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Objectives

The use of antimicrobial solutions has been recommended to disinfect demineralized dentin prior to placing the filling material. The aim of this study was to evaluate the ability of several antimicrobials in controlling *Streptococcus mutans* biofilm formed in dentin.

Materials and Methods

Antimicrobial activity of 1% and 2% alexidine, 0.2% and 2% chlorhexidine, 0.2% cetrimide and 0.2%, 0.5%, was assayed on 1-week *S. mutans* biofilm formed on standardized coronal dentin blocks. Results of *S. mutans* biofilm antimicrobial activity by different protocols were, respectively, expressed as the kill percentage of biofilm and the term "eradication" was used to denote the kill of 100% of the bacterial population. To compare the efficacies of the different protocols the Student t test was used, previously subjecting data to the Anscombe transformation.

Results

All alexidine concentrations tested and 0.2% cetrimide achieved a kill percentage higher than 99%, followed by 2% chlorhexidine with percentages above 96% (no statistically significant difference among them). Whereas 2% alexidine and 0.2% cetrimide respectively showed eradication in 10 and 9 of the twelve specimens, 0.2% chlorhexidine did not produce eradication in any case.

Conclusions

The present study shows that, when used for one minute, 2% and 1% alexidine, and 0.2% cetrimide, achieve eradication of *Streptococcus mutans* biofilm in most specimens when applied to a dentin-volumetric model.

- Oral Presentation 67

TITLE: Minimally invasive aesthetics through interdisciplinary orthodontic-restorative treatment

AUTHORS: Ruiz-Sánchez C, Faus-Matoses V, Faus-Matoses I, Alegre-Domingo T, Faus-Llácer VJ.

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Introduction

One of the greatest challenges which the professional faces is to fulfill the aesthetic expectations of the patient for the restoration of anterior teeth. Patients increasingly demand more aesthetics without excessive teeth preparation.

An interdisciplinary management should be planned in order to satisfy the aesthetic and the conservative needs of the patient.

Case report

A 50-year-old woman came to the office asking for an improvement of the aesthetics of the maxillary incisors. Clinical examination showed the discoloration of the maxillary anterior teeth was observed due to a calcification caused by an occlusal trauma, along with attrition and compensatory extrusion.

The treatment plan consisted of the intrusion of the maxillary central incisors to bring gingival zenith to their original location and the alignment of the mandibular incisors with orthodontic treatment to prevent further occlusal trauma.

Once the orthodontic treatment was finished, coreless feldspathic veneers (Noritake, Japan) were placed in 1.1 and 2.1 with a minimally invasive preparation.

After diagnostic wax-up, a mock-up made of Integrity resin (DeTrey Dentsply, Konstanz, Germany) was performed. The impression was taken with Aquasil Hard Putty and Aquasil Ultra XLV (DeTrey Dentsply, Konstanz, Germany).

In a subsequent appointment, try-in and placement were performed under complete isolation. Adhesive Prime & Bond NT (Dentsply DeTrey, Konstanz, Germany) and translucent cement Calibra (Dentsply DeTrey, Konstanz, Germany) were used for bonding.

Conclusions

The combined orthodontic-restorative treatment allowed the resolution of the aesthetic and functional problems of the patient with a minimally invasive approach that preserved all the healthy dental tissue.

- Oral Presentation 68

TITLE: MAPK is involved in leptin signalling pathways in human dental pulp

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

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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.

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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.

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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.