Objectives

Leptin is the peripheral signal produced by the adipocyte to regulate energy metabolism. It has been demonstrated that leptin receptor (LEPR) is expressed by human dental pulp cells, being up-regulated in experimental pulpitis. This study aims to assess if leptin signal transduction in human dental pulp involves MAPK 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 signalling was determined analyzing MAPK phosphorylation by immunoblot.

Results

Leptin stimulated tyrosine/threonine phosphorylation of MAPK by studying phosphorylation of MAPK 1/3. This signalling pathway was confirmed in all human dental pulps. Western blot analysis of leptin-stimulated human dental pulp samples revealed the presence of a protein with an apparent molecular weight of approximately 42-44 kDa, which corresponds, respectively to the estimated molecular weight of tyrosine phosphorylated forms of MAPK.

Conclusions

MAPK is involved in leptin signalling pathways in human dental pulp. The present study is the first to demonstrate the leptin activity in human dental pulp tissues through MAPK signalling pathway.

- Oral Presentation 69

TITLE: Lava Ultimate CAD/CAM Restorations: How to increase its final esthetic integration?

AUTHORS: Sansalvador Millet V, Chávez Gatty M, Molina Garcia K.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S33.

* doi:10.4317/jced.17643853

<http://dx.doi.org/10.4317/jced.17643853>

Introduction

The use of adhesive indirect restorations is increasingly being popularized to restore medium and big sized cavities and to limit the disadvantages related to direct techniques with composite. Adhesive indirect restorations are becoming more popular to restore medium and large cavities, as well as to limit the disadvantages related to direct composite techniques in restorations. The introduction to new technologies such as the development of

CAD/CAM, illustrates how this new approach to new restorative odontology may look in the future. However, at present, CAD/CAM systems have their limitations. The process to obtain ceramic blocks or—more recently—resin blocks leads to a simplified anatomy restoration. This means we will be taking another posterior cosmetic treatment to achieve a more esthetic final restoration.

Case report

We intend to present a clinical case, which describes step by step the personalized process by stratification of external laps of composite in a monolithic Lava ultimate restoration.

Conclusions

We hope to illustrate how this technique could also be used to personalize, correct or to repair any other type of indirect restoration.

- Oral Presentation 70

TITLE: Biodentine: a new material in Endodontics and Conservative Dentistry; a literature review

AUTHORS: Santos Cubero J, García Marcos JI, Mena Álvarez J.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S33.

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Introduction

Biodentine is a recently introduced to the market in order to replace a new dentin material. It competes with other cements formed by calcium silicate like a calcium hydroxide, Mta, Irm, Cvi.

Description

Biodentine comprises: tricalcium silicate, main component and regulator setting reaction, calcium carbonate, filler acting, dioxide zirconium, providing radiopacity to the material to watch on a radiograph, calcium chloride, accelerates the setting and a polycarboxylate that reduces the viscosity of the cement.

Discussion

Numerous scientific studies endorse it in conservative dentistry (posterior and anterior restorations sealing post, post endodontic reconstructions, direct pulp capping), endodontic and pediatric dentistry field (Perforations, apical caps, retrograde fillings) corroborating excellent mechanical properties, biocompatibility, formation of dentin bridges, good sealing and easy operation.

Conclusions

Biodentine is a biocompatible material, creates dentinal bridges, and presents an efficient adhesion and sealing. It has superior mechanical properties than those of other silicate cements including MTA, also improving man- ageability and the setting time.

- Oral Presentation 71

TITLE: Lithium disilicate–based ceramics: step by step of the adhesive cementation

AUTHORS: Santos Puerta N, Otero Mena I, Souza Andrade J.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S34.

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Introduction

Advances in adhesive dentistry have improved the clinical performance of composite resins and dental ceramics. This success is due to the physico-chemical interaction across the interface between the adhesive and the ceramic surface. The cementation process is vital for the clinical success of all-ceramic restorations. Bonding to lithium disilicate -based ceramics is obtained by two simultaneous mechanisms: micromechanical retention provided by acid-etching of the ceramic surface with hydrofluoric acid and chemical bonds between the inorganic phase of the ceramic and the organic phase of the resin cement by the application of a silane.

Case report

A healthy 34-year-old woman was referred to the Master of Endodontics and Operative Dentistry (Rey Juan Carlos University, Alcorcón, Spain) with a deficient composite veneer and root canal treatment in a maxillary left lateral incisor (2.2). The restorative treatment was determined according to the amount of remaining tooth. Then, it was chosen a plan for the treatment based on canal retreatment, core build with composite resin and placement of a fiberglass post, and finally cementation of a lithium disilicate crown.

Conclusions

The clinical success of these ceramic restorations depends on the cementation procedure, therefore it is necessary to follow judiciously all the steps that that this procedure demands this procedure in order to obtain excellent aesthetic, biological and functional results.

- Oral Presentation 72

TITLE: Effects of EDTA on Wave-One files

AUTHORS: Seguí Troth A, Castillo Felipe C, García de Carellán R, Báguena Gómez JC.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S34.

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Objectives

To evaluate the action of 15% EDTA as intracanal lubricant on Wave-One files after five root canal preparations.

Materials and Methods

Forty-five root canals were instrumented using Wave-One™ Endodontic Reciprocating System. A total of 9 files were used, divided in 3 groups (n=3 each): (1) Wave-One Small #21, (2) Wave-One Primary #25, (3) Wave-One Large #40 files. All biomechanical preparations were done according to manufacturer instructions until work length (1 mm short of the apical foramen) and all the files were lubricated with EDTA. Wave-One Files were sterilized with glutaraldehyde (60') after each use and were studied under microscope (40x) after first, third, fifth use and without using.

Results

No differences were observed after the first use in comparison with the un-used files. Surface wear was observed in apical and middle area of the file in 100% of Small #21 Files; only apical wear in 100% of Primary files and 33.3% of Large files.

After the fifth use, all Small files broke in apical third (100%). 66.6% of Wave-One Primary #25 files presented corrosion. Blade loss was observed in 100% of Wave-One Small files, 66.6% of Wave-One Primary files and 33.3% of Wave-One Large files.

Conclusions

The use of EDTA seems to limit the number of biomechanical preparations with Wave-One files, particularly of Small #21 files which must be used just once. The files remaining could be used up to 3 times at the most.

- Oral Presentation 73

TITLE: Full upper arch restoration with composite and ceramics

AUTHORS: Sepúlveda Tendillo S, Faus Matoses V, Faus Matoses I, Alegre Domingo T, Faus Llácer VJ.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S34.