STUDY SUMMARY

ROEKO GuttaFlow® 2

A comparison of apical sealing ability between GuttaFlow and AH Plus: An in vitro study

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STUDY AIM

Comparison of apical sealing ability of the silicone-based sealer GuttaFlow 2 (Coltene/Whaledent AG) with the epoxy-based endodontic sealer AH Plus (Dentsply Maillefer).

EXPERIMENTAL SET UP

- **Material**: eighty extracted human maxillary anterior teeth with fully formed apex and straight root.
- **Preparation**: cleaning and shaping in standard step back preparation technique up to master apical file size 60 at the established working length.
  Division of the teeth in 4 groups (n= 20):
  - Group 1: obturation with GuttaFlow and Guttapercha
  - Group 2: obturation with AH Plus and Guttapercha
  - Group 3: positive control, instrumented teeth left without obturation
  - Group 4: negative control, completely nail varnish coated teeth
- **Linear dye leakage method**: root surfaces were dried and except for the apical 2 mm of the root coated with nail varnish. Suspension of the samples in 1% methylene blue in a vertical direction to allow dye penetration by capillary action.
- **Evaluation of the dye penetration**: after washing, demineralization and clearing, samples were examined under stereomicroscope.
  Documentation of dye penetration scores and statistical analysis (statistical package for the Social Sciences software, Student’s unpaired t-test).

RESULT

Mean Microleakage (mm)

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<th>GuttaFlow 2</th>
<th>AH Plus</th>
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<td>Microleakage (mm)</td>
<td>1.37</td>
<td>1.41</td>
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CONCLUSION

Dye penetration was observed in all groups except for the negative control. Overall GuttaFlow 2 showed a lower dye penetration and microleakage and therefore a better sealing ability than AH Plus.