can be affected by some environmental conditions such as temperature, ultraviolet radiation or visible light, modifying the final concentration of this compound. The aim of our study is to assess a method for determine the concentration of HP in commercial bleaching preparations when this solutions are applied on the teeth.

Material and Methods

We selected three commercial preparations: Opalescence Endo® (35%PH), Pola Office +® (37.5 %PH) and DayWhite® (37 %) carbamide peroxide, All of them were preserved at 4°C in darkness. In order to quantify the amount of HP, the different compounds were dissolved in 6% bidestilated water (weight / volume) and 1 ml of this solution was placed in a special quartz cuvette and introduced into a fluorometer. Subsequently, the light emitted by the fluorometer ($\lambda=420$ nm) passed through the sample and the associated software provided the fluorescence emitted by the HP. Using this data and line pattern, the concentration of HP in the samples was obtained.

Results

The concentration of HP was similar in the Endo Opalescence® and Pola Office +® samples, 26.09 M and 26.68 M, respectively. On the other hand, the concentration of HP in DayWhite® sample was 5.28 M.

Conclusions

The method used in this study allows to calculate the concentration of HP (active agent) in the bleaching products analyzed. However, future studies should be developed in order to compare the final concentration with the desired product concentration.

- Oral Presentation 46

TITLE: The complexity of rehabilitation canine guides

AUTHORS: Luengo Capilla MA, Ceballos L, Gomes G, Fuentes MV, Araujo E.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S22.

* doi:10.4317/jced.17643830

<http://dx.doi.org/10.4317/jced.17643830>

Introduction

The rehabilitation of canine guidance is a challenge for clinicians as it sometimes implies the conflict between different, opposing, materials which can result in asymmetrical wear. The constant introduction of new materials lacking sufficient, or sometimes any, clinical studies regarding their long-term behaviour is a reality.

Therefore the clinic faces a difficult task when choosing the most appropriate material.

Case report

We present two clinical cases in which canine guidance was rehabilitated as a complementary treatment for aesthetic reasons at the patients' demand. For these treatments the restorative materials used were a lithium disilicate ceramic (IPS and maxPress, Ivoclar Vivadent) and a nano-ceramic resin composite (Lava Ultimate, 3M ESPE), respectively.

In the first case, four ceramic veneers were made for the maxillary incisors and two more for the mandibular incisors to protect the restoration of the upper teeth and provide stability to the guidance. Thus, the guidance was made of ceramic and enamel. At the 18 month revision a distinct wear of was observed in the natural enamel requiring additional restoration of the lost dental tissue by means of a ceramic veneer made of the same material.

In the second case, the patient had direct resin composite veneers applied in the maxillary canines and in the maxillary right lateral incisor, without occlusal contact, that were made at the end of the orthodontic treatment. Palatine veneers of composite resin were applied in the maxillary canines using the nano-ceramic composite resin (Lava Ultimate, 3M ESPE). At the 6 months check revision no wear was observed in the antagonist teeth.

Conclusions

Despite the fact literature point out to a similar wear for lithium disilicate ceramic and enamel, further clinical studies are required to corroborate the evidence.

- Oral Presentation 47

TITLE: Stimulatory effect of leptin in the dentin sialophosphoprotein (DSPP) production in human dental pulp

AUTHORS: Martín González J, Sánchez Domínguez B, Crespo Gallardo I, Martín Jiménez M, Segura Egea JJ.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S22.

* doi:10.4317/jced.17643831

<http://dx.doi.org/10.4317/jced.17643831>

Objectives

Leptin, a mediator of the inflammatory response, and its receptor (LEPR) are expressed in the human dental pulp. Sialophosphoprotein dentin (DSPP) is a protein involved in odontogenesis and the dentin-pulp reparative response. This research aims to describe the im-

munohistochemical localization of LEPR and study the effect of leptin on the expression of dentin sialophosphoprotein (DSPP) by human pulp cells .

Materials and Methods

Twenty-five dental pulp samples were obtained from freshly caries- and restoration- free extracted human third molars. The pulp samples were processed and mineralization produced by odontoblasts in response to leptin was determined analyzing the expression of DSPP by immunoblot and by real time PCR (qRT- PCR). LEPR localization was examined by immunohistochemistry using anti-human LEPR monoclonal antibody.

Results

The immunoreactivity for antibodies anti- LEPR was localized in the odontoblastic layer and the predentine . Leptin dose-dependently stimulated dentin sialophosphoprotein expression in human dental pulp. Western blot analysis of leptin-stimulated human dental pulp samples revealed the presence of a protein with an apparent molecular weight of approximately 100 kDa, which corresponds, to the estimated molecular weight of DSPP. The expression of DSPP mRNA was confirmed by qRT-PCR analysis, and the size of the amplified fragments was confirmed by agarose gel electrophoresis.

Conclusions

For the first time it has been demonstrated that human odontoblasts express the leptin receptor (LEPR) , and the binding of leptin to LEPR results by DSPP production by odontoblasts . These findings suggest that leptin plays a role in the defensive response pulp and dentinogenesis

- Oral Presentation 48

TITLE: Activation of PKB Pathway signaling by leptin in human dental pulp

AUTHORS: Martín Jiménez M, Martín González J, Crespo Gallardo I, Sánchez Domínguez B, Segura Egea JJ.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S23.

* doi:10.4317/jced.17643832

<http://dx.doi.org/10.4317/jced.17643832>

Objectives

Leptin, initially described as an adipocyte-derived hormone to regulate weight control, as well as its receptor (LEPR), are expressed in human dental pulp. Both leptin and LEPR are up-regulated during pulp experimental inflammation. This study aims to assess if leptin

signal transduction in human dental pulp involves PKB phosphorylation.

Materials and Methods

Fifteen dental pulp samples were obtained from freshly caries- and restoration- free extracted human third molars. Pulp samples were processed and leptin signaling was determined analyzing PKB phosphorylation by immunoblot. To measure activation of PI3K pathway in human dental pulp in response to human leptin, the activation of the central kinase of this pathway, i.e. PKB, was measured using antibodies that specifically recognize the phosphorylated form of PKB (P-PKB). Anti- β -tubulin antibodies were used for the control of the immunoblot.

Results

Leptin stimulated PKB phosphorylation. The phosphorylated band corresponded with an apparent molecular mass of about 60 kDa, which corresponds, to the estimated molecular weight of P-PKB. An increase in phosphorylation was observed at 0.1 nM leptin, maintaining the effect at 1 and 10 nM leptin. The relative amount of PKB in stimulated pulps was significantly higher than in unstimulated pulps ($p < 0.05$).

Conclusions

PKB is involved in leptin signalling pathways in human dental pulp.

- Oral Presentation 49

TITLE: Root perforations in central incisors: 12 years of evolution

AUTHORS: Martínez Osorio J, Canalda Salhi C, Berástegui Jimeno E.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S23.

* doi:10.4317/jced.17643833

<http://dx.doi.org/10.4317/jced.17643833>

Introduction

In the endodontics field, iatrogenesis is a common and very complex issue, we had the chance to perform a re-treatment in a patient with two root perforations performed while trying to access the pulp chamber of 1.1 and 1.2, due to lack of direction in the access opening.

Case report

A 65 years-old patient was referred to our clinic to re-treat endodontically both central incisors after a previous failed attempt to in which the deviation of the axis to access cavity did a root perforation iatrogenically in