

and group SB/RS. Further statistical analysis performed by Mann-Whitney U test showed that different instrumentation technique were responsible 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 significantly 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 periradikalarnim 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 which 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 invagination 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

combined Profile and "step-back" technique. Working length of the root canal was verified using electronic device Endometer ES-03. Root canals were filled using thermoplastic technique and the control X-rays was made after the endodontic treatment. Finally, the crown was esthetically reconstructed with composite resin. Follow through after one, three and six months revealed a reduction of the pathological process as well as disappearance of clinical symptoms.

## Estetska rekonstrukcija incizijskoga brida središnjih gornjih sjekutića

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Oštećeni incizijski bridovi središnjih gornjih sjekutića smatraju se značajnim i razmerno složenim problemom u restorativnoj stomatologiji zbog minimalnoga stupnja oštećenja, složenih estetskih zahtijeva te zbog osiguravanja dugotrajnosti provedene rekonstrukcije. Za opskrbu incizijskih defekata postoji niz tehnika. Među njima je najmanje invanzivna izravna tehnika kompozitnim smolama. Svrha rad bila je prikazati jednu od mogućnosti rekonstrukcije traumom oštećenog incizijskoga brida. Pacijent K.R., u dobi od 22 godine, imao je nakon udara tvrdim predmetom frakture cakline i dijela dentina na incizijskome bridu. Prijašnji restorativni zahvat nije bio odgovarajući pa se proveo nov postupak uporabom Artemis (Vivadent, Schaan, Liechtenstein) mikrohibridnoga kompozitnoga materijala s paletom estetskih nijansi za stimuliranje cakline, dentina i posebnih efekata. Opakne nijanse boja stimulirale su izgubljeni dentin, prozirne caklinske boje caklinu, a mamelonske i jasne transparentne boje posebne efekte. Rekonstrukcija je provedena u slojevitoj tehnici uz uporabu instrumenata za plasticiranje i odgovarajućih kistova uz polimerizaciju svakoga sloja posebno.

## Esthetic Reconstruction of the Incisal Edge of Upper Central Incisors

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Damaged incisal edges of the upper central incisors are considered to be an important as well as a relatively complex problem in restorative dentistry because the degree of damage is minimal yet esthetical demand provision of long-lasting reconstruction complex. There are several techniques for provision of incisal defects, the least invasive being direct technique with composite resins. The purpose of this study was to present one of the possibilities for reconstruction of trauma damaged incisal edge. A 22 year old patient after being strike by a hard object, sustained fractures of enamel and part of the dentin on the incisal edge. Previously performed restorative treatment was not satisfactory, so a new procedure was undertaken, using Artemis (Vivadent, Schaan, Liechtenstein) microhybrid composite material with a wide spectrum of shades for enamel and dentin simulation as well as special effects. Opaque shades of colours simulated lost dentin, transparent enamel shades enamel, and mammelon and clear transparent shades special effects. Reconstruction was performed in layer technique with the use of instruments for plasticizing including responding brushes and polymerization of each layer separately.

## Utjecaj pušenja na parodontalni status adolescenata

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Mnoga su istraživanja potvrdila da je pušenje jedan od najvažnijih čimbenika rizika za nastanak, progresiju i uspje-