- Oral Presentation 16

TITLE: Effect of different surface pretreatment and aging on composite onlays bond strength.

AUTHORS: Cura M, González-González I, Fuentes MV, Ceballos L.

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Objectives

To evaluate the influence of different surface pretreatments on microtensile bond strength (μ TBS) of composite onlays after aging.

Materials and Methods

Composite onlays (Filtek Z250, 3M ESPE)($\varnothing$ 8 X 4 mm high) were randomly assigned to 6 groups, according to surface treatment: 1. Al₂O₃+1XT: Sandblasting with 27 μ m Al₂O₃ particles + Adper Scotchbond 1XT (3M ESPE); 2. Al₂O₃+Si+1XT: Sandblasting with 27 μ m Al₂O₃ particles + Silane application (ESPE SIL, 3M ESPE)+ Adper Scotchbond 1XT; 3. Al₂O₃+Universal: Sandblasting with 27 μ m Al₂O₃ particles + Scotchbond Universal (3M ESPE); 4. Silica+1XT: Tribochemical silica coating 30 μ m particles (Cojet, 3M ESPE) + Adper Scotchbond 1XT; 5. Silica+Si+1XT: Tribochemical silica coating 30 μ m particles + Silane application +Adper Scotchbond 1XT; 6. Silica+Universal: Tribochemical silica coating 30 μ m particles + Scotchbond Universal. Composite overlays were luted using RelyX Ultimate resin cement (3M ESPE) to fresh resin composite specimens. Bonded assemblies were stored in water (24h or 6 months) and subsequently prepared for μ TBS testing. Data were analyzed by two-way ANOVA, SNK and student t-tests ($p < 0.05$). Failure mode distribution was recorded and selected fractured beams were observed under SEM.

Results

μ TBS mean values in MPa and standard deviations (sd) are shown in the table. Different letters indicate statisti-

cally different μ TBS values among groups. *Means statistical differences between 24 hours and 6 months.

Conclusions

Sandblasting followed by Adper Scotchbond 1XT or Scotchbond Universal adhesives application provided higher adhesive strength values at 24 hours. The latter was the experimental group that presented higher bond strength also 6 months later. The application of sandblasting or tribochemical silica coating before Scotchbond Universal adhesive produced stable bond strength values after 6 months storage.

- Oral Presentation 17

TITLE: Influence of ultrasonics used in endodontics on cardiac pacemakers and implantables automatic defibrillators

AUTHORS: De los Mozos García I, Bach Álvarez A, Campo Nieves L, Sánchez Garrido E, García Barbero E.

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Objectives

The aim of this study is to determine whether ultrasound devices, commonly used in Endodontics, affect the functioning of cardiac pacemakers and implantable automatic defibrillators.

Materials and Methods

We selected two models of cardiac pacemakers and three models of automatic defibrillators. All of them were used with ultrasonic tips Star-X connected to two types of ultrasounds: Kavo and Newtron P.S of Satelec. The pacemakers and defibrillators were analyzed with a clinical measurement system (Medtronic® 2090 Programmer B.V. Netherlands).

A closed circuit was created by immersing one unir-

Surface pretreatment	24 hours			6 months		
	μ TBS (Sd) Mpa		n	μ TBS(Sd) Mpa		n
Al ₂ O ₃ +1XT	98(18)*	A	36	52,8(12,9)*	D	40
Al ₂ O ₃ +Si+1XT	76,9(19,9)*	BC	52	54(16,2)*	D	43
Al ₂ O ₃ +Universal	97,5(18,9)	A	45	91(19,15)	A	40
Silica+1XT	74,3(13,5)*	C	46	55,7(20,5)*	D	48
Silica+Si+1XT	83,3(15,6)*	B	44	68,3(24,8)*	C	47
Silica+Universal	71,2(18,3)	C	64	76,6(15,8)	B	46

radicular tooth in a 5cmx5cmx30cm container. The circuit was closed by connecting the cardiac pacemaker cable with the opposite end of the container. We monitored the pacemaker baseline in different situations. First, when the ultrasound was switched on, then using 1,2, and 3 power switches, in the case of Kavo ultrasound, and then with all power switches, from 1 to 20, in the Newtron ultrasound case. Each of the activations, in turn, was performed at 30 cm and 2 cm from the pacemaker's sensor.

The positive control was made by touching the alginate with the electrode of the electric scalpel. The negative control was made by touching the adjacent alginate with the tip of the Sonic Activator Endoactivator. The pacemaker's operation was monitored using the Medtronic system.

Results

Ultrasounds altered the functioning of pacemakers and defibrillators in the same way that the electrical scalpel that was used as a positive control. They produced graphics altered by noise and changes in the mode of contraction.

Conclusions

Ultrasonic devices adversely affect the operation of pacemakers and cardiodefibrillators. We believe that its use in patients with pacemakers or cardiodefibrillators should be contraindicated and we think more studies are needed which corroborate these results.

- Oral Presentation 18

TITLE: Endodontic and restorative treatment of two discolored incisors with silver points

AUTHORS: de Pablo OV, Diaz-Sanchez C.

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Introduction

The color change in an anterior tooth is a major cosmetic problem and a challenge for the dentist who should solve it. It is important to identify the cause to establish an appropriate treatment.

Case report

We report a patient who underwent root canals with silver points in several upper teeth. Years later, the patient came with chronic apical periodontitis in two incisors and an unsatisfactory aesthetic result of the staining produced by said filling. After assessing the various

treatment options, we chose to approach the case conservatively. At endodontic level, we remove both silver points and due to wide apical caliber the canals were sealed with MTA and gutta-percha. Once retreatments were finished, we performed a cervical proper sealing glass ionomer and proceeded to perform an internal bleaching. The product used was sodium perborate mixed with distilled water and renewed weekly. Once the teeth had regained its original color, were restored conservatively with direct composite veneers. In subsequent recalls, we see the resolution of the apical periodontitis and the good performance of the restorations.

Conclusions

When performing endodontic treatment of a tooth we have to discard materials that can alter the color of it, avoiding future problems. Internal bleaching with sodium perborate, in this case, has reversed staining produced by silver tips; endodontic retreatment with MTA and gutta percha has succeeded in healing a chronic apical periodontitis; and with the natural color of the teeth, veneers direct composite involves an aesthetic alternative satisfactory for the patient.

- Oral Presentation 19

TITLE: Indirect composite restoration performed through digital workflow

AUTHORS: De Vega Calleja S, Da Silva D, Fuentes MV, Luengo M, Ceballos L.

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Introduction

The application of digital technology to Dentistry brought important changes to the daily practice of clinicians, not only by simplifying procedures, but also by gradually improving the quality of treatments. Besides the simplification process of the clinical steps brought by the digital flux, the development of new CAD-CAM materials endows restorations with improved mechanical behaviour and better accuracy when compared with conventional techniques, improving the marginal adjustment, the anatomy and the contact points

Case report

A patient (65 year old man) requires to be treated in the URJC University Clinic. Following clinical and radiographic studies, the need for endodontic and restorative treatment with an onlay in the 1.6 was detected. After performing the endodontic treatment, tooth preparation