent** (separate orifice and separate apical foramen)
  - b) **Confluent** (separate orifice and joining with the MB/ML)
  - c) **Fin** (connecting with one or both of the main canal)
- Statistical analysis was performed to determine the effect of troughing on locating the MM canal and its correlation to patient's age.

## Results

- A middle mesial canal was found in 46.2% of the treated cases.
- A MM canal was located in 6.6% of the cases following conventional access preparation
- Following standardized troughing, the incidence increased to 39.6%.
- There was a higher tendency to locate the MM canal in 2<sup>nd</sup> (60%) vs. 1<sup>st</sup> molar (37.5%). Results however were statistically insignificant.
- Younger patients had a significantly higher incidence of accessible MM canals (P = .004).

## Conclusion

- MM canal can be accessible more often than previously reported.
- High magnification, troughing, and patient's age appeared to be determining factors in accessing the MM canal.

## Authors

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Reference: Azim AA, Deutsch AS, Solomon CS. Prevalence of Middle Mesial Canals in Mandibular Molars after Guided Troughing under High Magnification: An In Vivo Investigation. J Endod. 2015 Feb;41(2):164-8.