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Ion release and enamel remineralizing potential of miswak, propolis and chitosan nano-particles based dental varnishes [Recurso electrónico] / Mariem O. Wassel, Dalia I. Sherief

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

Bibliografía: p. 10 : 27 refs.

Abstract: Purpose: Natural products can have an important role in caries control through their inherent biological abilities. Aim: The aim of the study was to compare the remineralizing potential of alcohol and freeze-dried aqueous miswak (*Salvadora persica*) extracts (M, MFD, respectively), propolis ethanolic extract (P) and chitosan-nanoparticles (Cs-NPs) based dental varnishes either without or with 5% NaF (MF, PF, CSF-NPs) to 5% NaF varnish in primary teeth enamel samples with artificial enamel lesions. Methods: F⁻, Ca⁺⁺, PO₄⁻⁻ ions release was assessed at 1,2,4 and 24 h. Surface microhardness, topography, and mineral content were assessed for primary teeth enamel before and after enamel lesion formation and after treatment and pH cycling using Knoop microhardness and SEM-EDX analysis. Results: F⁻ was significantly released with NaF and MF, MFD varnishes; Ca⁺⁺ and PO₄⁻⁻ were significantly released by Chitosan followed by miswak varnishes, while propolis varnishes released the least amount of ions. After treatment of enamel lesions and pH cycling, F⁻ was significantly recovered by NaF, MF, and CSF-NPs descendingly, while, Ca⁺⁺, PO₄⁻⁻ and surface microhardness were significantly gained by chitosan-nanoparticles and miswak varnishes. **Conclusión:** Chitosan-nanoparticles and miswak containing varnishes were most effective in remineralizing enamel lesions probably due to the release of F⁻, Ca⁺⁺, PO₄⁻⁻ ions compared to NaF varnish that released F⁻ only.

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1. Dental varnish 2. Ion release 3. Microhardness 4. Propolis miswak chitosan 5. SEM

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Investigation of the effects of the chromosomal regions of mouse chromosome 2 on susceptibility to dental caries using congenic strains [Recurso electrónico] / Chihiro Watanabe, Daisuke Orino, Kunihiko Shimizu

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

Bibliografía: p. 16 : 31 refs.

Abstract: Background: Dental caries is a widespread infectious disease caused by environmental and genetic factors. Thus far, studies have identified several environmental factors influencing dental caries; however, little remains known about the underlying genetic factors. Recent studies using mice have reported the major genes responsible for dental caries to be located on mouse chromosome 2. Using congenic mice, this study aimed to clarify if the chromosomal region on mouse chromosome 2 influenced dental caries. Materials and methods: We examined the dental caries scores obtained from caries induction, salivary secretion volume, and enamel hardness in the strains C57BL/6Slc, C3H/HeSlc, B6-Chr.2C3H, and three types of congenic mouse strains that we generated. Results: We successfully generated three types of congenic mouse strains. The caries scores of congenic mice, which had the C3H/HeSlc-derived interval between D2Mit126 (84 Mega base pair; Mbp) and D2Mit226 (163 Mbp), were significantly lower than that of any other mouse strain studied herein ($p < 0.05$). Moreover, the salivary secretion volume of the congenic mice described above tended to be more than that of any other congenic strain. However, enamel hardness was not significantly different among the strains. **Conclusión:** Several caries-resistant genes could be located between D2Mit126 and D2Mit226. Salivary secretion volume was one of the most important factors related to dental caries, and the genes influencing the rate of salivary secretion might be located in the same region.

Pediatric Dental Journal [Recurso electrónico]. -- 2019 (April), v. 29, n. 1, p. 11-16

1. Congenic mice 2. Dental caries susceptibility 3. Genetic factors

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Effects of root canal irrigations on intracanal medication with calcium hydroxide effects in root external resorption models [Recurso electrónico] / Akina Hisada, Koichi Nakamura, Yuki Toyota, Ayako Maeda, Toshihiro Yoshihara, Yasutaka Yawaka

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

Bibliografía: p. 21-22 : 31 refs.

Abstract: Objective: The objective of the present in vitro study was to evaluate the influence of endodontic irrigation systems on the removal of smear layer and ion diffusion of calcium hydroxide through dentinal tubules in root external resorption models. Materials and methods: Forty single-rooted teeth were divided into four groups (G1, G2, G3, and G4) according to the irrigation regimens: G1, saline solution; G2, 10% sodium hypochlorite with ultrasonic irrigation; G3, 14% EDTA with ultrasonic irrigation; G4, 14% EDTA with ultrasonic irrigation- 10% sodium hypochlorite with ultrasonic irrigation. Ultrasonic irrigation lasted 45 seconds and all the roots were irrigated with 2 mL of saline solution. In experiment 1, the samples were observed on the root canal wall using scanning electron microscope and the percentage of opened dentinal tubules (POD) was calculated. Experiment 2 evaluated the diffusion of calcium ions through dentinal tubules. Results: In the middle region of root canals, the mean POD values were 0.11, 5.02, 82.17 and 96.72 in G1, G2, G3, and G4, respectively. In the apical region of root canals, the mean POD values were 0.06, 0.43, 4.41, and 12.70 in G1, G2, G3, and G4, respectively. The diffusion of calcium ions in G4 was significantly high in all groups. **Conclusión:** This study demonstrated that a combination of EDTA and sodium hypochlorite with ultrasonic irrigation was most effective in removing the smear layer and ion diffusion from the root canal to the surrounding media.

Pediatric Dental Journal [Recurso electrónico]. -- 2019 (April), v. 29, n. 1, p. 17-22

1. Calcium hydroxide 2. Root canal irrigation 3. Smear layer 4. Ultrasonic irrigation

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Assessment of root dentin pH changes in primary and permanent molars with different types of calcium hydroxide intracanal medication [Recurso electrónico] / Wanaporn Nopnakeepongsa, Jeeraphat Jantararat, Rudee Surarit, Apiwan Smutkeeree

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

Bibliografía: p. 28-29 : 22 refs.

Abstract: Purpose: To evaluate root dentin pH changes using different calcium hydroxide medications in primary and permanent molar root canals. Methods: Sixty primary and 60 permanent molar roots were prepared with Twisted files and assigned in two subgroups: Group1, nonsetting calcium hydroxide (n = 30); group 2, viscous vehicle-based material (ApexCal®) (n = 30). The assigned materials were delivered in root canals and then stored for 24 h, 7 days and 14 days. All specimens were transversely cut in three sections and pH change was determined by Expandable Ion Analyzer cooperating with Flat Membrane pH Electrode and Reference Half-Cell Electrode at sample root surfaces. Two-way ANOVA was used for statistical analysis. Results: No significant difference was observed in primary teeth at all test periods. The mean pH values of the nonsetting calcium hydroxide group (pH10.39-10.90) were greater than those in viscous vehicle-based group (pH 9.84-10.12), but significant difference was observed only at 24 h. Among permanent teeth, the highest pH values of both materials were observed at 7 days. The pH values of the nonsetting calcium hydroxide group (pH 10.40-11.10) were greater than those in the viscous vehicle-based group (pH 9.80-10.41); however, no significant difference was observed at any test period. **Conclusión:** The peak pH of nonsetting calcium hydroxide group was at 24 h in primary teeth and 7 days in permanent teeth. The nonsetting calcium hydroxide group showed higher pH values than those in the viscous group in both primary and permanent teeth.

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1. Calcium hydroxide 2. Permanent teeth 3. Primary teeth 4. Pulpectomy 5. Root canal medicaments

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Fork injuries with the tines inserted bilaterally between the mandibular interdental spaces [Recurso electrónico] / Keisuke Kondo, Motohiro Kikuchi, Daisuke Nasu, Takahiro Kaneko, Norio Horie

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

Bibliografía: p. 36 : 9 refs.

Abstract: In this paper, we report two rare cases of foreign body oral injuries caused by forks inserted tightly into both sides of the lingual interdental spaces between the mandibular deciduous canines and first deciduous molars (FDMs). These pediatric cases of foreign body insertion caused not only soft tissue injuries but also the potential luxation of affected deciduous teeth, i.e., the FDMs in the present cases, during the removal of the object by force.

Pediatric Dental Journal [Recurso electrónico]. -- 2019 (April), v. 29, n. 1, p. 34-36

1. Deciduous first molar 2. Luxation 3. Oral injury

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Ameloblastic fibro-odontoma in mandibular molar region [Recurso electrónico] : a case report / Masatoshi Otsugu, Rena Okawa, Ryota Nomura, Kazuhiko Nakano

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

Bibliografía: p. 41 : 15 refs.

Abstract: We report a case of ameloblastic fibro-odontoma (AFO) in the mandibular molar region. A Japanese boy aged 6 years 8 months visited the Pediatric Dentistry Clinic of Osaka University Dental Hospital with dental caries as the chief complaint. Radiography revealed a well-defined homogenous mixed radiopaque mass like dentition above the crown of the mandibular left first molar. At the age of 6 years 9 months, enucleation of the tumor mass was performed under local anesthesia. Based on the histological findings, the diagnosis was AFO. Following enucleation, the left first molar showed a tendency for eruption.

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1. Ameloblastic fibro-odontoma 2. Mandible 3. Odontoma

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Marsupialization is the optimal treatment for odontogenic keratocyst in pediatric patients [Recurso electrónico] / Kyoko Harada, Sachiko Nagata, Aiko Shiraishi, Yukari Shinonaga, Tomio Iseki, Kenji Arita

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

Bibliografía: p. 46-47 : 18 refs.

Abstract: Odontogenic keratocyst (OKC) shows a high rate of recurrence, so aggressive treatment has been recommended. However, if the patient is a child and still has unerupted permanent teeth in the region of the OKC, aggressive treatment may not be the best option. We report herein a case of multiple OKCs in a pediatric patient treated using marsupialization five times and enucleation twice. Recurrence was not observed after surgical treatments in 7 years of follow-up. We suggest that treatment with marsupialization should be considered as the first-line treatment strategy for young patients with OKC.

Pediatric Dental Journal [Recurso electrónico]. -- 2019 (April), v. 29, n. 1, p. 42-47

1. Marsupialization 2. Odontogenic keratocyst (OKC) 3. Young patient

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Birooted primary canines identified in 8-year-old Japanese girl [Recurso electrónico] : case report / Kazuma Kokomoto, Rena Okawa, Shuhei Naka, Ryota Nomura, Kazuhiko Nakano

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

Bibliografía: p. 51 : 12 refs.

Abstract: This report presents a rare case of birooted bilateral maxillary primary canines. A Japanese girl aged 8 years 10 months was referred to the Pediatric Dentistry Clinic of Osaka University Dental Hospital by an orthodontic dentist to extract maxillary bilateral primary canines. The canines appeared to be birooted in panoramic radiography and were extracted under infiltration anesthesia. Both visual observation and computed tomography findings revealed that the birooted primary canine had 2 roots for each root canal. In spite of the rareness of this condition, it should be kept in mind because of potential problems in affected patients.

Pediatric Dental Journal [Recurso electrónico]. -- 2019 (April), v. 29, n. 1, p. 48-51

1. Birooted tooth 2. Computed tomography 3. Primary canine