Materials and Methods

For this study there have been selected 72 rotary nickel-titanium (NiTi) instruments

11 groups were realized: Group A Mtwo System 25/06 (VDW, Munich, Germany) Group B K3 System 25/06 (SybronEndo, Orange, CA) Group C TF System 25/06 (SybronEndo, Orange, CA) Group D Protaper Universal System F2 (Dentsply, Maillefer, Switzerland) Group E GT series X System 30/06 (Dentsply, Maillefer, Switzerland) Group F GT series System X20/06 (Dentsply, Maillefer, Switzerland) Group G Profile System 25/06 (Dentsply, Maillefer, Switzerland) Group H HyflexCM System 20/04 (Coltene, Alstatten, Switzerland) Group I HyflexCM System 25/04 (Coltene, Alstatten, Switzerland) Group J HyflexCM System 20/06 (Coltene, Alstatten, Switzerland), Group K F360 System 25/04 (Komet Dental, Brasseler GmbH & Co. Lemgo, Germany), Group L F360 System 35/04 (Komet Dental, Brasseler GmbH & Co. Lemgo, Germany).

The cyclic fatigue test was performed in a customized artificial stainless steel canal (60° degree curvature with 5 mm radius). Instruments were rotated at 300 rpm until fracture. All data obtained were recorded and statistically analyzed using an ANOVA test.

Results

Profile 25/06 were found to be the most flexible instruments, showing a significant difference ($P < .05$) in comparison with the other instruments. Followed by the limes Hyflex and F360 in descending order (20/04, 25/04, 20/06, 35/04). Protaper F2 was the system that showed a minor resistance to the cyclical fatigue.

Conclusions

The systems with a major area of section are more vulnerable to the fracture than those of minor section turning in the same curvature. Of the current systems Hyflex and F360 are those who obtain better results without significant differences among their different tapers.

- Oral Presentation 52

TITLE: Problems in anterior maxillary teeth

AUTHORS: Miraglia Cantarini J, Escribano Mediavilla N.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S25.

* doi:10.4317/jced.17643836

<http://dx.doi.org/10.4317/jced.17643836>

Introduction

Endodontic procedures consist in clean, shape and fill in three dimensions, with definitely materials, the root canal system.

Case report

A referred patient with acute symptoms in subnasal region attended the dental office. Diagnostic and radiographic tests were done in the upper anterior teeth. The diagnosis was Chronic Apical Periodontitis with a flare up process caused by inadequate root canal treatments in teeth 1.1, 1.2, 2.1 and 2.2. Retreatment of all previous root canal procedures was the treatment option: 1.2 and 2.2 were orthograde retreatments, 1.1 apical foramen resorption was sealed with MTA and 2.1, once the broken Hedstroem file was removed from the root canal, apical third and the lateral root perforation were sealed with MTA.

Conclusions

After 2 years follow up 2 years, periapical health is evident and no symptoms are presented.

- Oral Presentation 53

TITLE: Effect of adhesive vibration with Compothixo® in shear bond strength

AUTHORS: Miralles Alvarez AF, Duran Jimenez B, Guillen Sanchez J, Chiva Garcia F.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S25.

* doi:10.4317/jced.17643837

<http://dx.doi.org/10.4317/jced.17643837>

Objectives

To compare the effect of the adhesive vibration with Compothixo® on the shear bond strength of composite resin to dentin with the manual application of the adhesive system.

Materials and Methods

12 molars extracted for periodontal reasons were used. Flat dentin mesial surface were made by diamond bur to expose the dentin. Teeth were randomly divided into two groups (n=6 each): (Group1) adhesive without vibration, rubbing with a microbrush (15 seconds), (2) Adhesive vibrated with Compothixo® (15 seconds). After etching the dentin surface (37 % orthophosphoric acid), OptiBond® Solo Plus™ adhesive was placed according to the manufacturer's instructions. Composite cylinders (2mm high, 4 mm internal diameter) (Herculite XRV Ultra A3®) were polymerized 20 seconds with Demetron Kerr® curing light and were stored in distilled water at 37 ° during 24 hours. Shear bond strength was performed using an universal testing machine Autograph AGS (Shimadzu) at a crosshead speed of 1mm/min. Data were statistically analyzed using t-test (significance level: $p < 0.05$) with SPSS v15.

Results

Shear bond strength of group 1 ($38,08 \pm 30,53$ Mpa) was higher than group 2 ($19,5 \pm 11,41$ Mpa) but the differences weren't significantly different ($p=0,21$).

Conclusions

Adhesive application with Compothixo® did not improve the bond strength of composite to dentin.

- Oral Presentation 54

TITLE: Influence of cement and polymerization technique in post luting

AUTHORS: Montalvo Sánchez N, García Barbero AE, Vera González V, Aliaga Vera I.
SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S26.

* doi:10.4317/jced.17643838

<http://dx.doi.org/10.4317/jced.17643838>

Objectives

To evaluate the influence of cement type and polymerization technique on the push-out bond strength and microleakage of fiber posts.

Materials and Methods

32 human premolars were sectioned at the proximal cemento-enamel junction and endodontically treated employing Protaper rotary instruments. The root canals were obturated with gutta-percha cones using the lateral condensation technique and AH Plus sealer. Post space was prepared to a depth of 9 mm. Samples were divided into 4 groups according to the cement and the polymerization technique used: conventional dual resin cement, self-adhesive dual resin cement, immediate photocuring, and delayed photocuring. Each root were cut into 3 slices perpendicular to the long axis of the tooth. 20 specimens were subjected to micropush-out test and the remaining 12 were prepared to evaluate the microleakage. Complementarily, the samples subjected to microleakage test were observed by scanning electron microscope.

Results

Posts luted with self-adhesive resin cement produced lower bond strength and greater microleakage than those cemented with self etching adhesive and conventional resin cement. The polymerization techniques tested showed no differences in bond strength and microleakage. Root level affected the bond strength, with the lowest values for the apical third, but did not affect microleakage.

Conclusions

Self etching adhesive followed by conventional resin cement produced higher bond strength and lower microleakage than self-adhesive resin cement. Polymerization technique seems not to affect the variables studied.

- Oral Presentation 55

TITLE: An in-vitro microleakage study: A new "multimode" self-etch adhesive with enamel etching

AUTHORS: Moreno Aroca M, Alegre Domingo T, Faus Matoses V, Faus Llácer VJ.
SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S26.

* doi:10.4317/jced.17643839

<http://dx.doi.org/10.4317/jced.17643839>

Objectives

The aim of this study was to evaluate the microleakage produced by a new all-in-one multimode self-etch adhesive on enamel and cementum by using a selective enamel etching.

Materials and Methods

A hundred and forty class V cavities were prepared with the occlusal margin in enamel and the gingival margin in dentin and restored with two different adhesives. The specimens were divided into two groups: Group 1) using Prime&Bond NT (Dentsply De Trey) with total etch technique; group 2) using Scotchbond Universal (3M ESPE) with selective enamel etching. After thermocycling process, the teeth were immersed in Indian ink during a period of 24 hours and cut longitudinally. Microleakage was evaluated in coronal and apical walls by optical microscope at 2,5x magnification. Data were statistically analyzed with the Chi-squared test ($p<0.05$).

Results

Enamel and cementum microleakage with Scotchbond Universal was higher than using Prime&Bond NT. At the enamel margin both adhesives showed less microleakage than in cement margin. The highest microleakage expression was found on cement when Scotchbond Universal was used.

Conclusions

Prime&Bond NT offers less microleakage level than Scotchbond Universal when used with selective enamel etching. More in-vitro microleakage studies are necessary.