

An in vivo study to determine the effects of early preflaring on the working length in curved mesial canals of mandibular molars

¹ Azhar Iqbal, ² Iftikhar Akbar, ³ Prof. Mahmoud K. AL – Omiri

^{1&2} Assistant Professor, Department of Restorative Dentistry, Faculty of Dentistry, Aljouf University, Sakaka, KSA.

³ Senior Consultant & Professor, Faculty of Dentistry, University of Jordan, Amman, Jordan

Aljouf University, Sakaka, Saudi Arabia.

Corresponding Author:

Dr. Azhar Iqbal,

Department of Restorative Dentistry,

Faculty of Dentistry, Aljouf University,

P.O. Box 2014,

Sakaka, Aljouf,

KSA Email: dr_taimoori@yahoo.com

Tel: 00966538608217

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ABSTRACT

Aim:

To evaluate the effects of preflaring method on the determination of working length in the curved mesial canals of mandibular molars.

Materials and Methods: Ninety mandibular molars with apical curvature of 30 to 40 degrees were selected and randomly divided into two groups; each containing 45 teeth. In the first group, the initial instrumentation was performed with preflaring on the mesiobuccal canal (preflared group), and in the second group; the instrumentation was performed without preflaring on the mesiobuccal canal (nonpreflared group). A size 15 K file was inserted in the mesiobuccal canals until the apical constriction could be felt by tactile sensation and a radiograph was taken to identify the distance between the file tip and radiographic apex. The location of the tip was classified as a) within 1 mm of the radiographic apex, b) more than 1 mm of the radiographic apex, or c) overextended beyond the radiographic apex. The collected data was statistically analyzed and probability value was set to be ≤ 0.05 .

Results:

The file tip was significantly closer to the true working length in the canals with early preflaring compared to the canals without early preflaring ($p < 0.005$). In the preflared group; 75.5 % of the cases had the file tip in location a, 13.3 % in location b, and 11.1 % in location c. In the nonpreflared group; 33.3 % the file tip in location a, 53.3 % in location b, and 13.3 % in location c.

Conclusions:

Preflaring the coronal portion of curved canals greatly improved the access to the apical constriction, and thus enhanced correct working length determination. If the coronal portion of the curved canals is not preflared and left constricted, the clinician cannot discern the accuracy of what they feel apically. Thus, preflaring is a highly recommended procedure especially in curved canals for better determination of correct working length.

Key Words: Working length, Curved canals, Preflaring, Mesiobuccal canal.

