

Apeksna propusnost nakon četiri endodontska postupka instrumentacije i punjenja

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Svrha je bila ispitati apeksnu propusnost punjenih korijenskih kanala uporabom konstrukcije za prijenos tekućine, nakon dvije različite tehnike instrumentacije ("double flare" i "step-back") kombinirane s uporabom dvaju različitih materijala za punjenje (eukaperka i Roeko seal®).

U pokusu je rabljen uzorak od 40 trajnih jednokorijenskih zuba. Zubi su dekoronirani na razini caklinsko-cementnog spojišta, a zatim podijeljeni u četiri skupine od po 10 zuba. Korijenski kanali prve i druge skupine mehanički su obrađeni "double flare" tehnikom, a "step-back" tehnika primijenjena je u trećoj i četvrtoj skupini. kanali su tijekom instrumentacije ispirani 2,5% otopinom NaOCl. Obrađeni korijenski kanali prve i treće skupine punjeni su gutaperka kolčićima i eukaperka pastom tehnikom hladne alteralne kondenzacije, dok je u drugoj i četvrtoj skupini rabljen Roeko seal® umjesto eukaperke tijekom punjenja. Učinjenim endodontskim postupcima stvorene su četiri skupine: skupina DF/EF (double-flare / eukaperka) skupina DF/RS (double-flare / Roeko seal®) skupina, skupina SB/EP (step back/eukaperka) i skupina SB/RS (step back / Roeko seal®). Punjeni korijeni pohranjeni su u sterilnu fiziološku otopinu na 37°C u razdoblju od 7 dana nakon čega su postavljeni u konstrukciju za prijenos tekućine. Propusnost je mjerena pomakom zračnoga mjehurića u kapilarnoj cijevi spojenoj s apeksnim krajem napunjenoga zubnog korijena.

Razlika između skupine DF/EF (0,152 $\mu\text{L} \pm 0,12$), skupine DF/RS (0,186 $\mu\text{L} \pm 0,098$), skupine SB/EP (0,195 $\mu\text{L} \pm 0,12$), i skupine SB/RS (0,360 $\mu\text{L} \pm 0,230$) statistički je analizirana Sheffe (ANOVA) testom. statistički znatna razlika utvrđena je između skupine DF/EP i skupine SB/RS. Daljnjom statističkom rasčlambom s pomoću Mann-Whitney U testa utvrđeno je da različita tehnika instrumentacije utječe na rezultate rasčlambe.

U uvjetima pokusa, rezultati dobiveni primjenom konstrukcije za prijenos tekućine pokazuju da različiti materijali za punjenje korijenskih kanala ne utječu na apeksnu propusnost.

Apical Leakage after Four Endodontic Instrumentation and Filling Procedures

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The aim of this research was to examine apical obturation leakage of filled root canals by a fluid transport model after two different instrumentation techniques ("double flare" and "step-back") combined with use of two different sealers (eucapercha and Roeko seal®).

A sample of 40 permanent single-rooted teeth was used. The coronal part of each tooth was removed at the amelo-cement junction. Teeth were divided into four groups of 10 teeth each. Root-canals of the first and second group were cleaned and shaped by "double flare" technique while "step-back" technique was performed in the third and fourth group. All root-canals were irrigated with 2.5% NaOCl during instrumentation. Prepared root-canals of the first and third group were filled with gutta-percha points and eucapercha sealer by the cold lateral condensation technique while in the second and fourth group Roeko seal® was used as a sealer instead of eucapercha during filling procedure. Filled roots were stored in NaCl 3% at 37°C for 7 days. These procedures formed four groups: group DF/EO (double flare/eucapercha), group DF/RS (double flare/Roeko seal®, group SB/EP (step back/eucapercha) and group SB/RS (step back/Roeko seal®). Each root was mounted in a fluid transport model and leakage was measured by the movement of an air bubble in a capillary glass tube connected to the experimental root section.

The difference between group DF/EP (0,152 $\mu\text{L} \pm 0,12$), group DF/RS (0,186 $\mu\text{L} \pm 0,098$), group SB/EP (0,195 $\mu\text{L} \pm 0,12$), and group SB/RS (0,360 $\mu\text{L} \pm 0,230$) was statistically analyzed by Sheffe test. Statistically significant difference was determined between group DF/EO