Do the Sealer Solvents Used Affect Apically Extruded Debris in Retreatment?

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Aim
- To evaluate the weight of apically extruded debris in the retreatment of root canals filled with various root canal sealers and gutta-percha using 3 solvents (Resosolv, Endosolv E, Guttasolv).

Materials & Methods
- 90 freshly extracted human MAN central and lateral incisors were used in this study
- Teeth were cleaned & shaped up to size 25.08 and randomly filled with:
  - Groups 1, 2, 3: Epoxy resin-based sealer
  - Groups 4, 5, 6: ZOE sealer
- Teeth were then placed in vial system with apical portion suspended through rubber stopper, allowing for apically extruded material to be collected. Followed uniform procedure for time of solvent, replacement of solvent, irrigation, etc. under the following conditions:
  - **Group 1 and 4**: sealer specific solvents (Resosolv or Endosolv E)
  - **Group 2 and 5**: gutta percha solvent (Guttasolv)
  - **Group 3 and 6**: No solvent (control)
- The mean dry weight of extruded debris and the time required to complete the retreatment was calculated.
- Statistical analysis was performed to compare between the different groups.

Results
- Median weight of apically extruded debris in groups was least for sealer specific solvents (Groups 1, 4) and greatest for no solvent controls (Groups 3, 6)
- Median time values for retreat was least for sealer specific solvents, greatest for no solvent controls
- The type of the sealer did not affect the time or the amount of debris extruded in the no solvent or in the gutta percha solvent groups.

Conclusion
- Amount of apically extruded debris and duration of retreatment were reduced by use of solvent specific to the sealer, when compared to gutta-percha solvent or use of no solvent
- Use of gutta-percha solvent reduced amount of apically extruded debris and time taken compared to the use of no solvent.

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