Objectives

The incorporation of computational techniques and artificial intelligence in the area of biomedicine has made remarkable progress in the prevention and detection of diseases. Decision trees are a prediction model used in the field of artificial intelligence that provides a human expert information, a caries classification in this study, made by the system, generating rules that will support decision making.

Dental caries is one of the most prevalent infectious diseases in patients and the diagnosis is made by dentists using clinical and radiological examination.

The aim of this study is to analyze the relationship between the Mount/Hume classification of caries and Orthopantomography x-ray.

Materials and Methods

The study was realized on fifty patients who attended to the triage of the School of Dentistry in the Complutense University of Madrid and performed by a faculty of the department of Conservative Dentistry. After clinical examination and radiological study, all the findings were uploaded in patient's chart, the data collected is sent to the University of Salamanca to be analyzed by Bioinformatics.

Results

Three decision trees were generated by the algorithm J48. Decision tree number two, associated the variables size and location of the lesion using the Mount/Hume classification and radiographic variable.

Conclusions

Decision trees are a simple tool that allows us to visualize and analyze the relationship between the Mount/Hume classification of caries and extraoral radiographic study.

Decision trees used in this study highlight the need for the use of the panoramic radiograph for classifying caries sizes 2, 3 and 4 and location 2 of Mount/Hume and not in sizes 0 and 1 that require more specific diagnostic tests.

- Oral Presentation 33

TITLE: Evaluation of the shades in the space ciel-ch of amaris composites

AUTHORS: Guzmán Pina S, Funes Gil I, Fernández Sánchez G, Chiva García F.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S16.

* doi:10.4317/jced.17643817

<http://dx.doi.org/10.4317/jced.17643817>

Objectives

To evaluate color change parameters in space Ciel-ch of Amaris(VOCO®) dentin composite resin when adding its enamel colors

Materials and Methods

45 discs, 2mm thick and 6 mm in diameter were created of Amaris dentin shade, and divided in 5 groups: group1-shadeO1, group2-shadeO2, group3-shadeO3, group4-shadeO4 and group5-shadeO5. In each group (n=9) we added to the dentin shade disks, 1mm of Amaris enamel shade (TL, TN, TD), obtaining 3 discs per group of each enamel shade. The color parameters (L, c, h) were determined with the composite-resin light-cured, by a spectrophotometer EasyShade(Vita®), before and after adding the enamel shade. The results were analyzed by comparing the variances (ANOVA) with statistic package SPSS-v.15

Results

In groups 4 and 5, all enamel shades increased significantly its lightness (L) ($p < 0.001$). In group 3 there were no significant differences ($p = 0.08$), in group 2 there was only a significant increase in the shade TL ($p = 0.03$), and in group 1 there was an increase with the shade TL but a decrease with the shade TN and TD ($p = 0.02$). Regarding chroma (c), all 5 groups decreased significantly when placing the 3 enamel shades. As for hue (h) there was not significant decrease in groups 2 ($p = 0.05$) and 5 ($p = 0.17$). In groups 3 and 5, only the enamel shade TL presented significant differences ($p = 0.001$). In group 1, all 3 enamel shades presented a significant difference ($p = 0.002$). The correlation with Vita® shades was A3.5 for 2mm of dentin shades O1, O2 and O3, and A4 for shades O4 and O5. For 1mm of enamel shades, its correlation was A2 for TN, B1 for TL and A1 for TD.

Conclusions

The placing of 1mm thickness of enamel shade, decreased the chroma of the dentin shades. The shade TL increased the lightness but the shade TD did not decrease it.

- Oral Presentation 34

TITLE: Endodontic failure due to forgotten duct : a series of cases

AUTHORS: García Marcos JI, Santos Cubero J, Alonso Ezpeleta LO, Mena Alvarez J.

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Introduction

The presence of isthmus and anatomic variations on the root canal system causes lots of endodontic failure.

Case report

We present a serial of cases. Patients come to the Alfonso X el Sabio Dental Hospital. Patients arrive with pain when percuted on the root canal treated tooth witch also presents vital response to stimulations. That's the reason why non quirurgical retreatment is the option to solve these discomfort. Lots of endodontic failures are due to diagnostic errors and therefore wrong acces to locate all ducts. Missed ducts will bring symptoms due to a tube that was not promptly located. Endodontic failure due to forgotten ducts rises to 19.7%. These epidemiological rates suggest we are aware of them especially on first superior molars in wich these rates raise up to 96% when searched invitro.

Conclusions

Endodontic treatment should aim to achieve not only symptomatic or radiographic success , but also the histological success. This requires having a good teorical base on the anatomy and morphology of root canals. Also it's needed a good accuracy when the radiographic location of the ducts and anatomical aberrations are present.

- Oral Presentation 35

TITLE: MTA repair of an iatrogenic perforation: a case

AUTHORS: Garci ía Sanz I, Abad Abad A, Reviejo Fragua M.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S17.

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Introduction

Furcal perforations are significant iatrogenic complications of endodontic treatment and could lead to endodontic failure. Mineral trioxide aggregate (MTA) has been regarded as an ideal material for perforation repair, retrograde filling, pulp capping, and apexification; setting aside other materials like the silver amalgam, IRM o SuperEBA.

Case report

This case report describes a furcal perforation in a mandibulary first molar of a female patient aged 22 that came to the Master of Endodontic and Restorative Dentistry of Rey Juan Carlos University. She presented

a metal - ceramic crown, a root canal treatment and a metal screwed pin in distal root of tooth 36. In the X-ray image, it was seen radiolucency in furcation area and distal root. It was made a CBCT to confirm the suspicion of perforation caused by the pin. The proposed treatment plan was endodontic retreatment, perforation sealing with MTA and a temporary crown placed for 6 months to control evolution.

The pin was removed with ultrasonic tips and the gutta-percha was removed with Reciproc 25 (VDW). The mesial root canals were sealed with Elements Obturation Unit (Sybron Endo). The distal root canal was sealed in its apical third with guttapercha and the rest with gray MTA (Angellus). The pulp chamber was sealed and core build with resin composite (Filtek Supreme XTE shade A3, 3M ESPE) and then it was made a provisional crown with Bis acryl Protemp resin (3M ESPE).

Conclusions

After 6 months, the decrease of periradicular radiolucent lesions, the pain absence and the functional tooth stability indicated a successful outcome of sealing perforation. Therefore, MTA may be considered the material choice due to its biocompatibility, antibacterial activity and sealing ability.

- Oral Presentation 36

TITLE: High smile line aesthetics with interdisciplinary restorative-periodontal treatment and digital smile design

AUTHORS: Garcia-Gimenez L, Faus-Matoses V, Faus-Matoses I, Alegre-Domingo T, Faus-Llácer VJ.

SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S17.

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<http://dx.doi.org/10.4317/jced.17643820>

Introduction

A clinician must fully understand the various considerations when treating an excessive gingival display case: the simetric and regular gingival margins, the correct parallelism with the incisal line, the zenith exact position and the shape of the interdental papilla. The Digital Smile Design allowed both interdisciplinary communication between the restorative dentist/ periodontist/ dental technician and the preview of the final result, which helped with treatment plan presentation to the patient, their motivation and acceptance of the treatment.

Case report

A 26-year-old woman presented to the dental clinic for a cosmetic consultation. She had been treated in another