were obtained from each root : two coronal third slices, two medium third slices and two apical third slices. The sample was randomly distributed randomly in 3 different study groups: NaOCl 5.25% for 1 minute (3ml), NaOCl 5.25% for 5 minutes (3ml), NaOCl 5.25% for 20 minutes (3ml) plus EDTA 17% for 1 minute (3ml). Each specimen acted as its own control specimen and was immersed in the tested solutions for the estimated time. All specimens were cleaned for 10 seconds in an ultrasonic device before and after treatment with the solutions. The roots were inspected under Fourier Transform Infrared spectroscopy (Excalibur 3010 FT-IR, Varian, Walnut Creek, USA) to evaluate the inorganic and organic composition. The statistical tests were Friedman's and Wilcoxon's Test to assess changes in the same radicular third. The Kruskal-Wallis and Mann-Whitney's were used to evaluate changes among root dentin thirds.

Results

No changes were registered in the phosphate group in the 3 study groups. In the NaOCl 5.25% group, Amida III and Amida I significantly decreased in the apical third. The Amida I also decreased in the medium third too. In the EDTA 17% group, Amida III and Amida I were increased in the apical third.

Conclusions

The inorganic component of the root dentine is not affected by the irrigation solutions. NaOCl 5.25% and EDTA 17% caused changes in the organic component of the root dentin, specially in the apical third.

- Oral Presentation 12

TITLE: Indirect fiber-reinforced composite dowel-core

AUTHORS: Bernardo-Clari J, Torres-Nebril A, Alegre-Domingo T, Faus-Matoses V, Faus-Llácer VJ.
SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S6.

* doi:10.4317/jced.17643796
<http://dx.doi.org/10.4317/jced.17643796>

Introduction

To minimize polymerization shrinkage in the case of non-cylindrical root canals, it is proposed to perform indirect fiber-reinforced composite dowel-cores.

Case report

Three cases of endodontically treated maxillary incisors (two lateral incisors and one central incisor) requiring a post for restoration are presented. Once root canal

treatments were completed, the post spaces were prepared with Gates Glidden burs. Then, impressions with silicone (Elite HD +, Zhermack, Badia Polesine, Italy) were taken with acrylic resin dowels for preparing the dowel-cores in the laboratory. After checking the fitting, the indirect dowel-cores were luted with a high filler load dual resin cement (Core X Flow, Dentsply Maillefer, Konstanz, Germany), following manufacturer's instructions.

Conclusions

This type of indirect dowel-core allows a better adaptation to the canal walls. It is required a smaller amount of cement around and less curing shrinkage is obtained. Therefore, the adhesion of the post within the root canal is improved.

- Oral Presentation 13

TITLE: Using Artificial Intelligence to predict endodontic failure

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SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S6.

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Objectives

This manuscript describes the application of Artificial Intelligence (AI) techniques, specifically Case-Based Reasoning (CBR), to predict the failure of root canal therapy.

Materials and Methods

The study was performed on 35 patients who experienced failure in root canal therapy, specifically by crown-root fracture, the appearance of a periapical lesion or the expansion of an existing one. We determined the variables that could influence the appearance of periapical lesion and the level of significance, primarily by applying statistical tests (Chi square, Fischer exact test, and Monte Carlo simulation), before creating the CBR to make predictions.

Results

The creation of a CBR system that integrates Bayesian networks in the reuse phase presented a treatment failure predictive capacity of 89%.

Conclusions

CBR systems were effective in predicting endodontic failures caused by crown-root fracture, the appearance