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Influence of acid etching on internal bleaching with 16% carbamide peroxide

Ricardo Guerreiro, Inês Carpinteiro, Luís Proença, Mário Polido & Ana Azul

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radiolucent. They grow slowly and asymptomatic, unless there is a secondary infection, in this case they are associated with swelling and pain [2]. The dentigerous cyst of inflammatory origin is related with the inflammation present at the root apex of a non-vital primary tooth which spreads to involve the follicle of the unerupted immature permanent successor [3], as is in this case. Therapeutic modalities range from marsupialization and decompression to enucleation [2].

Materials and methods: Male, 8 years old, appeared in the emergency appointment with pain and continuous abscess in the region of the second lower left deciduous molar. Extraoral examination revealed facial asymmetry. Intraoral examination revealed mixed dentition and in the lower left vestibule a hard, non-fluctuant swelling extending laterally from mesial surface of the mandibular first deciduous molar to the distal surface of the mandibular second deciduous molar, both with carious lesions and grade II mobility. Orthopantomography, revealed a well-circumscribed unilocular radiolucent lesion in the body of the jaw on the left side, which was associated with the crown of a vertically impacted second premolar with its subsequent displacement. Based on clinical and radiological findings, a provisional diagnosis of dentigerous cyst was made. We obtained the informed consent authorised by the ethics committee signed by the minor parents and let me reinforce that all the clinical case was made accordingly with the Helsinki Declaration of Ethical Principals. Firstly we did the extraction of the first and second lower left deciduous molar under local anaesthesia (2% Lidocaine with 1:1,000,000 Epinephrine), along with cyst enucleation through the extraction socket, preserving the impacted second premolar. The surgical piece was sent to histopathological examination in a tube with formaldehyde 37%.

Results: Inflammatory dentigerous cysts was histopathological confirmed. Follow up period was 15 days, 1 month, 5 months and 10 months. After 15 days the patient referred substantial improvements on pain and the disappearing of the facial asymmetry as well as improvement on function, comfort and quality of life. It was then sent to Orthodontic treatment.

At the 10 months follow up, it was removed the lingual arch due the eruption of definitive teeth.

Discussion and conclusions: The dentigerous cysts are mostly found on routine radiographic examinations or by enlargement of affected region in the jaw with pain [3]. The pathogenesis of dentigerous cyst is still controversial but, one of the feasible proposed mechanisms is that the follicle of permanent successor might get secondarily infected from either periapical inflammation of a non-vital predecessor or other source leading to a dentigerous cyst formation [3]. Patient age, cyst size, site, involved dentition, and affected vital structures, are criteria which must be considered in the treatment modality, in this case we have a young patient and we opted for enucleation, without extraction of the impacted tooth [2]. This allow alleviation of cyst pressure to permit the retained teeth to erupt normally with root formation. Then the permanent tooth generally would erupt in the oral cavity naturally as this did. Sometimes orthodontic treatment is not needed. The patient should be followed until the complete eruption of permanent teeth in their designated location [3]. In the present clinic case the patience and indication for Ortodontic treatment for other reasons and now, presents the permanent teeth erupted.

CONTACT T. Nunes  taniavsn@gmail.com

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Influence of acid etching on internal bleaching with 16% carbamide peroxide

Ricardo Guerreiro^a, Inês Carpinteiro^a, Luís Proença^{a,b}, Mário Polido^{a,b} and Ana Azul^{a,b}

^aInstituto Universitário Egas Moniz (IUEM), Egas Moniz Cooperativa de Ensino Superior, Caparica, Portugal; ^bCentro de Investigação Interdisciplinar Egas Moniz (CiiEM), Egas Moniz Cooperativa de Ensino Superior, Caparica, Portugal

ABSTRACT

Introduction: Tooth bleaching has been an increasing demand [1] since tooth discolorations can have a negative impact on the social and psychological behaviour of patients. Internal bleaching (IB) can be used to treat teeth with endodontic treatment that are quite susceptible to pigmentation. The success of this technique depends on the ability to diffuse the active bleaching agent through pigments [2]. Thus, prior acid etching (PAE) of the pulp chamber has been proposed in order to remove the smear layer and to open the dentinal tubules, allowing a greater penetration of the bleaching agent

and consequent increase in the treatment efficacy [2,3]. This pilot study was aimed to evaluate the effect of PAE, with 37.5% orthophosphoric acid, on *Commission Internationale de l'Éclairage* (CIE) $L^*a^*b^*$ parameters after IB with 16% carbamide peroxide (CP), as a function of application time.

Materials and Methods: This study was approved by the Ethics Committee of Egas Moniz, CRL. Twenty sound molars were selected and randomly assigned to four experimental groups ($n = 5$, each): G1 – control group (without PAE or CP); G2 – 16% CP (without PAE); G3 – PAE for 15 s + 16% CP; G4 – PAE for 30 s + 16% CP. The initial colour was measured using a spectrophotometer and the correspondent CIE $L^*a^*b^*$ parameter values were obtained. Three sessions were performed every seven days. For the CG, a glycerine and carbopol placebo gel was applied. In the second and third sessions, for all groups the same procedures were performed except PAE step which was only applied in the first session of the respective groups. After 21 days, calcium hydroxide was placed on all teeth in order to neutralise the environment and standardise the experimental groups prior to restoration. The final colour was measured after 15 days, a restoration was performed with composite resin and the teeth were submitted to microtensile bond strength (μ TBS) evaluation. For each fractured stick, the failure mode was classified according to its location [4]. Data was submitted to descriptive and comparative inferential statistical analysis. In the latter, a significance level of 5% was used.

Results: A statistically significant increase in the mean L^* parameter (luminosity) was observed after bleaching, with acid-etched groups showing the highest values. Mean a^* and b^* parameters (chroma) showed a statistically significant reduction in the groups submitted to PAE (G3, G4). Overall, these groups presented the lowest bond strength values. However, only G4 exhibited a statistically significant difference compared to G1 ($p = .021$) and to G2 ($p = .010$) while there was no statistically significant difference when considering G3 ($p = .426$).

Discussion and conclusions: In light of the obtained results, the best clinic option will be to perform an orthophosphoric acid application for 15 s, prior to internal bleaching procedures, since tooth luminosity values increase and chroma values decrease, without affecting the microtensile bond strength. Thus, in this way, an improvement on internal bleaching outcome is achieved, without compromising the final restoration bond strength.

CONTACT Ricardo Guerreiro ✉ ricardoalmancil@hotmail.com

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Influence of different antioxidant agents on the microtensile bond strength of restored teeth after bleaching

Sofia Lobo^a, Inês Caetano Santos^a, António H. S. Delgado^a, Luís Proença^{a,b} and José João Mendes^{a,b}

^aInstituto Universitário Egas Moniz (IUEM), Egas Moniz Cooperativa de Ensino Superior, Caparica, Portugal; ^bCentro de Investigação Interdisciplinar Egas Moniz (CiiEM), Egas Moniz Cooperativa de Ensino Superior, Caparica, Portugal; Instituto Universitário Egas Moniz, Caparica, Portugal

ABSTRACT

Introduction: Due to an increase in patient awareness and search for aesthetic treatments, dental bleaching is a frequent and safe procedure in clinical practice for the removal of stains [1]. Bleaching agents are known to adversely affect the bond strength between resin composite and tooth surface, when adhesive procedures are performed immediately after tooth bleaching [2]. The reduction in bond strength is related to the presence of residual oxygen, a sub product of hydrogen peroxide that remains on the tooth surface and which may interfere with infiltration of the resin in the dentine tubules and inhibit the polymerisation of resin monomers [3]. Antioxidant agents like sodium ascorbate, grape seed