



Letter to the Editor, “Apical Transportation of Mesio Buccal Canals of Maxillary Molars Following Root Canal Preparation with Two Rotary Systems and Hand Files: A Cone-Beam Computed Tomographic Assessment”

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Dear Editor,

We read with great interest the article by Sarraf et al [1], which follows the great goal of evaluating the efficacy of rotary files. This study used HyFlex CM and Edge Taper Platinum rotary systems and stainless-steel hand files for root canal preparation of the mesio buccal canal of maxillary molars and compared apical transportation among these systems. However, there are some misleading sentences that need further clarification.

Standardization of study groups is extremely important and can affect the quality, unification and reutilization of data. To access canals, the authors have applied two methods: crowns were cut “if needed” in some samples, which exposed the canals; while access cavity was prepared routinely in others. According to Eaton et al. [2], different access preparations can lead the operator to encounter different root canal curvatures in a single sample, resulting in decreased quality of group standardization.

Lubrication is important in using both rotary and hand K-files, either performing a glide path or finishing the cleaning and shaping of a canal, especially in curved roots [3]. There is no indication to apply the lubricant agent while performing canal scouting using K-files.

Based on EdgeEndo manufacturer’s instructions the EdgeTaper Platinum should be used in a crown-down technique for curved canals aiming to prepare the coronal two-thirds at the first step and subsequently cleaning and shaping the apical third. This is followed by application of Ethylenediaminetetraacetic acid solution or gel. However, Sarraf et al [1] used a single-length technique for canal preparation, which did not comply with the manufacturer’s instructions for proper use.

The authors mentioned that minimum transportation occurred three millimeters from the apex,

due to a straight pathway of the canal [1], which does not seem logical. Curvature mainly starts from the mid-portion of a maxillary molar's mesiobuccal root (Figure 1) and the smaller part of the file has more tendency to retain its primary form which causes more transportation. They also reported HyFlex CM to cause 310 and 380 μ m transportation at zero and six millimeters from the apex, respectively and indicated that K-files exhibited insufficiency at nine millimeters by making 660 μ m transportation.

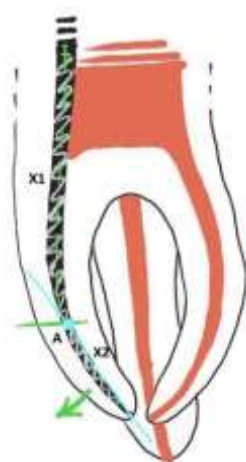


Fig. 1. Point 'A' shows the curvature beginning. The outer-furcal part of the apical region concedes more dentin removal and is more susceptible to transportation due to the tendency of X2 to retain its main straight form.

No further discussion was presented. According to Junaid et al. [4], apical transportation of more than 300 micrometers negatively impacts apical sealing.

Shenoi et al. [5] did a comparative study on HyFlex CM via CBCT. They presented the mean values of 60, 70, and 90 μ m transportation in three, six, and nine millimeters from the apex of curved mandibular mesiobuccal canals, respectively. It would have been better if the authors [1] had compared their results with similar studies, and explained the differences and expressed their reasons.

Wide usage of root canal preparation instruments in endodontics, highlights the importance of the results of this paper. Therefore, it is suggested that the unclear points encountered in the article be elucidated in comparison to similar published studies.

CONFLICT OF INTEREST STATEMENT

None declared.

REFERENCES

1. Sarraf P, Kiomarsi N, Taheri FH, Moghaddamzade B, Dibaji F, Kharazifard MJ. Apical Transportation of Mesio Buccal Canals of Maxillary Molars Following Root Canal Preparation with Two Rotary Systems and Hand Files: A Cone-Beam Computed Tomographic Assessment. *Front Dent.* 2019 Jul-Aug;16(4):272-278.
2. Eaton JA, Clement DJ, Lloyd A, Marchesan MA. Micro-Computed Tomographic Evaluation of the Influence of Root Canal System Landmarks on Access Outline Forms and Canal Curvatures in Mandibular Molars. *J Endod.* 2015 Nov;41(11):1888-91.
3. Chandler N, Chellappa D. Lubrication during root canal treatment. *Aust Endod J.* 2019 Apr;45(1):106-110.
4. Junaid A, Freire LG, da Silveira Bueno CE, Mello I, Cunha RS. Influence of single-file endodontics on apical transportation in curved root canals: an ex vivo micro-computed tomographic study. *J Endod.* 2014 May;40(5):717-20.
5. Shenoi PR, Luniya DA, Badole GP, Makade CS, Kubde R, Khode RT. Comparative evaluation of shaping ability of V-Taper 2H, ProTaper Next, and HyFlex CM in curved canals using cone-beam computed tomography: An in vitro Study. *Indian J Dent Res.* 2017 Mar-Apr;28(2):181-186.