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 μL ± 0,12), skupine DF/RS (0,186 μL ± 0,098), skupine SB/EP (0,195 μL ± 0,12), i skupine SB/RS (0,360 μL ± 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 raščlambe.

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 μL ± 0,12), group DF/RS (0,186 μL ± 0,098), group SB/EP (0,195 μL ± 0,12), and group SB/RS (0,360 μL ± 0,230) was statistically analyzed by Sheffe test. Statiatically significant difference was determined between group DF/EO

and group SB/RS. Further statistical anlysis peformed by Mann-Whitney U test showed that different instrumentation technique were responsable for the results of analysis.

Under the conditions of this research, results obtained with fluid transport model indicate that there is no statistically significant difference between groups where root-canals were filled with different materials. Apical leakage was signifuicantly lower where root-canals were instrumented by "double flare" technique.

Postupci liječenja Dens Invaginatusa

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Dens invaginatus je razvojna anomalija koja se očituje uvlačenjem cakline i dentina u unutrašnjost krune i korijena. Aberacija se može očitovati u širokome spektru morfoloških varijacija of foramen coecum do manjeg ili većeg uvlačenja u korijen, a ponekad sve do vrška korijena. Suvremenu podjelu anomalije ponudio je Oehlers godine 1957. Prema njoj postoje tri tipa abnormalnosti. Najčešće se otkriva radiografskim pregledom. Ako postoji komunikacija invaginacije s pulpom ili periradikularnim tkivom, vrlo će brzo nakon nicanja zuba nastati promjene u vitalnosti pulpe, njezine afekcije, nekroze i periapikalne patološke promjene koje zahtijevaju hitnu intervenciju. Liječenje ovisi o tipu anomalije i njezine komunikacije s pulpom i periapikalnim tkivom. Svrha rada bila je prikazati mogućnosti endodontskoga liječenja navedene anomalije. Dvadesetogodišnji pacijent javio se je u Zavod za dentalnu patologiju Stomatološkoga fakulteta u Zagrebu zbog bolova u području gornjega desnog središnjeg sjekutića. Kliničkim pregledom ustanovljena je palatinalna protuberancija i Y oblik palatinalne plohe zuba, te tri foramena. Radiološkom pretragom vidljiva je invaginacija klase III po Oehlersu s komunikacijom s periapeksom te s opsežnim periapeksnim procesom. Provelo se je endodontsko liječenje, a istodobno su proširena oba invaginacijska otvora i središnji prostor između njih. Distalni kanal imao je oblik C, a mezijalni je bio ovalan. Instrumentacija je provedena kombinirano: profile i step-back tehnikom.

Radna dužina korijenskoga kanala provjeravana je elektroničkim uređajem Endometer ES-03. Kanali su ispunjeni termoplastičnim postupkom i napravljena je kontrolna snimka nakon što je ispunjen endodontski prostor. Kruna je estetski rekonstruirana kompozitnom smolom. Kontrola je provedena nakon jedan, tri i šest mjeseci, te je opažena redukcija patološkog procesa bez kliničkih simptoma.

Dens Invaginatus - Treatment method

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Dens invaginatus is a developmental anomaly, manifested by insertion of enamel and dentin inside the crown and root. This aberration is revealed by the broad spectrum of morphological variations, from the foramen coecum to the smaller larger insertion in the root, sometimes extending to the very apex. Current anomaly classification, presented by Oehlers in 1957, divides the anomaly into three categories. It is usually detected by roentgen examination. If there is a communication between the invagination and the pulp or a periradicular tissue, soon after tooth eruption change occurs in the pulp vitality in the form of affectation, necrosis and periapical pathological transformation wich necessitates urgent dental intervention. The treatment depends on the type of anomaly and its communication with the pulp and the periapical tissue. The purpose of the study was to present endodontic treatment possibility for the stated anomaly. A 20 year-old patient contacted the Department of Restorative Dentistry at the University of Zagreb school of Dental Medicine complaining of pain in the area of the upper right central incisor. Clinical examination determined palatal protuberation and Y shape form of the palatal tooth surface including three foramens. Radiological examination showed class II invgination according to Oehlers with periapical communication and extensive periapical process. Endodontic treatment was performed simultaneously with enlargement of both invagination foramens as well as the central area inbetween. Distal root canal was C-shaped while the mesial was oval. Method of instrumentation was