Effect of Preflaring on Tactile Detection of the Apical Constriction

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Aim
- To compare the efficacy of "feeling" the apical constriction in flared and non-flared root canals by tactile sensation.

Materials & Methods
- 120 root canals of adult patients were included in this study.
  
  Exclusion criteria
  a- Complicated anatomy  
b- External root resorption  
c- Severe root curvature
- Access was opened in the 68 root canals
  
  Group 1 (68 root canals)
  1) No flaring was performed  
  2) #15 or #20 K-file was used to detect or "feel" the apical constriction.
  
  Group 2 (52 root canals)
  1) Hedstrom files, GG drills & ultrasonic files were used to enlarge the canal orifices & flare the canal  
  2) #15 or #20 K-file was used to detect or "feel" the apical constriction
- Radiographs were taken & the distance between the tip of the file and the radiographic apex was measured and classified as:
  
  Category A: within 1mm of the radiographic apex  
  Category B: under-extended 1mm, or more, short of the radiographic apex;  
  Category C: over-extended beyond the radiographic apex. to test the effect of pre-flaring

Results
- In the non-flared canals 32.3% were classified in category A, as compared to 75% in the pre-flared counterparts.
- Over 26% of the canals in group 1 and 4% of the canals in group 2 were included in category B.
- Files inserted in pre-flared root canals had a significantly lower incidence of overextension than those placed in the non-flared canals (21% vs. 41%).
- There was a significant statistical difference between the 2 groups.

Conclusion
- Preflaring of the coronal portion of the root canal before length determination results in improved tactile sensation of the apical constriction.

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