

CLINICAL CASES OF ENDODONTICS

NON-SURGICAL AND SURGICAL RE-TREATMENT

- Oral Presentation 1

TITLE: Root canal treatment of 3.2 with fractured vertical condenser

AUTHORS: *Ojuel Guillermo M, Pérez Cano A, Baroni Cañizares L, Román Esteban A, Alonso Ezpeleta O.*

Introduction

The fracture of endodontic instruments in the root canal is an unusual accident, but complicates the prognosis if we do not achieve the objectives of cleaning, shaping and root obturation. Techniques that complement manual files have been developed for their removal: ultrasonic tips, extractors, hypodermic needles, metal loops, post elimination systems...etc. It is important to know that during our treatment, we must always keep in mind the preservation of tooth structure, and it is more complicated in these situations.

Case Report

A patient went referred to the service of practices for the root canal treatment of 3.2 after the impossibility of canal location. On clinical and radiographic diagnosis, we determined the presence of acute apical periodontitis, with lateral radiolucent zone in the mesial area of the root. We carried out the conventional treatment protocol until the moment of obturation, when a vertical condenser broke on the middle of the root performing the test of length. Given its visibility, we tried to removal with ultrasonic tips, but, since we did not achieve success, and we were generating a lot of dentine loss, we tried a bypass with files, managing to exceed and remove it. We then performed the obturation, getting the sealing of a lateral canal that ends in the radiolucent area of diagnosis radiograph. The case progressed favorably to 36 months.

Conclusions

It is important to know the possible alternatives for the treatment of fractured instruments, in order to decide the most conservative option, and which best suits our experience. The prognosis should not get worse if the endodontic objectives of cleaning, shaping and biological sealing are achieved.

VITAL PULP THERAPY

- Oral Presentation 2

TITLE: Direct and indirect pulp capping: maintaining pulp vitality

AUTHORS: *Pérez Cano A, Ojuel Guillermo M, González Domínguez A, Poc Sola S, Alonso Ezpeleta O.*

Introduction

There are several techniques available for the management of pulp for extensively decayed teeth. Dental pulp capping procedure is the application of a protective agent to an exposed pulp (direct capping) or the remaining thin layer of dentin over a nearly exposed pulp (indirect capping). The aim of both techniques is to allow the pulp to recover and maintain its normal vitality and function. When the caries lesion is extensive, the dentist has to make a decision whether to keep pulp vitality by applying the pulp capping materials and seal off the exposed dental pulp (pulp capping) or to remove the part of the coronal pulp tissue (pulpotomy) or to eliminate it completely (pulpectomy).

For several years the ideal material used in pulp cappings has been calcium hydroxide. The development of new bioceramic/bioactive materials has changed the way we treat lesions located close to pulp tissue, in addition to considerably improving the prognosis of these treatments.

Case Report

A series of cases are reported in which direct and indirect pulp cappings have been made and in which success has been achieved in the maintenance of pulpal vitality in young permanent and adult teeth and a review of the indications, contraindications, and success criteria associated with these.

Conclusions

Direct and indirect pulp cappings generate an activation of the defense mechanisms of the pulp, which cause important changes from a biological and histological point of view of the surrounding dental tissues. A detailed diagnosis of each of the cases and the performance of a neat and purified technique, are fundamental for the success of these types of treatments.

- Oral Presentation 3

TITLE: Comparison between surgical and orthodontic treatment in invasive external cervical resorption with two clinical cases

AUTHORS: Martínez Gallego LM, Chikanovskyy V, Peñuelas Calvo R, Poc Sola S, Alonso Ezpeleta O.

Introduction

External cervical resorption (ECR) of a tooth is an uncommon pathology whose etiology is not clear that can sometimes be misdiagnosed and can lead to tooth loss. Treatment should be directed towards the complete elimination of the resorptive tissues and the reconstruction of the defect through the use of materials whose adaptation and biocompatibility is adequate and stable in the long term.

Materials and Methods

Two cases of ECR are presented in advanced stages, one of them treated with orthodontic traction and the other with surgical approach. The indications and sealing materials used in each technique are evaluated, as well as their long-term evolution, according to the scientific literature consulted.

Results

Both the orthodontic technique and the access surgery show good results in the treatment of this type of pathologies, there are no differences depending on the material used, although the composite is of choice in the orthodontic traction for its aesthetics, while bioceramic materials such as Biodentine seem to be better in contact with bone and periodontal tissues, therefore, indicated in surgical treatment.

Conclusions

Both techniques are indicated in the treatment of the ECR, there are also no significant differences according to the prognosis of them depending on the sealing material used in each case, as long as it corresponds to their indications.

- Oral Presentation 4

TITLE: Revascularization and aesthetic rehabilitation in a mature tooth with an open apex

AUTHORS: Jalón Rodríguez V, Ramos Aguado I, Abizanda Guillén S, Poc Sola S, Alonso Ezpeleta O.

Introduction

Currently, regenerative endodontic therapy is considered a first-line treatment for immature permanent teeth with necrotic pulps. Even though the success rate of apexification is still higher, the benefits regarding root development obtained by these procedures are clearly

greater. However, it must be kept in mind that a complete regeneration of the pulp-dentin complex has not been achieved yet.

In the following case report, we explored the possibility of performing this treatment to a necrotic mature tooth whose maturation process was stopped by trauma at an early age. We analyzed both the healing of apical periodontitis and the behavior of open apex facing the possibility of its obliteration.

Case Report

A 16-year-old patient presented to dental clinic with discoloration in tooth 2.1 due to trauma at an early age (at 9 years of age).

Clinical and radiographic examination revealed chronic apical periodontitis in tooth 2.1 with thin root walls, short root length and completely open apex.

A fracture in such a thin root after apexification was highly possible, therefore it was decided to revascularize the tooth with the purpose of healing the apical lesion and expecting the canal to be filled in an autologous manner. The chosen sealing material in said treatment was Biodentine in order to avoid further discoloration. Once the favorable progress of the case was verified, an external bleaching and an aesthetic rehabilitation of the darkened tooth was performed.

Conclusions

It is possible to achieve bone regeneration and periapical healing through revascularization in teeth with incomplete root development in adult patients, as well as apical closure and canal filling with autologous tissues, despite not increasing root length.

- Oral Presentation 5

TITLE: Endodontic surgery: a therapeutic alternative to extraction

AUTHORS: Poc Sola S, Novillo Escribano R, Pradilla Lanau C, Abizanda Guillén S, Alonso Ezpeleta O.

Introduction

Patients are increasingly aware that the best thing for them is the maintenance of their teeth, for that reason they request more conservative treatments, with the purpose of preserving the teeth. Due to this, professionals must be aware of this demand and must be prepared in order to offer a wide variety of treatments to their patients to reach this objective. Few professionals carry out endodontic surgery treatments, it could be because they are afraid to perform such invasive treatments, perhaps they don't have faith in the procedures or even due to lack of knowledge. Finally they decide to extract the teeth abusively and insert an implant. The ability to use correctly the new technologies allows the professionals to make the right diagnosis and to perform an appropri-

ate planning of the cases, achieving high success rates using this treatment.

Case Report

Different cases of endodontic surgery are presented (apical surgery, hemisection, intentional replantation and tooth autotransplanted), with a prosperous evolution of at least two years. In each case the systematic of the clinical process, its indications, contraindications and the previous considerations that it must be taken into account in order to achieve the most successful rates are described in detail. All this is supported by a large scientific bibliography.

Conclusions

It has been demonstrated that endodontic surgery is a treatment with high success rates, and to which professionals should resort more often than before performing tooth extraction. To obtain the best outcome in this treatments, not only it is necessary to carry out an accurate clinical and radiographic diagnosis of the case, but also it is also necessary to perform a correct selection of itself.

- Oral Presentation 6

TITLE: Management of a radicular perforation in a lower first molar

AUTHORS: *Vázquez de Sola Fernández MD, Terceño P, Abella F, Durán F.*

Introduction

The perforation of the radicular wall is one of the accidents that can occur during the endodontic treatment or during preparation of space for a post. This creates a communication between the intracanal space and the external surface of the tooth (Periodontal ligament). The localization, the size and the previous microbiological contamination are the main factors that influence on the prognosis of the repair.

The present clinical case shows the retreatment of an inferior first molar with a perforation at the level of the radicular medium third of the distal root, as well as the presence of an external radicular resorption. The perforation as much as the resorption were filled with a bioactive cement (Biodentine™, Septodont).

Case Report

Patient of 34 years old with diabetes mellitus type I comes to the clinic referring pain while biting in the tooth 4.6. In the clinical exploration we noticed a fractured composite restoration, pain to percussion, absence of mobility and a physiological periodontal probing depth. The radiographs show a radiolucency at the lateral level of the distal root which is compatible with a perforation or lateral stripping, as well as an external radicular resorption that was posteriorly confirmed by

a Cone-Beam Computer Tomography (CBCT). We can also perceive the extrusion of material at the level of the distal root.

The procedure consisted on the deobturation of the four canals with the Reciproc® system (VDW), and posteriorly the obturation of the mesial canals with gutapercha and distal canals with Biodentine.

Conclusions

It is essential to perform a good differential diagnosis in this type of lateral lesions; the help of CBCT is of great value.

The management of perforations with bioactive materials is a predictable treatment if a good disinfection and sealing is achieved.

- Oral Presentation 7

TITLE: Orthograde Retreatment of a maxillary canine with ledge

AUTHORS: *Salló Brugués I, Castro Calderón A, Tomàs Aliberas J, Abella Sans F, Durán-Sindreu F.*

Introduction

Root canal retreatment is indicated in those cases where primary endodontic treatment has failed or does not meet the quality standards. Endodontic retreatment is a highly predictable procedure, since the actual literature reports success rates above 80%.

It is common to find some procedural errors such as ledges, apical transportations, missed canals or perforations at different levels during the cleaning and shaping of previously treated conducts.

Case Report

The present case is a 55-year-old patient with no relevant medical history who was referred to the Endodontics Master of the Universitat Internacional de Catalunya to evaluate the tooth 2.3. During the intraoral examination, we detected the presence of an old restoration with leakage although they patient did not present any symptoms neither to palpation or to percussion. Periapical radiographs showed the presence of a ledge in the middle third of the conduct. In addition, the canal was infra-obtured and since the restoration needed to be changed we decided to retreat the canal first.

Conclusions

All the orthograde retreatment was performed under magnification (Zeiss, Germany). The desobturation of the conduct was carried out with reciprocating systems (Reciproc®, VDW GmbH, Munich, Germany); however, we had several difficulties to overpass the ledge. Finally, we were able to redirect towards the original canal and achieve apical patency. After completing the chemical-mechanical instrumentation, we proceeded to the filling of the root canal with gutta-percha using a

warm-vertical condensation technique. The restoration was done with a direct composite.

The use of the optical microscope is essential in the modern clinical practice specially in cases where ledges are present due to their difficulty to bypass them.

- Oral Presentation 8

TITLE: Retreatment of an Upper Central Incisor with an Old Trauma

AUTHORS: Campante Prina JN, Bóveda C, Tomás J, Abella F, Durán-Sindreu F.

Introduction

The management of a trauma case is always a demanding procedure for the professional and requires the knowledge of several treatment options, in order to adequately choose the best treatment plan for each case.

Case Report

A 16-year-old patient came to the clinic from Universitat Internacional de Catalunya with the chief complain "to change the old restoration in the front tooth" and was referred to the Endodontic Master Department in order to evaluate the need to perform the Endodontic Retreatment of the tooth 2.1. After a complete anamnesis, as well as intraoral and radiographic examination it was diagnosed a previously root canal treatment with an asymptomatic apical periodontitis. After the discussion of the best treatment plan for that teeth, it was decided to perform the root canal retreatment, once the previous therapy was clearly suboptimal, and a direct veneer with composite.

In the first appointment the removal of the old gutta-percha was made, with Reciproc 25 (VDW, Munich, Alemania) and Hedstrom files. Calcium hydroxide was placed as an inter-appointment medication for 15 days and a provisional restoration was made (Cavit; 3M, Maplewood, Estados Unidos). In the second appointment it was decided to do an apical plug with Biodentine® (Septodont, Saint-Maur-des-Fossés, Francia), once the caliber was bigger than 60Ø and a good apical thug-back could not be achieved. At the 3 months control the patient was asymptomatic and happy with the aesthetics.

Conclusions

Root canal retreatment has been shown to have a high degree of success, especially when the previous endodontic treatment could not reach the optimal standards such as correct length and homogeneity of the obturation material, which, according to several studies, is one of the most important prognostic factors. It is from an extreme importance to achieve a perfect apical seal in cases with open apices.

- Oral Presentation 9

TITLE: Indirect pulp capping, direct restorations 3.7 and 4.6

AUTHORS: González Tuch R, Elmsmari F, Ramirez Sebastián A, Abella Sans F, Durán-Sindreu F.

Introduction

Currently, vital pulp therapy is a treatment focused on the minimally invasive endodontic concept with the aim of maintaining the structure and functioning of the dentin-pulp complex in the optimal state. The key of success in vital pulp therapy is the continuity of the vitality of the tooth.

The main objective of this therapy is to placed the agent in the most exposed part of the pulp tissue to promote a favorable environment in the regeneration of the dentinal-pulp complex looking for non-toxic, biocompatible and antibacterial material.

Case Report

Patient of 40 years went to the Universitat Internacional de Catalunya (CUO) referring discomfort: "I have pain in several teeth." The patient was referred to the Master in Endodontics to assess the diagnosis and possible treatment of tooth 3.7 and 4.6. Extraoral, intraoral exams, periapical radiographs, as well as a cone beam computed tomography (CBCT). The diagnosis were symptomatic reversible pulpitis in teeth 3.7 and 4.6.

Prior to performed the indirect pulp capping, old restoration and remaining caries were eliminated. Subsequently, light-cured, resin modified calcium silicate were placed, stimulating the prolonged release of calcium, wich stimulates the formation of hydroxyapatite and regenerates dentine decrease tooth sensitivity and the possibility of pulpal necrosis.

The restoration of tooth 3.7 and 4.6 were performed as direct composite restorations. Finally, a follow-up of 4 months where performed and were totally asymptomatic.

Conclusions

The minimally invasive dentistry is being an alternative in the daily clinical practice giving as an option of treatment the indirect pulp lining, using the strategy of the less invasive techniques developed in the actuality preserving the dental pulp intact.

- Oral Presentation 10

TITLE: Root canal retreatment and restorative aesthetic treatment of 2.1 because of an MTA colour change

AUTHORS: Rodríguez Roca P, Fernández Alonso P, Freire Álvarez-Blázquez M, Varela Patiño P, Martín Biedma B, Castelo Baz P.

Introduction

Internal dental bleaching is a conservative technique that improves the colour changes on teeth that have gone under a root canal treatment. One of the main cause is the material used for the canal obturation. MTA presents excellent properties but has a huge discolouring potential.

Case Report

A 14 year old girl came to the clinic because of a colour change in 2.1. She presented a clinical story of traumatism at the age of 8. A revascularization treatment with MTA was done for preserving the tooth vitality and a class IV reconstruction was done with composite. Because of a change of colour after 6 years she came to the clinic. A pulp necrosis was diagnosed. We got to the MTA and moved it away with a StarX n°3 help under magnification. Biodentine was placed due to the gauging and finished the obturation of the canal with thermoplastic gutapercha leaving it underneath the gingival line and covering it with an autoadhesive flowable composite, preparing it for the bleaching. Three internal bleaching sessions were done with sodium perborate chemically pure. Finally, the final reconstruction was done with A1 composite from the vita guide with a silicone key previously taken. Once finished, the finishing and polishing of the reconstruction was done.

Conclusions

Sodium perborate is a bleaching agent that provides good clinical results when doing an internal bleaching treatment. It is important to highlight that Biodentine is a calcium silicate material indicated for anterior tooth because of the absence of dental colour change when it is used.

- Oral Presentation 11

TITLE: Retreatment of Upper Right First Molar: Using WAMKey

AUTHORS: Nathani T, Glen S, Tomas J, Ruiz X, Abella F.

Introduction

The treatment of apical periodontitis in previously treated teeth with a complete coronal restoration is a challenge for clinicians and requires great knowledge as well as sufficient skills to treat possible unexpected errors.

Case Report

A 45- Year old male patient was referred from the Department of Periodontics to the Department of Endodontics of the International University of Catalonia to evaluate the tooth 1.6 endodontically. After the evaluation of the medical and dental history, the radiographic examination, the intra and extra oral examinations, an asymptomatic apical periodontitis was diagnosed, so an

orthograde retreatment was proposed after the removal of the crown.

The elimination of the coronal restoration was done with the WAMKey system (WAMKey®). The elimination of Gutta-Percha was carried out with the Reciproc Systems (R25 and R40; VDW) and Profile (Dentsply Maillefer®). The entire endodontic procedure was performed under the optical microscope (Zeiss®) and ultrasonics were used to locate the missed Mesio-palatal canal. Calcium hydroxide was placed as an intra-canal medicament for 7 days. The obturation was done with the continuous wave sealing system (Sybronendo®)

Conclusions

The WAMkey system (WAMKey®) offers the possibility of lifting the crown without having to perform the endodontics through it, thus avoiding possible perforations and also allowing the use of the crown as a temporary restoration.

It is essential to diagnose missed canals in the case of retreatment, for this the help of Cone Beam Computed Tomography is always an added value.

- Oral Presentation 12

TITLE: Re-treatment 1.7 and 2.7. 1 visit vs 2 visits

AUTHORS: San Román Farrás V.

Introduction

When we have an apical image in a tooth previously treated endodontically and have leakage, we are presented with the option of do the re-treatment. We know that most of the lesions after the re-treatment of the root canals, have a very good prognosis. Authors in the literature affirm that there are no statistically significant differences between one visit and two visits in the healing of the periapical images.

Case Report

A 37-year-old patient arrived to the clinic with the main complain of presenting a sinus tract in the first quadrant since two years ago. After intraoral radiographs and a CBCT, we could observe an apical image / lesion on the 1.7 and 2.7, and the mesio-palatal canal was also omitted. The treatment plan decided was to perform the re-endodontic treatment of 1.7 and 2.7, and to find the mesio-palatal canal. The tooth 1.7, it was carried out in two visits, placing calcium hydroxide as an intra-canal medicament and removing the cast stump pin. We could observe how the fistula was healing during 2 months. The tooth 2.7 it was carried out during a visit and the post was removed with ultrasounds.

Conclusions

It is important to know that the treatment prognosis in this case is good and follow-ups must be carried out during the time to evaluate the periapical healing.

- Oral Presentation 13

TITLE: Root canal retreatment of an upper first premolar and its subsequent indirect restoration

AUTHORS: *Sabadell Grau A, Doria G, Abella F, Feijoo N, Llaquet M, Durán-Sindreu F.*

Introduction

Nonsurgical root canal retreatment, for many clinicians, is the first treatment option in cases of previous deficient endodontic treatment, when the tooth is restorable. It consists in removing the previous filling material from the root canal system, reinstrument and disinfect it chemomechanically, and finally refill it three-dimensionally to provide the infection by bacteria of the root canals and surrounding tissues.

This kind of treatment has shown a good prognosis, with a high success rate (91-93%) in cases without periapical periodontitis, decreasing a 12% to 20% in cases with periapical lesion.

Case Report

A 44 year-old Caucasian male with a non-contributory medical history visit the Master of Endodontics referred from undergraduate students to assess the 1.4 tooth. After evaluating the case clinically (intraoral examination and sensitivity tests) and radiographically (periapical X-ray, bite-wing X-ray and cone beam computed tomography). We could see clinically a misadjusted restoration and, radiographically we could observe an inadequate root canal filling, although without periapical lesion associated. Because of the coronal leakage we proceed removing the old restoration of 1.4, we do the retreatment with Reciproc® system (VDW, Munich, Germany) and Profile® (Dentsply Sirona), and finally we perform the indirect restoration (overlay) with CERASMART TM.

Conclusions

Coronal leakage is one of the major prognostic factors that leaves to endodontic failure, that with an inadequate root canal filling, it leaves to a noticeable decrease on the prognosis of the treatment.

- Oral Presentation 14

TITLE: Conservative treatment of a compromised second mandibular premolar

AUTHORS: *Fairhurst Minondo S, Abella F.*

Introduction

Teeth with little or no ferrule are often times deemed unrestorable and are scheduled for extraction. Crown lengthening is usually the treatment choice in order to gain ferrule and preserve otherwise hopeless teeth.

However, in areas where bone preservation is a must we are forced to consider other options of treatment such as orthodontic or surgical extrusion. Crown preparation techniques such as the BOPT are technique, are conservative treatment options that will allow us to preserve dental tissue as well as improve soft tissue profiles.

Case Report

A 35 year old female comes to the clinic referred by periodontics for evaluation of restorability of tooth 35. The patient had a chief complaint of “the crown of this tooth fell out over summer after being recemented various times”. The previously treated tooth is asymptomatic with physiological probing and mobility. After complete elimination of radicular caries an endodontic retreatment is performed, a fiber post is cemented and the core is rebuilt. Next, we performed the surgical extrusion by means of an atraumatic luxation, careful repositioning and splinting with an orthodontic wire for a month. At the one month control the patient was asymptomatic, presented physiological mobility and radiographic signs of bone healing. The tooth was prepared following the BOPT technique and a provisional was prepared, cemented and left for four months. At the four months control we could observe physiological mobility, signs of bone healing, and a favourable gingival anatomy at which point the tooth was restored with a zirconium crown.

Conclusions

Endodontic retreatment, surgical extrusion and BOPT crown preparations are conservative techniques that can be used simultaneously to treat and preserve otherwise hopeless teeth.

- Oral Presentation 15

TITLE: Conservative and aesthetic multidisciplinary treatment of a 1.1

AUTHORS: *Chykanovskyy V, Martinez LM, Iturralde J, Poc S, Alonso Ezpeleta O.*

Introduction

The aim of conservative treatment is to cure and preserve teeth and healthy dental tissue avoiding, as far as possible, the most aggressive treatments such as dental extractions.

Case Report

A 21-years-old woman came to the dental practice with pain in 1.1 and not happy with the appearance of it. She said that she had a root canal treatment from 18 months ago, a retreatment at 12 months and apicectomy 6 months ago. Without any medical or family relevant history of interest, she has pain at palpation and percussion in 1.1, and old composite reconstructions. In radiographic diagnosis (supplemented with CBCT), a

radiolucent lesion of 5mm of diameter circumscribed at the apex of the root was observed. The diagnosis of acute apical periodontitis and discoloration of 1.1 was established. The treatment plan chosen was to go ahead with the orthograde re-treatment. Calcium hydroxide was placed as intra-conductive medication between sessions. The apical plug of biodentine and the filling of the rest of the root canal was made with bioceramic cement (Bioroot®) and gutta-percha. As an cosmetic treatment plan, external bleaching of all her teeth was carried out, changing from an A3 to a B1 color according to the Vita Classical® guide. The 1.1 was prepared for lithium disilicate crown color B1 and a retained splint C+ night protection was given to the patient. Reviews were made at 1, 3, 6, 12 and 24 months, with the patient completely asymptomatic.

Conclusions

The prognosis of orthograde retreatment during the first 3-5 years is slightly higher than the prognosis of apical surgery, therefore, we should consider it as the treatment of choice when the root canal treatment fails. In teeth with large restorations and a lot of tooth loss, the most indicated treatment is to use a fully ceramic fixed prosthesis.

CLINICAL CASES OF OPERATIVE DENTISTRY

- Oral Presentation 16

TITLE: Indirect composite veneers. A predictable solution?

AUTHORS: *Henarejos-Domingo V, Aldabbas K, Díez Deustua R, Jané Noblom L.*

Introduction

Esthetics are among the main concerns of all our patients in any kind of treatment. Nowadays, composites allow us to propose to our patients a predictable, conservative, aesthetic, rapid and economic solution; in order to solve some specific cases.

Case Report

In the present case, the diagnosis and treatment plan of diastemas in the lower-anterior sector is described. The patient had feldspathic veneers on the upper-anterior sector and some of them had suffered complications such as fracture or chipping, for this reason it was decided to use microhybrid composite as a restorative material. Due to the heterogeneity of the affected teeth in terms of shape and substrate, it was decided to carry out indirect restorations. A guided preparation was performed with silicone keys, from the diagnostic wax-up, in order to check the space for the stratification; as well as, a well-defined finishing line.

Conclusions

Direct composite resins still present a challenge for the inexpert dentist, in particular, when restoring the interproximal anatomy. In these cases, indirect stratification with composite resin can be an optimal and predictable solution at long-term, for the clinician and the patient.

- Oral Presentation 17

TITLE: Preserving teeth in critical condition by Restorative Dentistry advances

AUTHORS: *Martín Cruces J, Barciela Castro N, Gonzalez Banga C, García García A, Ruíz Piñon M, Castelo Baz, P.*

Introduction

Endodontic treatments are getting evolving during last years. The key factors are a better knowledge of the inner anatomy, the generalization of the microscopy, CBCT and the improvement of the coronal restoration. Nowadays root canal treatment looks for the full tooth integrity. In this matter the development of indirect and semidirect restoration techniques or crown lengthening allow a great advance in this field

As an example we are going to present a case report of a extreme endodontic treatment where he have done a tooth reinplanment, after not achieve success by a con-

ventional root canal sealing and it restoration using a CAD/CAM system (Cerec Densply Sirona).

Case Report

3.6 extraction in an atraumatic way. Bedding preservation. During preservation retro obturation of the teeth is done. Then we place it an suture it. After the proper integration time we finish the endodontic treatment and prepare the tooth. Finally placement of the restoration.

Conclusions

The evolution of endodontic treatments guide us to more complex cases, were technology and knew materials will do more predictable our treatments. The final restoration is a key factor and the CAD/CAM will be a referring in this field.

- Oral Presentation 18

TITLE: Semi-direct composite inlays to treat Non-Carious Cervical Lesions (NCCL)

AUTHORS: *Cueto Gutiérrez M, Sánchez-Ocaña Olay M, Sánchez-Ocaña Olay MB, Cueto Suárez M.*

Introduction

Patients with NCCL are more becoming more frequent. As they affect several pieces and in many cases they are the in posterior areas, their clinical resolution is difficult. We intend with the technique that we expose to make the procedure easier.

Case Report

We expose an adhesive semidirect technique with composites that eases the complex treatment of multiple NCCL.

Conclusions

This technique that we present facilitates the multiple restorations of NCCL with a high degree of speed, reliability and aesthetics, as opposed to the direct technique. It also minimizes the polymerization contraction, which in the direct technique is so unfavorable in the gingival margin.

- Oral Presentation 19

TITLE: External bleaching in the dental discoloration by calcified pulp

AUTHORS: *Espinosa Compañ A.*

Introduction

One of the consequences of dental trauma, mainly in concussion and subluxation injuries are the calcified pulp. The process is slow and progressive due to a tertiary dentin in the pulp chamber and root canal space. It produces a reduced transparency of the crown. The characteristic intrinsic color of the crown is yellowish or

brown-yellowish and it is developed often in upper central incisors of young adults.

Clinically, the vitality pulp test is negative and radiographic evaluation reveals pulp chamber obliteration. We have to consider vital pulp if there aren't signs and symptoms of necrosis.

The different treatment options described for restoring discolored pulpally obliterated teeth to an acceptable color goes from external, internal bleaching, combination of both and partial or full coverage restoration.

Case Report

30 year-old patient comes to our dental office because of a brown-yellowish discoloration on the tooth n°8. She reports dental trauma 20 years ago. The vitality pulp test is negative and the radiographic-CBCT evaluation reveals pulp chamber obliteration and no apical lesion. The treatment goal is to return to the original color with a minimum invasive procedure.

Starting with a combination of in-office and at-home dental bleaching with different concentrations of carbamide peroxide gel and a customized tray. The results were a color change from 4L 2.5 to 1M2. (3D master VITA). No symptomatology described by the patient.

Despite the limitations of the external bleaching, according to the literature, we can observe its effectiveness in intrinsic discolorations due to calcified teeth.

Conclusions

The external bleaching should be considered as first option treatment in calcified teeth by dental trauma because it is a safety, minimally-invasive treatment that does not compromise future restorative treatments.

- Oral Presentation 20

TITLE: Does the occlusal plane inclination affect the aesthetics?

AUTHORS: Noguerol Sicilia B, Espinar Pulgar C, Llena Blasco J, Jané Noblom L.

Introduction

To date, numerous studies have shown how changes in the inclination of the occlusal plane imply variations in the dental occlusal scheme. The aesthetics of the smile can also be affected by changes in the occlusal plane. They also showed that only large changes in this inclination imply appreciable changes in the aesthetics of the smile. The patients considered the inclinations of the occlusal plane between 5 and 15 degrees more attractive, while the inclinations of 0 and 20 degrees were evaluated as less attractive.

Case Report

Through an explanatory clinical case, we will study how changes in the occlusal plane affect the final aesthetics of the smile, highlighting the mistakes made in

the diagnostic study of the case. A methodology to be followed will be proposed to obtain an optimum transmission of the parameters of reference of the patient to the articulator, which allows to design correctly the diagnostic waxing, taking into consideration the inclination of the occlusal plane.

Conclusions

The Camper plane creates an angulation of 10 degrees with the Frankfort plane, coinciding with the angle considered more attractive by patients. Therefore, been able to transmit correctly these parameters to the articulator, will facilitate an optimal design of the diagnostic waxing, avoiding transferring errors to the diagnostic tests.

- Oral Presentation 21

TITLE: "Index technique" As a minimum invasive procedure. Based on a clinical case

AUTHORS: Quintana Casas P, Mazo Figuerola X, Guinovart J, De Ribot J, Jané Noblom L.

Introduction

The development and reliability of adhesive resin composite systems have offered clinicians a further option for the management of tooth-surface loss. Patients with minimum, moderate and severe hard tissue wear can be treated based on the application of minimally invasive adhesive composite restorations for posterior and anterior worn dentition.

Case Report

In the following case, the diagnosis and subsequent treatment of a 28-year-old patient with a history of eating disorder (bulimia) is described. She presents generalized erosions like erosion, although she also presents wear due to abrasion and attrition. It was decided to increase the vertical dimension of occlusion in a minimally invasive way with the use of heated composite by "index technique". The rehabilitation will be carried out aesthetically guided.

Conclusions

The "index technique" has proven to be a fast and conservative technique for the planning and management of complete adhesive rehabilitations in cases of generalized wear.

- Oral Presentation 22

TITLE: Restoration of the posterior sector with Celtra Duo and CAD-CAM system

AUTHORS: Feijoo Pato N, Abella Sans F.

Introduction

CAD-CAM system allows the virtual design of restorations and the use of non-alterable materials during the

preparation. Celtra Duo HT blocks (Degudent, Konstanz, Germany) permit the fabrication of indirect restorations with optimal esthetic results due to its vitreous content amongst other properties. Moreover, this vitreous matrix is reinforced with dissolved Zirconia, giving the material high flexural strength.

The following clinical case shows an endodontic re-treatment performed in a lower first molar and the posterior restorative phase being a direct composite and three overlays with Celtra Duo HT blocks.

Case Report

A 61 year old patient came to the clinic for rehabilitation of the third quadrant. After clinical and radiographic examination we established an asymptomatic apical periodontitis in teeth 3.6 as the diagnosis and we decided to start the root canal retreatment. The desobturation of the canals was performed with the reciprocating system of files Reciproc (VDW, Munich, Germany), and were obturated with gutapercha using continuous wave and Elements Free Obturation System (SybronEndo, Orange, CA)

When deciding the correct restorative treatment we chose to perform a direct composite in tooth 3.4 with composite system Ceram X Universal (Dentsply De-Trey, Konstanz, Germany) and three overlays in teeth 3.5, 3.6 y 3.7. First, we took a digital impresion with CAD/CAM Cerec Omnicam system and we started designing the three overlays. Eventually, the grinding of the Centra Duo HT blocks was performed followed by the cementation of the overlays.

Conclusions

The new CAD-CAM technology is changing the processes of the restorative dentistry. More specifically, Celtra Duo HT blocks allow the fabrication of indirect restorations with high quality esthetic results and increased physical properties.

- Oral Presentation 23

TITLE: Minimal Invasive Treatment for Enamel White Spots

AUTHORS: *Vela Lasagabaster A, Molina García K, Vallés Rodríguez M.*

Introduction

White spots are superficial lesions that can be produced due to different etiologies, from localized hypoplastic enamel to hypocalcifications due to the onset of a cariogenic lesion, without ignoring the lesions caused by fluorosis. These lesions are not, a priori, harmful to the patient (with the exception of an initial lesion due to caries), but they do compromise their aesthetics, especially in cases in which these lesions are located in anterior superior sectors. Therefore, we must seek a treatment

that allows to return the affected aesthetics through a minimal invasive of the dental tissues, in order to achieve an optimal result and with the greatest possible maintenance of healthy structures. These treatments are based on the controlled superficial abrasion of the lesion and its subsequent restoration with resin.

Case Report

Two clinical cases are presented. Both show white lesions of different etiology and depth that receive two different treatments. The first is a young male with several superficial white lesions caused by initial caries. The treatment chosen is the Microabrasion and Resin Infiltration Technique with Icon Etch®. The second case consists of a young male with white lesions due to enamel hypoplasia in both upper centrals. The choice of treatment in this case is the technique of Megabrasion and Restoration of Composite.

Conclusions

White spots represent an aesthetic and technical challenge due to the little amount of affected tissue. The treatment by means of micro / mega abrasion of white lesions allows to restore the aesthetics maintaining healthy dental tissues. A minimally invasive solution that is technically accessible and offers good and predictable results.

- Oral Presentation 24

TITLE: Adhesive Indirect Restorations on Posterior Sector

AUTHORS: *Lorenzo Estévez, S.*

Introduction

Restoring a posterior tooth by means of a direct or indirect technique depends on several factors such as the extension of the lesion, the number of teeth to be treated or the clinicians' abilities. Adhesive indirect restorations offer us a better control of the anatomy and the occlusion as well as a decreasing of the microleakage and an excellent marginal sealing. Moreover, these types of restorations have better physiochemical properties that reinforce the tooth structure.

An adhesive protocol under absolute isolation is mandatory to ensure the success and durability of this technique. Also, a proper luting agent such as a preheated micro-hybrid composite provides an optimal biomechanical behaviour and an adequate viscosity to achieve a successful seating of the restoration.

Case Report

A 33-year-old patient comes to the clinic reporting food impaction during mastication on the first quadrant. We can observe that there are three large direct composite restorations on teeth 1.4-1.5-1.6, with a poor contact point that has caused this situation. None of the restora-

tions present any leakage or secondary decay. The three teeth are vital and asymptomatic.

We decided to perform three indirect composite restorations in order to obtain a better occlusal anatomy and proper contact points.

We cemented the restorations one by one with a pre-heated micro-hybrid composite under absolute isolation to achieve optimal results in terms of biomechanical properties and aesthetics.

Conclusions

In some cases, the choice between restoring a posterior tooth with a direct or indirect technique may be controversial. When serial teeth should be restored, an indirect approach will allow us to achieve an ideal anatomy of the occlusal surfaces and an excellent control of the contact points. Moreover, this procedure reduces the chair time.

- Oral Presentation 25

TITLE: Restoration of endodontically treated teeth: a review of clinical procedures

AUTHORS: *Ramos Aguado I, Jalón Rodríguez V, Villanueva Ortiz A, Poc Sola S, Alonso Espeleta O.*

Introduction

In Endodontics, throughout history, special importance has been given to the apical sealing of the root canals to achieve the success of it, leaving in the background a possible coronal filtration. Nowadays, the coronal seal is as important, if not more than the apical seal. Moreover, it is widely studied that the restoration of endodontically treated teeth plays a fundamental role in the success and predictability of the endodontic treatment.

Based on the current bibliography and clinical experience, our objective is to present a number of cases in order to obtain protocolized guidelines for action, so that they can be used to make decisions about the diagnosis, prognosis and treatment of endodontically treated teeth.

Case Report

Several clinical cases are exposed, in which after the root canal treatment, the tooth is restored with different techniques, either directly or indirectly. The decision of one or another technique implies a previous diagnosis and the assessment of factors that can directly influence the general approach of the restoration, such as: the amount of remaining tooth structure, the periapical and periodontal state and the root morphology. Likewise, a biomechanical and aesthetic evaluation is necessary.

Conclusions

After more than 24 months, the restored teeth with the different treatment options presented continue with functionality in the oral cavity and without clinical or radiographic pathological signs and symptoms.

- Oral Presentation 26

TITLE: Vertical Preparation (BOPT), when and why? Restorative dentistry

AUTHORS: *Alsrouji B, Molina K, Diez R, Jané L.*

Introduction

Aesthetic failures occurring with fixed dental prosthesis (FDP) concerning recession and exposing of the preparation margins is a common finding in our daily dental practice. Increasing tissue thickness and stability of tissues around cervical margins are the main concepts behind the rationale of BOPT. That's one of the reason why there is an increase in the number of clinicians using this technique.

Case Report

In this Communication, 5 main indications of BOPT are presented addressing different reasons of aesthetic failure. Recession, the show of dark tooth behind gingiva, furcation involved teeth, thin biotype, conserving tooth structure when combining crown preparation and crown lengthening, or avoiding periodontal surgeries are discussed with the cases. On the other hand, a case where conventional horizontal preparation is chosen over vertical one.

Conclusions

Understanding the indications of using BOPT and the reasons behind failure in preparation of FDP cases is key in knowing whether vertical preparation of abutments would solve the problem or not. Also understanding the advantages and the benefits that this technique carries helps us in our treatment planning and in preventing unnecessary and more invasive procedures.

- Oral Presentation 27

TITLE: Subgingival/infrabony cusp fractures: surgical-restorative treatment approach

AUTHORS: *Freire Álvarez-Blázquez M, Varela Patiño P, Rodríguez Roca P, Blanco Reboredo C, Martín Biedma B, Castelo Baz P.*

Introduction

Cusp fractures in endodontically treated teeth with large intracoronal restorations lacking cusp coverage are frequent situations in daily clinical practice. When the fracture line exceeds the biological width to an infrabony level, the clinician faces a challenging therapeutic choice: extract or restore?

If the clinician wants to restore the tooth, then surgical extrusion, orthodontic extrusion or a crown lengthening procedure has to be performed prior to the restorative stage.

Case Report

Two cusp fracture cases are shown, both exceeding the biological width to the bone crest level and below it, respectively. A surgical-restorative treatment approach is suggested for both cases.

In the first place, the fracture line is surgically exposed. Immediately after, a vertical preparation is performed, undercuts removed and a polished, smooth and convergent wall is achieved. This will allow maturation and healing of periodontal tissue, avoiding the formation of periodontal pockets and defects.

After a period of tissue maturation, monolithic lithium disilicate crowns were bonded following an adhesive protocol.

Conclusions

More than half of the extractions of endodontically treated teeth are due to a restorative failure. We propose a predictable and reproducible surgical-restorative protocol which allows periodontal repair and restoration of a tooth that would otherwise be doomed to a compromised restorative and periodontal prognosis.

- Oral Presentation 28

TITLE: Cusp coverage on root filled teeth. A case series

AUTHORS: Rodríguez Ramos S, Henrique Forero P, Almendáriz Bandrés L, Poc Sola S, Villanueva Ortiz A.

Introduction

The long-term success of endodontic treatments depends largely on the restorative treatment that is subsequently carried out. Frequently, when we study a tooth with a root canal treatment, we pay attention to quality of apical seal, underestimating the quality of coronal seal. The main indices of failure in survival of endodontically teeth are due to: cusp fractures, coronal fractures, fissures and coronal-root fractures and vertical root fractures, being the restoration an important causal factor. The scientific literature shows how the highest rates of resistance to different dental fractures, corresponds to the teeth that present the reconstructions with cuspid covering, both made directly, and indirectly.

Case Report

Below, is shown a few clinical cases about root canal treatments teeth that have been restored with direct and indirect composite resin reconstructions, covering the cusps.

This kind of reconstruction is a challenge for the professionals: manual skills are necessary, besides a correct knowledge of dental anatomy and of the different restorative materials.

Conclusions

The restoration of endodontics teeth by cuspid covering, either directly or indirectly, provides the tooth with a

balanced distribution of the occlusal, axial and lateral forces to which it is subjected every day, increasing the success and the survival of the teeth.

- Oral Presentation 29

TITLE: Importance of a correct DSD before a Direct Restoration - Clinical Case

AUTHORS: Gonçalves Fernandes L, Rubinat Font S, Cubero Roldan J, Guevara Forero Elena M, Díez Deustua R, Jané Noblom L.

Introduction

The diagnostic and correct planification of the case, taking into considering the ideal proportions, is a key factor in order to obtain an aesthetically pleasing restoration.

Although digital tools such as Digital Smile Design (DSD) have been used for a long time, it is still a very important tool in the planification process. It helps us to know the position and quantity that must be added to each tooth. It also helps to reduce the appearance of errors in each case, such as asymmetries, disharmonies, and incorrect proportions.

Case Report

In this presentation we describe the diagnostic, planification with the use of DSD, and later treatment of closing diastemas with composite in the anterior-superior sector, of a patient sent from orthodontics.

With the use of DSD and playing with the transitional lines of the composite we have been able to solve the challenge that we have had with the different dental proportions in this case.

Conclusions

With the DSD protocol we can do a good planification process as well as allowing us to realize a restorative treatment in less time, using less materials and thus reducing the cost of the restoration.

With this planification we can observe that at the end of the treatment, the DSD has been essential when it comes to the planification process and also at the moment of execution.

- Oral Presentation 30

TITLE: Managing diastemas in anterior teeth with a direct composite

AUTHORS: Falaha M, Markeviciute G, Díez Deustua R, Jané Noblom L.

Introduction

Diastema closure is one of the most demanded treatments in aesthetic dentistry. Ideally, orthodontic treat-

ment must be accomplished to give proper space relationships and good occlusion but in some cases this is not possible and we require restorative intervention. Diagnostic, patient approval and a recipe to obtain good results is mandatory.

Case Report

In this communication, there are three different clinical cases about managing diastema in the anterior teeth with direct composite. Workflow of wax up, mock up, shade selection, material selection and careful stratification followed by finishing and polishing is described for each case. Different techniques are described on how to manage the diastemas using different types of matrices and wedges. Metal and colloid matrices were used in different cases stabilized with wedges or flowable composite.

Conclusions

Esthetic treatment of diastema closure presents a challenge in clinical practice. One of the preferred treatment options for these problems includes resin composite. By following the steps a predictable and good result can be achieved. It offers various advantages since it is a non-invasive, single appointment and very cost-efficient treatment.

- Oral Presentation 31

TITLE: A minimally invasive approach of a patient with dental wear and gummy smile

AUTHORS: Luna Roa M, Faus Matoses V, Faus Matoses I, Faus Llácer VJ.

Introduction

Tooth wear is defined as the loss of tooth substance in the absence of caries and plaque. It is considered pathological when the degree of destruction is excessive or the rate of loss is rapid, causing functional, aesthetic or sensitivity problems. Tooth surface loss can present in various clinical forms with a wide range of etiological factors. Excessive gingival display (EGD), commonly termed gummy smile, is a condition characterized by an overexposure of the maxillary gingiva while smiling. It is distinguished by showing more than 2.5-3 mm.

Case Report

A 32-year-old male with tooth wear was diagnosed in the anterior and posterior region due to an inadequate occlusion guidance, thus a consequent reduction of the occlusal vertical dimension and with the chief complaint of a gummy smile. A comprehensive treatment plan that incorporated an interdisciplinary restorative and surgery approach was carried out in order to ensure a minimally invasive treatment. Mandibular and maxillary molars were restored by direct composite restorations. Due to the case characteristics, minimum thick-

ness feldspathic ceramic veneers were indicated for the four maxillary incisors. The final restorative phase was achieved by checking the restorations for any occlusal interference. Finally lip repositioning procedure was made to correct the gummy smile.

Conclusions

Interdisciplinary treatment is the best option in cases of anterior guidance rehabilitation in which minimal invasiveness is required. In the present case, the functional and aesthetic parameters required by the patients were achieved, thus satisfying his needs. Lip repositioning technique is a simple procedure that offers an excellent alternative to other surgical invasive procedures.

- Oral Presentation 32

TITLE: "Aesthetics digitally"

AUTHORS: Kiseleva K, Germany C, De Ribot J.

Introduction

Nowadays digital technologies are becoming more popular in dentistry. Every treatment step can be planned digitally, the results are less time consuming, more precise and more efficient. Innovative computer-aided design/computer-assisted manufacturing technology expands the digital workflow from restoration planning to fabrication, enables a predictable and reproducible result for dentists. This presentation will show the digital workflow of an aesthetic clinical case.

Case Report

Our clinical case demonstrated that fully digitally produced crowns revealed the feasibility of the process itself. In this presentation will be showed clinical report of digital planning in order to describe more precisely all the steps of workflow. Digital wax up of two anterior crowns was designed prior to print out 3D models to perform the mock-up. Provisionals were milled in purpose to create the proper harmony of gingival margins and guide definitive restorations. In respect to achieve highly aesthetic outcomes, BOPT technic was realised the same day of crown lengthening. Each step is explained as well as all the benefits of CAD/CAM workflow, showing how elaborated new digital technologies in dentistry can simplify some procedures, avoiding lab work, errors.

Conclusions

Depending on the clinical situation, different digital technologies can be used. However, innovative CAD/CAM technology can provide more accurate, faster, highly aesthetic outcomes, avoiding additional steps, furthermore it can improve the prosthetic treatment in less time - consuming technic and more accurate planning. This virtual treatment procedure is beneficial for both the patient and clinician, as it reduces the number of mistakes, the material consumption, the cost.

- Oral Presentation 33

TITLE: “Index Cutback Technique” - A predictable way to “copy-paste” a class IV restoration

AUTHORS: Madeira S, Diez Deustua R, Jané Noblom L.

Introduction

When doing a conventional class IV composite restoration one of the main difficulties we find is the layering management in order to achieve the optimal result in shape and color.

In the middle of a “busy” world our final goal is to offer our patients the best esthetic outcome in an easy, fast and economic way.

Case Report

In this communication we present a case of a 16-years-old patient who came to change her old anterior restoration done some years ago due to a trauma. The “index cutback technique” was used to restore this tooth. A wax-up of the tooth was done in the cast model and a transparent silicone key was created providing the full enamel index that was then cut with a blade along the incised edge to achieve two enamel indexes, one palatal and one buccal. The required amount of wax was then removed from the full wax up through a cutback step and a second transparent silicone key was performed to get the cutback dentin index, which was then used to make the dentin layer, pressing the composite onto the prepared tooth.

Conclusions

The final outcome of a conventional class IV composite stratification depends on the clinician’s skills and can be a real challenge.

Even if it’s not supposed to replace the traditional restorative technique, the “index cutback technique” offers an easier management of the restoration, allowing for the control of the optimal thickness of enamel and dentin as well as the final shape of the tooth, leading to a predictable final result.

- Oral Presentation 34

TITLE: Conservative rehabilitation of tooth wear with aligners and partial restorations

AUTHORS: Ibáñez López L, Faus Matoses V, Faus Matoses I, Faus Llácer VJ.

Introduction

Tooth wear is characterized by the loss of enamel and/or dentin surface due to non-bacterial causes. The etiology of tooth wear is multifactorial. Interdisciplinary

adhesive and orthodontic dentistry is successful in the management of tooth wear and very little invasive.

Case Report

A 44-year-old female patient attended the clinic due to dentine hypersensitivity that increased with chewing and history of pain in the temporomandibular joint treated years before. On examination, dental wear was observed in anterior and posterior sectors, malocclusion, tetracycline staining and compensatory extrusion of some anterior and posterior teeth.

First of all, an orthodontic phase was carried out for the intrusion of the anterior sector, balance of gingival zenith, selective intrusion of the posterior sector and distalization of the upper arch. In this phase transparent aligners and micro-screws were used. The placement of micro-screws had two functions: to distalize the upper arch and selectively intrude the posterior teeth. As a result we achieved, in addition to correct the malocclusion, create space enough for the restoration of the anterior and posterior sector. This avoided the increase of the vertical dimension and therefore any type of condylar movement that could worsen the patient’s joint pathology. Finally, it was restored with posterior composite onlays and feldspathic veneers. The anterior teeth preparation, guided with the mock-up, was minimally invasive thanks to the previous orthodontic treatment.

Conclusions

The interdisciplinary approach between orthodontics and restorative dentistry allowed us to solve the dentine hypersensitivity problems of the patient. We obtained interocclusal space to restore the wear that produced it, without increasing the vertical dimension, which would have increased the risk of the exacerbation of the joint pathology. In addition we had vestibular-lingual space, so the preparation of the teeth was almost non-existent.

- Oral Presentation 35

TITLE: Smile harmonization and periods in interdisciplinary treatment

AUTHORS: Ramírez Murciano B, Faus Matoses V, Faus Matoses I, Faus Llácer VJ.

Introduction

In dental practice, there must be synergy between the different dental disciplines in order to achieve an adequate diagnosis, treatment planning and execution in compromised dental situations.

Case Report

A 61-year-old female patient came to our office complaining about the aesthetics of the fixed partial zirconia denture. Since her smile showed the zeniths, it was proposed to change the bridge, previously improving the conditions of the surrounding tissues, balancing

those zeniths and thus achieving the harmonization of the aesthetic parameters after the placement of the new bridge.

Therefore, the interdisciplinary treatment plan included endodontic retreatment and internal bleaching of 2.2 to obtain a substrate with an ideal color, so that the restoration did not have to opacify an unfavorable color. Subsequently, an orthodontic treatment phase in which transparent aligners were combined with lingual orthodontics, using the latter to perform extrusion movements that are less indicated for transparent aligners. The extrusion was slow, obtaining coronal migration of the 2.2 gingiva. In addition, a connective tissue graft was necessary to create a correct emergence profile of 2.3. In a later step, the gingival tissues were thickened with fixed partial provisional ovoid denture. And finally, a zirconia fixed partial denture was placed, which ceramic was only charged on the vestibular faces.

Conclusions

The integration of the different disciplines led to a satisfactory final aesthetic and functional result.

- Oral Presentation 36

TITLE: Tooth wear and anterior guide: two approaches on interdisciplinary and conservative treatment

AUTHORS: Gormaz-Urrutia V, Faus Matoses V, Faus Matoses I, Faus LLácer VJ.

Introduction

The lack of Interincisal space represents a big challenge when rehabilitating a patient. That is why it is necessary to assess how to approach these cases, and evaluating if the space needed may be obtained only by restorative treatment or from an interdisciplinary treatment, to achieve the most conservative therapy possible.

Case Report

Two male patients came to the clinic. The first one complaining about a progressive wear on his anterior teeth and the other one due to a high sensibility while chewing. In the first one, molar erosions and loss of vertical dimension were noted. In the second patient, an overbite was observed, but no wear in the posterior dentition. Therefore, both cases presented an interocclusal space that caused attrition on anterior teeth which wasn't enough to provide a proper anterior guide. The treatment plan in both cases was a vertical dimension increase and the anterior guide rehabilitation. In the first case (where posterior teeth wear was noted) this was achieved by three treatment phases: Firstly, a restorative phase, placing direct composites on posterior teeth increasing vertical dimension; followed by an orthodontic phase; and a final restorative phase placing feldspathic

veneers on upper incisors. In the second case in contrast with the first one, vertical dimension increase and anterior guide rehabilitation were achieved in two treatment phases: an orthodontic phase to extrude posterior teeth and a consequent vertical dimension increase and a restorative phase consisting in feldspathic veneers in upper incisors.

Conclusions

Interdisciplinary treatment performed by different specialists enables the resolution of complex cases. It is very important to customize each diagnosis and to plan every case individually, as well as the communication between professionals as with the patient. So that satisfactory clinical results can be accomplished.

- Oral Presentation 37

TITLE: How to manage the colour dimensions in indirect restorations in anterior teeth

AUTHORS: Barrigón Benítez G, Ruiz de Gopegui J, Pérez López J, Oteo Calatayud C.

Introduction

In our daily practice, we have to deal with clinical situations with severe dental colour alterations. They may be generalised or localised in one tooth. Generally speaking, the etiology of single colour alterations is due to trauma, with pulpar necrosis and tooth darkening. Multiple treatment options are available; nevertheless, above all, we must try to be the most conservative with dental tissues as possible, and to use all the current tools and knowledge.

Case Report

In the present communication, key factors are outlined to deal successfully with single severe colour alterations in daily practice.

Crucial issues will be presented, through real clinical situations, such as colour dimensions and its clinical implication; the diagnostic wax-up significance and its thickness; the communication with lab technician; the material choice (material thickness, opacity and naturalness; control of value); type of dental preparation (its limits; reduction thickness; enamel preservation; the more the reduction is, the more the colour alteration); and, the use of clinical tools as resin cements versatility or opaquer.

Conclusions

Current dentistry requires obtaining clinical success with minimal invasive techniques in an increasingly demanding society. For this reason, we are expected to be aware of all the newest tools and knowledge. The above factors will guide us in order to manage with more predictability clinical cases with colour alterations in the anterior area.

- Oral Presentation 38

TITLE: White spots treatment: progressive approach

AUTHORS: *Gil Samaniego, A.*

Introduction

In our daily practice, patients come to us seeking to improve the appearance of their smile.

Currently we have techniques that get esthetically satisfactory results while retaining maximum tooth structure, such as teeth whitening, air abrasion and direct composite reconstructions.

In this particular case, the initial diagnosis is very important, as well as control of the patient's expectations.

Case Report

This is a young patient who comes to improve the color of her teeth; the need for orthodontic treatment, to improve occlusion, performing multiple restorations, periodontal treatment and finally the cosmetic treatment.

Focusing on the cosmetic phase (rejected orthodontics and performed and periodontal phase), start for whitening clinic with hydrogen peroxide 38% (Opalescence Boost®, Ultradent), followed by the protocol micro-abrassion and infiltration of resin (Icon Ultradent®).

Finally, it was decided to perform a macroabrasion in areas where the result aren't satisfactory, followed by esthetic composite reconstructions (Filtek Supreme XTE®, 3M) Polishing protocol was performed using the Enamel Plus Shiny®, Micerium.

Conclusions

When we deal with cosmetic treatments, it is very important to get the results that our patient demand, preserving the tooth structure as much as possible. So in this case, I opted for a gradual approach, going from conservative to more invasive.

A difficult aspect to manage this kind of treatment, is to preview the depth of the white spots that the patient had, this being a key factor in choosing this treatment sequence.

Also emphasize the importance of the polishing protocol after the reconstructions, which is able to give a natural appearance to the same.

RESEARCH IN ENDONDONTICS

- Oral Presentation 39

TITLE: Calcium hydroxide removal from immature apex teeth: comparing four irrigation techniques

AUTHORS: Santos Montón G, García López R.

Objectives

The aim of this study was to evaluate the efficacy of four different irrigation techniques in the removal of calcium hydroxide in root canals of teeth with immature apex.

Materials and Methods

Twenty single-rooted teeth with a single canal were selected and immature apices were simulated. They were sectioned longitudinally and then reassembled to introduce calcium hydroxide into them until it was observable through the apical foramen. After 14 days, the samples were divided into 4 experimental groups: positive pressure group, negative pressure group, passive ultrasonic activation group and sonic activation group. The samples were disassembled, and the canal area covered by calcium hydroxide was measured after each irrigation protocol. This measure was subtracted from the total canal area in order to find the amount of calcium hydroxide eliminated. A statistical analysis was performed with this data (ANOVA test with a posteriori tests based on Bonferroni) ($p < 0.05$).

Results

Passive ultrasonic activation and sonic activation groups showed better calcium hydroxide removal compared to positive pressure group ($p < 0.05$). In addition, the passive ultrasonic activation group also showed better removal compared to the negative pressure group ($p > 0.05$). However, there were no significant differences between the passive ultrasonic activation and sonic activation groups ($p > 0.05$), sonic activation and negative pressure ($p > 0.05$) and negative pressure and positive pressure ($p > 0.05$).

Conclusions

None of the irrigation protocols completely removed calcium hydroxide. Passive ultrasonic activation and sonic activation was shown to be more efficient than conventional irrigation using positive pressure.

- Oral Presentation 40

TITLE: Shaping ability of reciproc blue & waveone gold in simulated s-shaped canals

AUTHORS: Amin Y, Faus Matoses V, Alegre Domingo T, Faus Llácer VJ.

Objectives

The aim of this study was to compare the shaping ability of two single file reciprocating systems (Reciproc Blue and WaveOne Gold) in simulated S-shaped canals.

Materials and Methods

Thirty-six S-shaped canals in resin blocks were prepared to an apical diameter of 0.25 using Reciproc Blue R25 (VDW, Munich, Germany) and WaveOne Gold primary (Dentsply Maillefer, Ballaigues, Switzerland). All the resin blocks were checked for patency using a size 10 K-file (Dentsply Maillefer, Ballaigues, Switzerland) and randomly divided into two groups ($n=18$). Composite images were taken pre and post instrumentation using a standard setup, Kaiser Repro Stand RS 2 XA (Kaiser, Buchen, Germany), and superimposed using Adobe Photoshop (San Jose, California, United States). The amount of resin removed by each filing system was measured in AutoCad (San Rafael, California, United States) and analysed. Canal aberrations and preparation times were recorded.

Results

No file fracture was identified in either group. Reciproc Blue showed better centering ability than WaveOne Gold which was statistically analysed using the Post hoc T2 Bonferroni test. The preparation times were measured using the T test, and the chi-square test was used to analyse the incidence of canal aberrations. The significance level was set at $P < 0.05$.

Conclusions

Within the limitations of this study, Reciproc Blue was able to shape S-shaped canals more efficiently and more rapidly while WaveOne Gold generated apical transportation in the majority of the cases.

- Oral Presentation 41

TITLE: Dynamic cyclic fatigue resistance of Protaper Gold and PathMax Pro

AUTHORS: Jorques Zafrilla A, Faus Matoses V, Salvatore S, Ruiz Sánchez C, Faus Llácer VJ.

Objectives

The aim of this study was to compare the cyclic fatigue resistance of Protaper Gold and PathMax Pro files.

Materials and Methods

Eighty files were used for this study, 40 files 25.08 of PathMax Pro and 40 files 25.08 of Protaper Gold. A custom-made device was used for the dynamic cyclic fatigue test. It presented an artificial curved stainless steel canal with a length of 21 mm, a 60° angle of curvature and a radius of 5 mm. Files rotated freely in the canal at a constant speed using a torque-controlled motor. All the instruments were operated with a 3-mm/s axial movement until fracture occurred to simulate the clinical use

of these. The time to failure of the files was recorded in seconds. The number of cycles to failure (NCF) was calculated for each group. Data were statistically analyzed using t-test with the level of significance set at 0.05.

Results

The fatigue life of PathMax Pro was higher (1385.0 ± 846.1 NCF) compared with Protaper Gold (825.0 ± 213.8 NCF). PathMax Pro showed significantly higher number of cycles to failure than Protaper Gold ($p < 0.05$). The variability of NCFs of both groups was significantly different. The group of Protaper Gold files behaved very stable around its average, presenting a quite predictable life time. In contrast, PathMax Pro files oscillated in a very wide time range.

Conclusions

Within the present study limitations, PathMax Pro files had significantly higher cyclic fatigue resistance than Protaper Gold.

- Oral Presentation 42

TITLE: Influence of the endodontic therapy on dentinal micro-crack generation: a micro-CT study

AUTHORS: Miguéns Vila R, Martín Biedma B, Varela Patiño P, De Deus G, Belladonna F, Castelo Baz P.

Objectives

The aim of this study is to evaluate the influence of the rotary instrumentation and root canal system obturation in dentinal micro-crack generation with Micro-CT.

Materials and Methods

12 molars were selected, extracted for periodontal reasons. All samples were decoronated and a previous Micro-CT (Skyscan 1172; Bruker microCT, Kontich, Belgium) scan of all teeth was conducted with high isotropic resolution (6.78µm) at 100kV and 100µA and a 1mm Al filter. All canals were preflared with a #10 K-File (Dentsply Maillefer, Baillagues, Switzerland) followed by a Proglider (Dentsply Maillefer) to create an appropriate glidepath. Root canal instrumentation was done using the ProTaper Gold (Dentsply) system to a final file F2 following manufacturer's instructions. A postinstrumentation Micro-CT scan was done (using the same parameters). Root canal obturation was done using Therafil (Dentsply), Guttaore (Dentsply Tulsa Dental Specialties, Tulsa, OK, USA) and Continuous Wave of Condensation obturation techniques (n=4). A postobturation Micro-CT scan was performed (with the same parameters). All cross-sectional images (n=8826 for each scan group) were screened by 3 previously calibrated examiners to identify the presence or absence of dentinal micro-cracks. Cracks were scored 1; and no dentinal defects were scored 0.

Results

Dentinal micro-cracks were observed in the initial (n=2297, 26%) Micro-CT. 8826 cross-sectional images in each scan were analyzed (total n=26478). In the Micro-CT images after instrumentation and obturation, the same quantity of dentinal micro-cracks is observed (n=2297, 26%) as in the initial scan. Every cross-section image with micro-cracks is the same in each scan group. Therefore, the micro-cracks initially, after instrumentation and after obturation are exactly the same.

Conclusions

Under the limitations of this study, it can be concluded that a correct rotary instrumentation with the ProTaper Gold system and an adequate root canal obturation do not damage root canal walls nor produce dentinal microcracks.

- Oral Presentation 43

TITLE: Precision of two electronic locators in the presence of irrigants. In vitro study

AUTHORS: Bernabé Mora P, Faus Matoses V, Dolz Solsona M, Sauro S, Faus Llácer VJ.

Objectives

The aim of this study in vitro was to evaluate the accuracy of two electronic apex locators Ipex II (NSK Inc., Kanuma, Japan) and Woodpex III (Guilin Woodpecker Medical Instrument Co., Ltd.) after cleaning and shaping the root canals, for determining working length in the presence of different irrigation solutions: 2% chlorhexidine gluconate, 5,25% sodium hypochlorite and 18% ethylenediaminetetraacetic acid.

Materials and Methods

Forty extracted single rooted human teeth were selected. The teeth were sectioned at the cement enamel junction and the actual working lengths were determined by subtracting 0.5 mm from the anatomical root length of the tooth. Next, measurements of the working length were obtained using the electronic apex locators Ipex II and Woodpex III in the presence of the different irrigation solutions. After the collection of the obtained measurements, the statistical analysis was carried out with the SPSS program. The level of significance of the analyzes was established at $p \leq 0.05$.

Results

The data obtained revealed that there were no statistically significant differences between the two electronic apex locators, Ipex II and Woodpex III to establish the working length in 0.5 mm coronal to the greater foramen in dry radicular canals and in the presence of irrigants. Chlorhexidine, sodium hypochlorite and ethylenediaminetetraacetic acid marginally influenced the accuracy of both devices.

Conclusions

The electronic locators of apex Ipex II and Woodpex III can be used safely to determine working length in the presence of several irrigants, being able to obtain precise measurements and clinically satisfactory results in both dry and wet canals.

- Oral Presentation 44

TITLE: Efficiency of protaper gold and reciproc blue in filling material removal

AUTHORS: *Pasarín Linares C, Faus Matoses V, Dolz Solsona M, Faus Llácer VJ.*

Objectives

The objective was to evaluate the efficiency of ProTaper Gold and Reciproc Blue files in guttapercha removal from straight root canals with microcomputed tomography.

Materials and Methods

Fifty-two human extracted teeth were selected. All the procedures were carried out by the same operator under a dental microscope. Teeth were decoronated to a standard root length of 16mm. During initial root canal treatment instrumentation was carried out with rotary system ProTaper Gold until F2 (25/08) file. Root canals were filled with continuous wave of condensation technique. For retreatment, specimens were divided into two groups (n=26). In ProTaper Gold group, teeth were reinstrumented until F4 file (40/06). In Reciproc Blue group, specimens were reinstrumented with R40 file (40/06) Micro-tomography scans were performed before and after retreatment procedures. Volume of remaining filling material after retreatment was registered, as well as total retreatment time (in minutes) and the existence of separated instruments. The hypothesis of normality and the equality of variance were evaluated by using Kolmogorov test and Levene test. In cases of normality between variables t-test was employed. The level of significance was established in $P < 0.05$.

Results

The average remaining filling material in ProTaper Gold group was 4,41% (2,41-5,88%), while in the Reciproc Blue group was 4,18% (2,44-5,91%). The average retreatment time in ProTaper Gold group was $2,40 \pm 1,47$ minutes. In the Reciproc Blue group the average retreatment time was $2,71 \pm 1,47$ minutos.

Conclusions

There are not statistically significant differences between ProTaper Gold and Reciproc Blue groups in terms of filling material removal capacity and average retreatment working time.

RESEARCH IN OPERATIVE DENTISTRY

- Oral Presentation 45

TITLE: Comparison Of The Antibacterial Activity Of Three Restorative Ionomers

AUTHORS: *Leon Rios XA, Flores Barrantes L.*

Objectives

To compare the antibacterial activity of three glass ionomer against *Streptococcus mutans* (ATCC 25175) and *Streptococcus sanguinis* (ATCC 10556).

Materials and Methods

The study was experimental in vitro. The analysis unit consisted of wells with three Ketac Molar®, Fuji II® and Maxxion R® restorative ionomers, which were prepared in compliance with the manufacturer's recommendations and were inserted using the Centrix® system in petri dishes with BHI agar. On the other hand, the antibacterial activity was evaluated by using a vernier to measure the diameter of growth inhibition of the strains tested. The study was conducted in triplicate and the statistical analysis used the ANOVA test to 3 criteria.

Results

Ketac Molar®, Fuji II® and Maxxion R® showed inhibition halos $16.27\text{mm} \pm 1.62$, 11.95 ± 1.51 mm and 12.38 mm ± 2.55 against strains of *Streptococcus mutans* respectively with $p = 0.0001$, which means that there statistically significant difference. Furthermore, inhibition halos Ketac Molar®, Fuji II® and Maxxion R® against *Streptococcus sanguinis* were $10.11\text{mm} \pm 1.42$, $2.34 \pm 13.51\text{mm}$ and $10.83\text{mm} \pm 1.22$ respectively with $p = 0.0008$, demonstrating that there is also significant difference.

Conclusions

The three GIC under evaluation showed halos of growth inhibition of cariogenic bacteria assayed. However, Ketac Molar® had greater antibacterial activity against *Streptococcus mutans*; while the Fuji II® had greater antibacterial activity against *Streptococcus sanguinis*.

- Oral Presentation 46

TITLE: Evaluation protocol of at home dental bleaching using polarized photography

AUTHORS: *Aguirre Armendariz I, Rey Duro F, Souza Andrade J.*

Objectives

The aim of this work is to explore the possibilities of a new digital polarized photography protocol, that gives us an exact and objective information about color change (in terms of value and chroma) after a dental bleaching treatment.

Materials and Methods

A total of 16 volunteer patients were enrolled in this study and a 16% Carbamide Peroxide gel was used for the bleaching treatment.

For the color evaluation, a photograph protocol was developed and the technic was standardized using a neutral grey card. Pictures were taken using a polarized filter, before treatment and 15 days after finishing it, and color measurements were done working in the Cie Lab 1976 color space.

Results

The results after the color evaluation using digital software (Adobe Photoshop) for the photographic analysis are presented, and the evolution from the initial situation to the end of the treatment can be seen in terms of value and chromacity.

Conclusions

The described protocol for the color evaluation after dental bleaching seems to be an alternative to the rest of the techniques and methods described in literature, providing a more objective and precise information about color changes.

- Oral Presentation 47

TITLE: Cytotoxicity of materials used in dental restoration

AUTHORS: *Arroyo Bote S, Caral Sánchez N.*

Objectives

To determine the cytotoxicity, expressed in percentage of dead fibroblasts, caused by restorative materials

Materials and Methods

We carried out an in vitro study about the cytotoxicity on fibroblasts caused by orthophosphoric acid (Syringe Gel Conditioner, Dentsply, Germany), adhesive (Prime & Bond Active, Dentsply, Germany), MTA (ProRoot MTA, Dentsply, Germany), light-cured glass ionomer (Ionobond, Voco, Germany), fluid composite (SDR, Dentsply, Germany) and universal composite (Ceram X, Dentsply, Germany). 3x8 mm discs of each material were prepared. The acid and the adhesive were applied on dentine discs. The dentine discs and materials discs were sterilized and immersed in 3ml of DMEM + ATB for 7 days. The fibroblasts were seeded in 24 wells plates until confluence and then the culture medium was changed to 0.75 ml of DMEM culture medium and 0.75 ml of culture medium with the filtrate of each biomaterial. Cell viability was recorded by flow cytometry after 3 and 7 days. The Kruskal-Wallis test was used to evaluate comparisons between the groups and the Wilcoxon signed rank test to evaluate differences in the follow-up periods.

Results

The difference in viability between groups was significant ($p < 0.05$). The viability of fibroblasts for the Composite, Fluid Composite and Glass Ionomer groups decreased slightly from day 3 to day 7. On the contrary, the cell viability for MTA group was slightly increased from day 3 to day 7. The fibroblasts viability for the orthophosphoric acid group decreased from 73.83% to 43.46% from day 3 to 7 and for the adhesive group decreased from 104.77% to 86.15%.

Conclusions

Statistically significant differences of cell viability were observed between materials, however, no statistically significant differences were found in any treatment group between day 3 and 7.

- Oral Presentation 48

TITLE: Chromatic characterization of enamic multilayer

AUTHORS: *Espinar Pulgar C, Pérez Gómez M^a del M, Lucena Martín C, Della Bona A, Pulgar Encinas R.*

Objectives

Enamic Multilayer (EM) is a hybrid CAD/CAM material (ceramic infiltrated with a polymeric matrix) constituted by six layers in chromatic gradient from cervical to incisal in order to resemble/mimic the natural tooth color gradient. The objective of this study was to chromatically characterize EM.

Materials and Methods

EM was laminated dividing each chromatic layer (1M1HT, 1M2HT, 2M2HT, 3M2HT, 4M2HT) of 1x12x14mm in size. Spectral reflectance was measured in every 2mm between 380 and 780 nm, over a black background by means of a spectroradiometer PR-607 (illuminating/measuring geometry CIE 45°/0°; focus measuring diameter of 0.125°) at the centre of each of the 6 multi-colors layers from cervical to incisal. The CIE L*a*b* color coordinates, the chroma (C*) and the angle of tone (ho) were calculated using the CIE 2° Standard Observer and the D65 illuminant. Interlayer color differences (ΔE) were calculated/evaluated using CIELAB (ΔE^*ab) and CIEDE2000 ($\Delta E00$) color difference equations, and their respective 50:50% acceptability (AT) and perceptibility (PT) thresholds: $PT00=0.8$ and $AT00=1.8$ using CIEDE2000 equation, and $PTab=1.2$ and $ATab=2.7$, using CIELAB.

Results

b* and C* values of the layers in each EC sample were statistically different ($p > 0.05$), increasing in incisocervical direction. However, no statistically significant differences were found in L*, a* and ho. The color dif-

ference intervals between layers in CIEDE 2000 were 0.31-6.67, 0.45-6.09, 0.58-6.79, 1.24-7.90, 1.26-7.34 for 1M1, 1M2, 2M2, 3M2 and 4M2, respectively. Overall, the inter-layer color differences are larger than the perceptibility threshold using both formulas. Lower differences than PT were found exclusively between the fifth and sixth layers in 1M1, 2M2 and 2M2 blocks ($\Delta E00=0.31$, $\Delta E00=0.45$, $\Delta E00=0.56$, respectively).

Conclusions

EM layers are only different in b* coordinate, so they are progressively and visibly more yellowish in incisocervical direction.

- Oral Presentation 49

TITLE: An up to 8-year retrospective study of 364 conventional feldspathic ceramic veneers

AUTHORS: *Ruiz Bell E, Faus Matoses V, Faus Matoses I, Salvatore S, García Cuesta C, Faus Llácer VJ.*

Objectives

The aim of this study was to evaluate the clinical outcome of 364 conventional feldspathic veneers and to analyze the influence of bruxism and the use of occlusal splint.

Materials and Methods

Porcelain restorations (n=364) were placed in 64 patients between January 2009 and December 2013 by two professors of the Master of Restorative Dentistry and Endodontics (Valencia University). The clinical examination determined the presence of failures (fractures and debondings) and the presence of bruxism (with use of occlusal splint or without it). The results were statistically analyzed using the Kaplan-Meier methodology. Statistical significance was set at $p \leq 0.05$.

Results

The mean observation time was 5.2 ± 1.7 years. Forty patients presented a parafunctional habit. This group included: 257 veneers bonded in patients with bruxism activity using splints and 36 veneers in patients with bruxism activity not using splints. There were 7.7% fractures and 1.9% debondings. The estimated cumulative survival rate was 93.7% at 3 years, 91% at 5 years and 87.1% at 8 years. The cumulative survival rate in patients with bruxism not using splints was reduced to 63.9% at 8 years.

Conclusions

Conventional feldspathic porcelain veneers are a predictable treatment option that provides excellent clinical results. Not using occlusal splint influenced significantly, decreasing the time until the appearance of an irreparable problem.

POSTERS OF CLINICAL CASES IN ENDODONTICS

- Poster 1

TITLE: Anatomical anomalies in lower molars “Radix Entomolaris”. About several cases

AUTHORS: *Henrique Forero P, Rodríguez Ramos S, Valencia de Pablo O, Poc Sola S, Alonso Ezpeleta O.*

Introduction

Usually the lower molars have two roots, however, they can sometimes present anatomical variations, such as additional root, which is called “Radix Entomolaris”, if it is located in the distolingual sense and “Radix-Paramolaris” if it is located in mesiobuccal. This anatomical anomaly was described by Carabelli in the year 1884. It is most often related to individuals with Mongoloid features and is common in Asian ethnic groups of Eskimos and American Indians. In the European population, it only oscillates around 4.2%.

Case Report

Three clinical cases are presented, which present an entomolar root. The first clinical case is a 44-year-old woman, who bilaterally presents this anatomic radicular anomaly in teeth 3.6 and 4.6, where only the root canal in 4.6 is necessary, with an evolution of more than 18 months. The second case is a 73-year-old woman who presents this anomaly in tooth 4.6, where does the root canal and restoration, with an evolution of more than 24 months. The third case we present is a 52-year-old man with a tooth 4.6 who underwent the retreatment and who presented the entomolaris root, without obturation, with an evolution to 1 year.

Conclusions

The knowledge of the anatomical variations of the lower molar to the success of the treatment. The obligatory nature of performing two or more angulated diagnostic radiographs and the CBCT are very important tools to “observe” these atypical root anatomies. A modification in the opening of a trapezoidal shape will be necessary to facilitate the location of all the roots.

- Poster 2

TITLE: Treatment in immature teeth: Gutta-percha or MTA?

AUTHORS: *García López R, Serrano Cerdá N, López Tortosa J, Báguena Gómez JC, Rivas Pérez A, Nicolás Silvente AI.*

Introduction

The success of root canal treatment depends on proper bacterial disinfection, conformation of the canal and a three-dimensional hermetic sealing. The most common cause of failure is the lack of canal sealing, being the

first cause in anterior teeth. Nowadays, we try to preserve the apical constriction establishing it as the apical limit of our preparation and filling, however there are cases where there is no apical constriction to facilitate and effective obturation of the canal such as teeth with apical resorption by a chronic apical periodontitis, when the constriction has been lost due to an over-instrumentation of canal, teeth with incomplete formation of the root, and with apical resorption due to trauma. There are several techniques to create this apical barrier from the apical impression with gutta-percha cone to the pulpal revascularization in immature teeth with thin dentinal walls.

Case Report

A: A 42-year-old patient referred for tooth 23 assessment. There is no tooth decay but incisal edge wear, negative vitality, negative percussion and radiological apical image. Diagnosis of pulpal necrosis with chronic apical periodontitis. The treatment was necropulpectomy obturating with the traditional method of apical impression with gutta-percha.

B: 38-year-old patient with abscess in the area of tooth 21. Diagnosis of symptomatic apical periodontitis due to failure of previous canal treatment and retreatment with an MTA-plug.

Conclusions

Nowadays, there are numerous works published with the technique of the apical barrier with MTA in teeth with non vital pulp and open apices, but we can also see that with traditional methods predictable results are achieved

- Poster 3

TITLE: A conservative orthograde approach of large periapical radiolucent lesions after periapical surgery

AUTHORS: *Vallecillo Rivas MC, Conde Pais J, Ge-rez Muñoz MJ, Del Castillo Salmerón R, González López S, San José Vázquez del Rey A.*

Introduction

Treatment approaches to handle large periapical lesions range from non-surgical endodontic therapy with or without endodontic surgery to tooth extraction. During the past few years there has been gradual change in the attitude to surgical treatment of periapical lesions. Some authors support the fact that, with the endodontic infection elimination, the immune system is able to promote repair and lesion might recede by the mechanism of apoptosis similar to the resolution of inflammatory apical pocket cysts without any need surgical intervention to remove cyst epithelium. Previous studies have indicated that nonsurgical root canal treatment should

be done at first which according to reports have shown that 42 to 74% of these lesions healed after root canal treatment. However, there is controversy about the differences between prognosis of conventional root canal treatment of large and small lesions.

Case Report

A patient is referred to the Master of Multidisciplinary and Aesthetic Dentistry presenting a large apical recurrent lesion in the area of upper and lower incisors. The patient underwent periapical surgery in both jaws, without having previously undergone endodontic treatment in these parts. Due to the complexity of the case, it was necessary to resort with different orthograde obturation techniques using gutta-percha and MTA.

Conclusions

A nonsurgical approach should always be adopted as a routine measure in periapical lesions of endodontic origin. Conservative orthograde endodontic therapy demonstrates favorable outcomes. The surgical approach can be adopted for cases where canal is non-negotiable, for cases refractory to nonsurgical management techniques, cases where long-term periodic monitoring of periapical lesions is not feasible and lesions of non-endodontic origin.

- Poster 4

TITLE: Primary Endodontics of Upper 2nd Molar

AUTHORS: *Hasan H, Abella F.*

Introduction

Primary endodontics is the first choice in cases of irreversible pulpitis. It has 83% of success rate and 95 % of survival rate according to Ng.

Case Report

The patient is 67 years old came to the clinic complaining of "severe pain on eating or drinking something cold or hot on the upper right last tooth."

Evaluation of the case using radiographs, CBCT, cold test and intraoral examination. Diagnosis of the 1.7 was Acute Irreversible pulpitis with Normal Periapical tissue. The treatment plan was to do RCT for 1.7 and Overlay for 1.7 using CAD/CAM machines

The procedure took 2 visits because the canals were narrow and required magnification using Zeiss microscope. Instrumentation done using reciproc System after doing the glide path using size 8,10 K files and EDTA, Sodium hypochlorite and Citric acid irrigation. Obturation using thermafil technique because of the curvature of the canals.

Conclusions

For the restoration, composite build up on tooth 1.7, preparation and impression using digital impression.

CAD\CAM machines used for making the overlays. Radiographs taken to check the margins of the restoration.

- Poster 5

TITLE: Endodontic and restorative treatment of a premolar with inflammatory external root resorption.

AUTHORS: *Juárez Avilés G, Rivera Ruíz D, Boquete Castro A, Sierra Lorenzo A, Peña López A.*

Introduction

External resorption in its most typical form may present as inflammatory resorption. It is characterized by the loss of hard dental tissues by the action of odontoclasts, once the stability of the periodontal ligament is altered. This loss can even penetrate to the dentin and may compromise the pulp tissue. It can be present in cervical area, middle third or apical region. It is caused by late inflammatory processes at the cervical level of the root cement, without pulp etiology, which makes its diagnosis complicated. The finding is usually radiographic since the patient may not present symptoms and treatment depends on the prognosis and the extension of the resorption process.

Case Report

A 50-year-old male without relevant medical history came to dental office due to diffuse discomfort in the second quadrant. After radiographic examination, a radiolucent lesion was discovered in the cervical and middle third of the palatine root of the upper left second premolar, with negative response to vitality tests. The tooth presented pain to percussion and probing depth was pathologically augmented, with light mobility.

Diagnosis was inflammatory external root resorption with pulp necrosis and acute apical periodontitis. It was necessary to do a CBCT to establish the diagnosis, treatment and prognosis of the case. Root canal treatment was carried out by orthograde approach and surgical approach to finally seal the defect using a glass ionomer. The patient is monitored and at 6 months after treatment he is asymptomatic and with favorable radiographic signs.

Conclusions

External root resorption is not very frequent, however, it when it appears, it has a difficult management, and sometimes tooth can be lost. It is important for the endodontist to understand and manage periodontal and restorative aspects to treat inflammatory external resorption.

POSTERS OF CLINICAL CASES IN OPERATIVE DENTISTRY

- Poster 6

TITLE: Dental anterior erosion treatment with a minimal invasive alternative

AUTHORS: *Gerez-Muñoz MJ, Rodríguez-Pérez M, Vallecillos Rivas C, Otero Ávila A, Del Castillo Salm-erón R, González López S.*

Introduction

Dental erosion is seen as one the most difficult challenges for dental professionals. A correct diagnosis is crucial to accurate the clinical etiology and get a successful result. Classically, these kind of lesions have been treated with a huge amount of fixed complete restorations, generating failure and premature teeth loss. Currently, adhesive techniques advance and minimal invasion concept suppose a new therapeutic perspective. Due to this fact, we present a dental erosion clinical case, treated with this protocol, with the main goal of keeping as much dental tissue as possible.

Case Report

Our management is based on Vailati technique. An anterior upper mock up is needed. It was made by self-polymerizable resin.

Looking for a proper anterior dental overjet, a selective carving was performed in lower incisors. We gained the space needed to make the palatine composite veneers in upper incisors. This manoeuvre was focused on improving adhesion. We removed sclerotic dentin, keeping remainder enamel.

Eventually, anterior ceramic veneers were made with a minimal invasive intra-enamel technique.

Conclusions

Alternatives related to dental adhesion have established a new dentistry concept based on minimal management, aesthetics and function reestablishment with less complications.

These kind of restorations allow operator to work in a rational and predecible way, simplifying and correcting possible mistakes that appear during maintenance phase.

However, going through these type of treatments suppose some limitations. They require previous multi-disciplinary dentist experience, thorough planning and specific formation in this area.

- Poster 7

TITLE: Enamel polishing protocol after orthodontics. A case report

AUTHORS: *Martínez Pena A, Alonso Fuente M, Rey Duro F, Souza Andrade J.*

Introduction

Dental enamel after orthodontic treatment must have the same texture and roughness conditions as before the treatment. However, it is unavoidable not to affect it, so the use of suitable instruments is sought to avoid or minimize these damages.

Case Report

The clinical case presented aims to propose a protocol for polishing the enamel once the brackets are removed. To determine the ideal protocol, we carried out an in vitro experiment with maximum magnification photography and scanning electron microscopy of the vestibular surface of the enamel, where we compared the initial and final state of the enamel with 6 different types of polishing protocol in 6 premolars extracted for orthodontic reasons. and / or periodontals: 1) Arkansas burn in high speed (Shofu, San Marcos, United States); 2) Tungsten carbide bur in low speed (Komet, Lemgo, Germany) and light brown sof-lex discs (3MTM Sof-LexTM, Minnesota, United States) 3) Tungsten carbide bur in low speed (Komet) and enhance finishing cups (Dentsply, York, Pennsylvania, United States); 4) Tungsten carbide bur in high speed (Komet, Lemgo, Germany) and light brown sof-lex discs (3MTM); 5) Tungsten carbide bur in high speed (Komet) and enhance finishing cups (Dentsply); 6) Tungsten carbide bur in low speed, light brown sof-lex discs (3MTM) and astropol cups system (Ivoclar Vivadent, Lichtenstein, Germany). And then we perform the analysis of the samples.

Conclusions

According to the study conducted, we determined that the polishing system that showed the least variation between the initial and final state of the vestibular surface of the enamel was protocol nº6, in which it was applied in this clinical case.

- Poster 8

TITLE: Restorative planning with resin composite. A case report

AUTHORS: *Tang Docaos IC, Alonso Fuente M, Rey Duro F, Gonzalez García E.*

Introduction

Currently esthetic dentistry is based on the adhesion and preservation of dental tissues. When carrying out a direct restoration of composite resin to solve possible defects and alterations in anterior teeth, it is fundamental to carry out a correct diagnosis guided by a study of photographs and waxed-up model in order to promoting an aesthetic and harmonic results into optic and functional level.

Case Report

A 19-year-old female patient, with Invisalign treatment, come to the UEM Master University Clinic for Expert Course in Restorative Dentistry and aesthetics derived from the Department of Orthodontics. The patient reports not being comfortable with an old restoration in central incisor. After the aesthetic analysis, study of models, photographs and radiographs, we observed a defective composite in 2.1 and alteration of size and dental proportions in anterior teeth. It was decided to make a direct composite veneer in 2.1 and reconstruction of the incisal edge of 2.2 with aesthetic composites.

Conclusions

The restorations were made using a bilaminar layering technique and photographs were taken with a polarized filter in order to obtain more information regarding the color of the teeth to be restored.

The final result was satisfactory since it was possible to reach the aesthetic and functional needs of the patient.

- Poster 9

TITLE: Bopt preparation and ceramic veneer in the upper anterior sector. A case report

AUTHORS: Concha Jerónimo AM, Rosel Gallardo EM, Castillo Salmerón R, González López S, Muñoz Puerto A, Hernández Sánchez MJ.

Introduction

The BOPT technique can help us to reshape the gingival architecture, managing the healing and obtaining an adequate coronal proportion, gingival harmony with possible thickening and migration from the periodontium to coronal.

A multidisciplinary treatment, combined with minimally invasive techniques such as porcelain veneers, can be an appropriate option to obtain anatomical and color modifications, thus obtaining aesthetics and naturalness in the anterior sector without the need for surgical techniques.

Case Report

A 44-year-old woman, with no relevant general history, went to the MOME clinic (Master's Degree in Multidisciplinary Aesthetic Dentistry) demanding to modify an old metal-ceramic crown that did not meet her aesthetic requirements.

In the clinical study, the dental piece 21 was made with a metal-ceramic crown of unsuitable proportions and color, as well as the gray appearance at the gingival edge of the crown, giving an unattractive result. Regarding the radiological study, it presents an endodontics with good apical seal and absence of radiolucent apical images or clinical symptoms.

The right central incisor presented great reconstructions, good periodontal health, and positive vitality.

As for the soft tissues, it does not present a good gingival harmony, therefore, it was planned performing a BOPT preparation in 21 to modify the position of the gingival margins by the handling of the provisionals.

Once the objective was achieved, a lithium disilicate crown was made with a new amelocementary line that allowed us to keep the soft tissues in the position obtained with the provisional ones, and a veneer of the same material in the 11, obtaining harmony with regards to proportions, color and gingival margins.

Conclusions

The combination of minimally invasive and BOPT techniques for soft tissue management does allow us to obtain highly aesthetic results.

- Poster 10

TITLE: Infiltrative resin technique for treating white spots

AUTHORS: López-Cózar Machado D, Pozo Fernández A, Rodríguez Pérez M, Costas Soto A, Hernández Sánchez MJ, González López S.

Introduction

The appearance of white spots on teeth may be due to bacteria or a condition of hypomaturation and hypocalcification enamel. The treatment approach will depend on the size and depth of the lesion and must be determined by using some tests such as transillumination for correct diagnosis.

Case Report

Female patient, 25 years old who comes to the Masters in Multidisciplinary Aesthetic Dentistry at the University of Granada demanding aesthetic treatment in the upper front jaw. The patient presents white spot lesions from 14 to 24 since eruption with no cavity associated. After performing the appropriate diagnostic tests and having determined the depth of each lesion, we design a treatment plan regarding the enamel structure. In first instance we treated the spots by applying low viscosity resin ICON® (DMG America). Infiltration of this resin reduced the opacity by modifying the optical properties of the enamel so its refraction is increased. The product comprised three consecutive syringes (Icon-ETCH®, Icon-dry® and Icon-infiltrant®), one for each step which are applied in one session. White spots with little enamel affected in depth disappeared completely, however the results were not so good for those where the degree of enamel affectation was higher. After a control period, we decided to eliminate persisted spots by stratification of microhybrid composite Amaris®.

Conclusions

Infiltrative ICON® type resins prove to be a simple and minimally invasive treatment option for treating white spot lesions. However, it is essential to make a differential diagnosis and establish the extent of the injury to obtain satisfactory results.

- Poster 11

TITLE: Custom rings in class II restorations

AUTHORS: *Espejo Blanco M, Rosel Gallardo EM, Del Castillo Salmerón R, López-Cózar Machado D, González López S, Costas Soto A.*

Introduction

The custom rings technique was described by Jordi Manauta and collaborators (2013), the aim of this study is to restore an adequate proximal contact point in class II cavities, copying natural and healthy dental structures. This technique uses simple materials that can be found easily in the practice, such as wedges, preformed metal matrix bands and rings.

Case Report

A 43-year-old male patient come to the dental practice requesting a high aesthetic rehabilitation treatment. After the clinical evaluation, in the first phase of the treatment, a proximal caries was found and eliminated in mesial of 16. The restoration was performed using the custom ring technique. This procedure consists on the modification of the ring by taking a previous impression with a light-curing material of the proximal area of the tooth to be restored. After carrying out the cavitory preparation, the matrix was placed, which was stabilized with a wedge and the customized ring. This method makes possible to adapt the matrix in an anatomical and individualized way, obtaining a perfectly sealed proximal reconstruction, taking advantage of preoperative anatomy of healthy structures.

Conclusions

This technique has advantages such as a better stabilization of the matrix, what leads to an appropriate reproduction of the proximal contour of the restoration, showing satisfactory results. It is also important to emphasize that it is an easily reproducible procedure in which simple and common materials are used.

- Poster 12

TITLE: Indirect CAD-CAM restorations in the posterior sector. about a case

AUTHORS: *Hernández Sánchez MJ, González Villafraña P, Muñoz Puerto AB, Concha Jerónimo AM, González López S, Del Castillo Salmerón R.*

Introduction

The development of adhesive systems and the evolution that restorative materials have experienced, have influenced the way we face the restoration of posterior teeth with great destruction.

Thanks to the new concepts of dental preparation, which respect the maximum substrate, and the choice of hybrid materials, whose mechanical properties are similar to those of the tooth, we can restore endodontically-treated posterior teeth with great loss of structure avoiding the use of posts and crowns of total coverage, which supposes a treatment option much more conservative, obtaining an optimum sealing of the restoration and returning both the function and the aesthetics.

Case Report

A 21-year-old patient who attended the master's degree in multidisciplinary aesthetic dentistry with symptoms of acute pulpitis in the upper left area.

On clinical examination, we observed mesial caries 2.6 with pulpal involvement, which we confirmed with the radiograph, where we see radiolucent lesion.

After establishing the diagnosis and treatment plan, we performed the endodontics and posterior indirect adhesive restoration with CAD / CAM system. We opted for an indirect restoration of the overlay type, because the walls have a thickness less than 3 mm.

To facilitate dental preparation, we raise margins and perform build-up with SonicFill™ (Kerr Dental). The carving was carried out following the principles of indirect restorations adhesive preparation.

We designed the restoration virtually with the CEREC system (Sirona) milling a block of VITA ENAMIC® (VITA Zahnfabrik); ceramic infiltrated with polymer that provides an adequate modulus of elasticity, as well as an acceptable aesthetic and high adhesive capacity.

Conclusions

Indirect adhesive restorations with injected CAD-CAM resin ceramics in the posterior sector, allow them to be more conservative with the dental remnant. They provide excellent mechanical properties and optimal clinical results in the medium and long term.

- Poster 13

TITLE: Deep Margin Elevation - An Extreme Clinical Case

AUTHORS: *Cardoso dos Reis R.*

Introduction

Because of the patient's requests, or because, as professionals we are conservative, we make every effort to save a tooth that is bound to fail.

Crown lengthening and deep margin elevation are two techniques that work towards the same goal: to expose

healthy tooth structure so it is possible to repair the tooth.

Deep Margin Elevation is less invasive, but very technique-sensitive, requiring a perfect isolation, so difficult in extreme cases.

Crown lengthening requires surgery and has anatomic limitations, but makes possible achieving a correct biological width.

Case Report

This clinical case is an extreme example of those teeth we do all we can to save, besides the contra-indications and complications.

This tooth (16) had a root canal re-treatment, and fracture of the palatal, mesial and distal walls. The canals were well sealed.

It was purposed extraction and implant, but denied.

So the option was: crown lengthening, build up and crown.

Crown Lengthening

During the surgery it was noticed a line of fracture in the mesial wall of the root and a resorption of the bone. Even though, we continued with our plan and tried a build-up restoration at the same appointment, unsuccessful, for the impossibility of isolation.

Deep Margin Elevation

4 weeks later I tried again to build-up with a proper isolation, and this time I succeeded.

It was only possible because I used the two matrices technique with one “banana” matrix.

Conclusions

There are cases where we push to the limit the possibilities of saving a tooth. This kind of work is really time consuming and a really big effort to the clinician and the patient, so both must be aware of the difficulties ahead.

Only time will dictate the result of this treatment.

- Poster 14

TITLE: “FuncSthetic” stabilization of occlusion before anterior veneers

AUTHORS: *Muharam Zh, Asturias P, Díez Deustua R, Jané Noblom L.*

Introduction

Function and esthetics are the two main pillars for every treatment plan, esthetics without function and occlusion can be a catastrophe for the patient in the long term and all the treatment that we have provided can fail due to a simple problem in the occlusion, on the other hand function without esthetics can be rejected by the patients taking into account that patients see esthetics more than they notice function and occlusion, the best option always is providing a treatment plan that includes both es-

thetics and function, in order to make the patient happy and protect the restoration we have provided.

Case Report

In this particular case of a young female patient we can illustrate this type of a treatment plan, where the patient initially had an edge to edge bite in the anterior sector along with prematurity in the posterior occlusion preventing the repositioning of the jaws in centric relation, our patient was also lacking anterior guidance because of lack of contact of most of the anterior teeth; the chief complaint was to restore the anterior teeth to obtain maximum esthetics and to have a better smile than the one she had before.

Unless we fix the occlusion and functional problem we would be unable to move to the esthetic restoration because of the prognosis of these restoration in the long term, the treatment plan was to make an occlusal adjustment to remove prematurities, providing an anterior guidance to prevent wear in the posterior teeth and to guide the occlusion, then we proceed to the anterior ceramic restorations

Conclusions

Diagnosis is the major key for the success of any treatment plan in the medical field, esthetic and function should be considered in conjugation and never individually to reach perfection with the treatment we provide, our treatment should not be temporary, the long-term prognosis and future planification is another significant part of our restorations.

- Poster 15

TITLE: Anterior feldspathic veneer: Protocol and photographic analysis. A case report

AUTHORS: *Rendón-Luna Lacave T, González García E, Souza Andrade J, Rey Duro F.*

Introduction

Currently, restorative unitary treatments still remain as a challenge for dentists. A precise diagnosis and a thorough planification –as well as an adequate communication between the dentist-technician- allow us to achieve a successful aesthetic result in our treatment.

Case Report

We present a case report of a patient that came to the esthetic department of the European University after finishing orthodontic treatment. A complete esthetic study was done, including a photographic, stone cast, radiographic and periodontal analysis. The diagnostic was a microdontic tooth 1.2 and slight gingival margin asymmetry. It was proposed to improve the gingival architecture and to correct the proportion and size of the tooth by means of a feldspathic ceramic veneer. Due to the complexity in the communication with the labora-

tory in these situations, exhaustive photographic analysis – with and without a polarized filter – was carried out relying on the Vita Classic color guide. In order to obtain a satisfactory final result, this analysis was done before the preparation and during the try-in.

Conclusions

Polarized photography allows us to eliminate light reflections of the dental surface, which can modify our perception of the color. In order to obtain a successful result, a good and clear communication with the laboratory is mandatory. A photographic communication protocol with the technician is proposed in order to obtain the correct final color.

- Poster 16

TITLE: Indirect restorations in posterior teeth: a case report

AUTHORS: *Quijada López S, Miguéns Vila R, Bahillo Varela J, Martín Biedma B, Varela Patiño P, Castelo Baz P.*

Introduction

The introduction of new adhesive systems and new materials has supposed a change in the present clinical protocols. The use of indirect composite restorations is becoming more common when the dental destruction is extensive. The advantage of the indirect technique is the decrease of the tension suffered by the walls during the light curing, jeopardizing the adhesive interphase which generates problems like marginal filtration or structural stress. Due to all this, it is important to know what the indications are and the correct preparation for each clinical situation. Depending on the amount of tissue lost and the occlusal characteristics, there are different cavitory designs (inlay, onlay, overlay, venneroverlay and endocrown).

Case Report

11-year-old male with apical periodontitis in 4.6 with fistulous tract and great apical injury by pulp necrosis. He has a large distoclusal direct composite restoration poorly adapted. Canal treatment is done and due to its poor remaining dental structure and the patient's young age we choose to overlay composite restoration.

Conclusions

The composite restorations are a clear option in the present restorative therapy. Its use lets us be conservative, maintaining the aesthetics and improving the biomechanical behaviour of the tooth, since it allows a extraoral light curing decreasing the contraction, thus ensuring a good function and long-term durability.

- Poster 17

TITLE: Recovering a smile with lithium disilicate

AUTHORS: *Riveiro Rodríguez H, Meizoso Vázquez E, Tarazón Visús I, Castelo Baz P, Freire Álvarez-Blázquez M, Rodríguez Roca P.*

Introduction

Aesthetic is becoming one of the most important demands when speaking about any dental treatment.

Case Report

In this case report we are going to show the case of a 40 year-old-patient who came to our clinic because he was not satisfied with his smiling aesthetics. In clinical exploration we found: old overfilled composite veneers with margin filtration on teeth 13, 12 and 11; a three-unit porcelain-metal bridge on teeth 21, 22, 23 with improper color matching. The gum aesthetic was also incorrect, with large gingival recessions on 11, 21 and 23. To achieve a proper planification of the case, a diagnostic wax-up was made in order to set the base to the construction of the mock-up in patient's mouth.

To the recovery of the suitable gingival architecture, a coronally advanced flap with a free connective tissue graft was performed. The healing of the soft tissues was guided by a resin provisional bridge. The provisional was built based on the diagnostic wax-up. Teeth 1.3, 1.2 and 1.1 were restored with lithium silicate veneers to correct shape, position and color. On teeth 21 and 23 vertical preparation crowns made of lithium disilicate were placed. In the absence of 22 a single-tooth implant was placed restored with a luted lithium disilicate Crown.

Conclusions

This case highlights are the satisfactory results achieved when a multidisciplinary working team follows an exhaustive planification of the treatment plan. Diagnostic wax-up allows the clinician to know which would be the ideal final situation before starting the treatment. The use of a mock-up facilitates the communication between the dentist and the patient, especially when an aesthetic rehabilitation as the one described in this report is performed.

- Poster 18

TITLE: Anterior esthetic predictability: adhesion with lithium disilicate. A case report

AUTHORS: *Vidal Ponsoda C, Rey Duro F, Alonso Fuente M, Souza Andrade J.*

Introduction

The long-term clinical behavior of adhesive aesthetic restorations remains a challenge in restorative dentistry. Therefore, it is important to develop an adequate protocol that allows optimizing the result, both aesthetic and functional.

Case Report

This clinical case concerns a 35-five-year-old woman without any clinical background who attended to our office with pain in tooth 2.1. After the clinical, periodontal and radiological examination, it was observed the presence of a root fissure in the apical third with endo-perio lesion and a 10mm probing depth in vestibular, positive percussion and palpation. The treatment carried out was the extraction of the piece 2.1 and the placement of it by means of an immediate implant. Once the implant was osseointegrated and in the phase of provisional teeth, whitening was performed. For the rehabilitation of the anterior-superior sector, we chose the placement of a lithium disilicate ceramic pillar combined with a lithium disilicate ceramic facet in implant 2.1, a lithium disilicate ceramic facet in teeth 1.1 and a direct composite resin facet in teeth 2.2.

Conclusions

Throughout this clinical case, we propose with this clinical case to describe a predictable protocol regarding color choice and adhesion of indirect lithium disilicate restorations.

- Poster 19

TITLE: Bonded indirect restoration (onlay) in an endodontically treated molar

AUTHORS: *Pérez-Soba Treviño M, Rodríguez Roca P, Freire Álvarez-Blázquez M, Varela Patiño P, Bahillo Varela J, Castelo Baz P.*

Introduction

Endodontically treated teeth are more prone to fracture than vital teeth due to the loss of dental structure during the tooth preparation and the extension of the previous decay. Traditionally, full-crown coverage would be recommended, however, more sacrifice of hard tissue is required. Thank you to the improvements in dental adhesion, in some occasions, full-crowns may be replaced by bonded restorations that allow cuspal coverage being less invasive.

Case Report

Posterior molar (2.6) of a woman of 40 years old has a root canal treatment and needs restoration. We decided to restore with a resin indirect bonded restoration (onlay). We make the cavity preparation removing all the caries and enamel without support. Once the tooth is isolated, a metallic automatrix and interproximal

wedges are placed. The cavity is etched, and an adhesive system is applied in order to place a thin layer of resin composite covering the dentin (immediate dentin sealing) and elevating deep margins, so as to achieve an ideal geometry of the cavity being as conservative as possible. Enamel margins are finished and a 2-step silicone impression is made and sent to the laboratory. Adaptation of the laboratory-made restoration is checked on the die cast model and on the tooth. We place the rubber dam and prepare on the one hand the restoration (etching, bonding without curing and protecting it from exposure to light), and on the other hand the tooth cavity (primer if exposed dentin, and bonding without curing). An adequate amount of preheated composite is inserted into the cavity and the restoration is fixed in place manually applying pressure on the occlusal surface. Resin excesses are removed with a spatula and superfloss before a short light cure. Finally light cure 60 seconds and check and adjust occlusion.

Conclusions

Indirect resin restorations are a reliable and predictable alternative for the treatment of widely affected non-vital teeth.

- Poster 20

TITLE: Composite veneer maintenance protocol – Clinical case

AUTHORS: *Del Olmo Cabestré B, Díez Deustua R, Jané Noblom L.*

Introduction

The evolution that direct restorative materials have gone through in the last years has allowed many patients to receive treatments that can be aesthetic, conservative and economic. The long-term success of these depends on several factors, among which is a personalized maintenance in every case.

Case Report

In the present case, we will describe a sequence for the maintenance of direct composite veneers from 1.2 to 2.2 performed the previous year. The aim is to develop a personalized maintenance guide based on different factors (such as patient habits) that can be extrapolated to more similar cases.

Conclusions

The predictability of direct restorative treatments of the anterior sector will depend on our ability to individualize each case. Knowing how to set controls and maintenance in order to avoid possible stains and misfittings is essential for the durability and beauty of our treatments

- Poster 21

TITLE: Management of spaces in the anterior maxillary area with direct composites

AUTHORS: *Gutiérrez Lopez A, Nassiri Nacer A.*

Introduction

The success of any dental treatment depends of a good diagnosis, treatment plan and clinic and laboratory procedures. These clinical cases describes a diagnosis based in a protocol of conservative preparations in anterior teeth for adhesion through direct composites.

Case Report

Several factors including anomalies in shape, size, color and position of the teeth may interfere in the esthetic of the smile. In these clinical cases are described the technique step by step in two different clinical cases which was used to restore both lateral incisors, one of then peg-shaped tooth and a diastema clousure which usually follows the peg-shaped as a consequence tooth defect due to the distal displacement of the central incisor. The restorations were formed with a minimal preparation in the case of diastema clousure and without tooth reduction in peg-shaped tooth to harmonize the esthetic of the smile of a young 17 years old guy and a 20 years old girl with direct composite restoration with predictables and satisfactory results either for patient either for clinician.

Conclusions

The success obtained with this kind of protocol for direct composite restorations show how important is a correct diagnosis and a treatment plan that avoid to obtain predictable results based in minimally invasive dentistry and in the expectations of the patient. being specially focus on the importance of the wax-up and silicon keys.

- Poster 22

TITLE: Restorative management of closure of spaces in multidisciplinary treatments

AUTHORS: *Morelló Vicente A, Jané Chimeno L, Díez Deustua R, Jané Noblom L.*

Introduction

Performing aesthetic treatments is part of our day to day and increasingly important. In this kind of treatment, is not only the part of the operator that rehabilitates, but multidisciplinary dentistry is a key and totally necessary part to carry out our treatments. Communication is essential, so the information of interest about the desired movements was moved for the subsequent rehabilitation of the case.

Case Report

The following communication shows how the closure of spaces in a patient is managed after orthodontic treatment and the management of soft tissues by connective tissue grafts done by perio department. The closure of diastemas was performed in the union by means of a bilateral approach in both upper quadrants using direct composite, providing a natural aspect with both color and dimensions in order to achieve a functional and aesthetic integration.

Conclusions

The closure of diastemas with composite is presented as a predictable treatment with aesthetic results and easy to make corrections and reparations.

- Poster 23

TITLE: External bleaching of calcified teeth: a case report

AUTHORS: *Belanche Monterde A, García Paniagua L, Usieto González L, Chykanovskyy V.*

Introduction

The treatment of tooth discoloration of the anterior teeth due to trauma and the later total obliteration of the root canal is a problem for the clinician due to the difficulty of performing a successful conservative treatment and possible recurrences. The aim of this poster is to illustrate the eminently conservative treatment of 1.1 and 2.1 with calcium metamorphosis and the evolution of the clinical case.

Case Report

Woman of 20 years old who suffered a dentoalveolar trauma 13 years ago at the level of the 1.1 and 2.1 with axial luxation of the 2.1 and lateral luxation of the 1.1. Without a prior medical or family history. Advanced discoloration was observed in both of the problematic teeth; radiographic examination was performed showing a total obliteration of the root canal and no sign of periapical pathology. Both teeth were asymptomatic. Color analysis was done through color guides and a spectrophotometer SpectroShade™Micro getting a color A3. Home bleaching was performed by night mouth splints using 16% and 10 % carbamide peroxide gel until no improvement is observed in ΔE during two weeks. A 0,5M1 color was got according to the 3D Master Bleachingguide® de Vita guide. A 6, 12 and 24 month's follow-up was done. After twelve months, 1M1 color was observed and after 24 months, the same color was kept without recurrences in the calcified teeth.

Conclusions

The external and well-done bleaching is the less invasive treatment in clinical cases of discoloration of teeth with calcification, it should always be the first option for the treatment of these cases.

- Poster 24

TITLE: Rehabilitation of a patient affected by erosion. A conservative approach

AUTHORS: *Arnandis Calot JM, Faus Matoses V, Moreno Aroca M, Dolz M, Martínez Viñarta M, Faus LLácer VJ.*

Introduction

Tooth erosion is defined as a progressive loss of dental structure due to intrinsic or extrinsic acids, such as gastric or dietetic acids. Frequently these types of lesions are associated with dental attrition signs.

Case Report

A 50-year-old female patient came to the dental clinic. She complained of discomfort caused by generalized sensitivity to thermal changes. Moreover, the patient demanded an aesthetic improvement. Clinical analysis showed generalized wear in posterior teeth. Palatal erosion and reduction in clinical crown height were observed in upper anterior teeth. Furthermore, 1.5 and 1.6 presented metal-ceramic crowns. First, a diagnostic wax-up was performed to determine the vertical dimension increase. The treatment plan consisted in an adhesive aesthetic rehabilitation. Posterior teeth were restored by indirect composite restorations while anterior teeth were restored by indirect composite palatal veneers. Also, metal-ceramic crowns were replaced by other more aesthetic. Finally, aesthetic restorations of anterior teeth with direct microhybrid composites were performed. In the one-year follow up a favourable evolution was observed.

Conclusions

Evolution of adhesive systems allows to restore erosion and attrition lesions with favorable results. No significant clinical differences between the use of direct or indirect composites were observed at one year of evolution.

- Poster 25

TITLE: Complex case resolution of a superior central incisor with high aesthetic demand

AUTHORS: *Caballo L, Da Silva D, Sáenz D, González O, Cura M, Ceballos L.*

Introduction

The restoration of anterior teeth with high aesthetic demands and a defective endodontic treatment entail a challenge for the daily practice as they require a multidisciplinary approach for success to be possible.

Case Report

A 28-year-old male patient attended the URJC's Master of Restorative Dentistry, Aesthetic and Endodontics

requiring a aesthetic solution for tooth 11 after orthodontic treatment. This tooth presented an extensive composite restoration that compromised the aesthetics of the patient due to his gummy smile.

Root canal retreatment was performed as a chronic apical periodontitis was observed in the periapical Rx. An internal whitening was planned to treat the colour alteration of the root dentin that affected the gingival margin, with a posterior placement of a fiberglass post and a total ceramic crown.

In the subsequent controls, the absence of apical healing, confirmed in the CBCT, was determined and a retrograde approach was planned. In addition, a previous supra-osseous perforation at the cervico-buccal level was observed and sealed with composite.

Once the surgery was carried out, the restorative treatment was continued, but a gingival scar was observed that compromised the aesthetic result. It was decided to refer the patient to the Master of Periodontics so that they performed a gingivoplasty. Once the gingival tissues were stabilized, we proceeded to the dental preparation and impressions for a definitive crown of lithium silicate (LiSi Press).

In the controls after 2 years of apical microsurgery, the healing of the lesion is clinically and radiographically verified, as well as the good integration of the prosthetic restoration.

Conclusions

Clinical success in complex cases depends on the correct planning. It may require a multidisciplinary approach and should always be minimally invasive.

POSTERS OF RESEARCH IN ENDODONTICS

- Poster 26

TITLE: Working time in clinic using different endodontic instrumentation techniques

AUTHORS: López Tortosa J, Báguena Gómez JC, Rodríguez Espín AB, García López R, Rivas Pérez A, Chiva García F.

Objectives

To compare the clinical working time used in the bio-mechanical preparation of the root canals using manual techniques, continuous rotary instrumentation techniques and reciprocating rotary systems according to the number of canals.

Materials and Methods

Endodontics were performed in dental clinic by a single professional during the last 24 months were timed (n = 116). The time was measured from the introduction of the first file to the exit of the last file, including the irrigation time of the canals; in the case of a single file, supplementary irrigation was carried out. Previously, the working length was determined using an electronic Raypex 6 Apex (VDW, Cuxhaven, Germany) locator. The three techniques were assigned randomly: a) Weine's step back technique (n = 38): 1 canal: 12; 2 canals: 14; 3-4 canals: 12; b) rotary technique with Protaper Gold (Dentsply maillefer, Ballaigues, Switzerland) system (n = 42): 1 canal: 11; 2 canals: 13; 3-4 canals: 18; and reciprocating rotary technique with Reciproc (VDW, Cuxhaven, Germany) system (n = 36): 1 canal: 10; 2 canals: 9; 3-4 canals: 17. Data were analyzed by means of ANOVA and Tukey's post-hoc test (significance level:0.05).

Results

There were significant differences between the three techniques in teeth of one canal : Step-back 11.40 min. vs. Protaper 6.2 min. ($p < 0,001$); Step-back vs. Reciproc 3.1 min ($p < 0,001$) and Protaper vs.

Reciproc ($p = 0,001$). There were also significant differences in 2-canals: Step-back 18.7 min. vs.

Protaper 10.39 min. ($p < 0,001$); Step-back vs Reciproc 4.3 min ($p < 0,001$) and Protaper vs. Reciproc ($p < 0,001$); and in those with three or more canals): Step-back 33.9 min. vs. Protaper 22.8 min. ($p < 0,001$); Step-back vs. Reciproc 13.1 min. ($p < 0,001$) and Protaper vs. Reciproc ($p < 0,001$).

Conclusions

With the use of rotary or reciprocating instrumentation, the time of clinical work is greatly reduced especially with the new techniques of reciprocating movement of single file.

- Poster 27

TITLE: Importance of Access Opening

AUTHORS: Otero Otero F, Quijada López S, Pérez-Soba Treviño M, Varela Patiño P, Martín Biedma B, Castelo Baz P.

Objectives

Comparison between traditional and conservative endodontic cavity Access, checking their advantages and disadvantages

Materials and Methods

We reviewed 90 access openings of the permanent maxillary first molar, 45 traditional opening access and 45 conservative opening access.

Performed with the help of the microscope, we used a long stemmed round bur and irrigation with 5% NaOCl We compare the presence of coronal interferences by the direction of the K file of 10 through a radiographic analysis.

Results

After the study of the access openings it was found that 43 of the conservative endodontic cavity access presented coronal interferences, while in traditional endodontic cavity access only 20 had coronal interferences.

Conclusions

Traditional endodontic cavity access presents a lower number of coronal interferences than conservative endodontic cavity access, which facilitating their instrumentation and direct access to the apex.

POSTERS OF RESEARCH IN OPERATIVE DENTISTRY

- Poster 28

TITLE: Determination of the efficacy of a combined dental whitening valued by spectrophotometry

AUTHORS: Giraldez I, Peydro M, Montiel-Company JM, Labaig C, Amengual J.

Objectives

To determine the teeth color CIELab space parameters changes after a combined whitening (office and home).

Material and Methods

60 teeth (incisors, canines, upper and lower premolars of 10 patients) were treated by combined dental whitening technique. A first phase, one office bleaching session, with three 10-minute hydrogen peroxide at 37.5% applications. Subsequently, a second phase home bleaching was performed with individual splints and 16% carbamide peroxide, applied 90 minutes per day to achieve teeth color stabilization (mean = 11.4 weeks). The L*, a* and b* color parameters of the CIE-L*a*b* space were taken with a spectrophotometer Vita EasyShade V. The average of the parameters were determined, as well as the ΔE and their confidence intervals to 95%. To determine the existence of differences, after the office whitening and after the combined technique, the non-parametric test of Wilcoxon was used. The means comparison between cases and between the type of tooth was analyzed by the Kruskal Wallis test. The level of significance was set for a P value of <0.05 .

Results

After office whitening technique, ΔE has been 4.50, and after the combined whitening technique, ΔE has been 14.8, showing a significant increase (Wilcoxon $P = 0,000$) between both techniques. After office whitening, there are significant differences (Kruskal wallis $p = 0,019$) between cases, but they aren't at the end of the combined technique treatment (Kruskal wallis $p = 0,197$).

Conclusions

Combined dental whitening (office and home) significantly improves the results obtained just with an office whitening technique.

- Poster 29

TITLE: Shear bond strength of biodentine with two aesthetic restoration materials

AUTHORS: Nicolás Silvente AI, Guirao Bermejo C, Báguena Gómez JC, López Tortosa J, Rodríguez Espín AB, Rivas Pérez A.

Objectives

The aim of this study was to verify the shear bond strength and adhesive failure type between a bioceramic cement and two types of esthetic restorative materials depending on the bonding systems used.

Material and Methods

Six experimental groups were designed ($n = 15$), been group 1: Biodentine® / FuturabondM+ / GrandiosoSO; group 2: Biodentine® / H3PO4/ FuturabondM+ / GrandiosoSO; group 3: Biodentine® / GrandiosoSO; group 4: Biodentine® / FuturabondM+ / AdmiraFusion; group 5: Biodentine® / H3PO4/ FuturabondM+ / AdmiraFusion and group 6: Biodentine® / AdmiraFusion. Where Biodentine® was bonded to the restorative material following the adhesion protocol according to the experimental group. A shear bond strength test was made. The results were evaluated with one-way ANOVA, Tukey test and Games-Howell with a significance level of 95% ($p < 0.05$).

Results

The highest shear bond strength was found in group 3, with an average of 8.02 MPa. Groups 1 and 6 obtained an average of 5.48 and 5.22 MPa respectively. The groups that showed the lowest shear bond strength were groups 2 (2.74 MPa), 4 (2.90 MPa) and 5 (3.80 MPa).

Conclusions

There are no significant differences between the two restoration materials studied. No significant differences were observed between the bonding protocols with total etching and self-etching. Our results showed higher shear bond strength values in groups where no adhesive system was used.

- Poster 30

TITLE: Aesthetic perception of smile in dental patients

AUTHORS: Rodríguez Quintana M, López Tortosa J, Chiva García F, Serrano Cerdá N, García López R, Nicolás Silvente AI.

Objectives

To assess the subjective dentofacial aesthetic perception of the patient vs. the objective analysis by the dentist.

Materials and Methods

A survey was taken of 30 patients from the University Dental Clinic, randomly chosen, about the satisfaction of their smile. A photographic record was taken of each of them for the evaluation of the aesthetics of their smile, assessing the parameters surveyed: color, dental size, shape, position, upper midline, inclination of the occlusal plane, incisive curve, labial corridors, smile line and gingival cenit.

Results

Regarding the patient satisfaction survey, the percentage of patients older than 50 years who did not like their midline, size and shape of their teeth was significantly higher than those younger than 50 ($p = 0.013$, $p = 0.002$). In the other hand, the group of age 26-40 liked the shape of their teeth ($p = 0.007$). The people satisfied with their smile were not satisfied with the shape of their anterior teeth ($p = 0.05$), inclination of the occlusal plane ($p < 0.001$) or with the incisive curve ($p = 0.001$). There were no differences by sex.

With respect to the patient-to-dentist perception relationship, the percentage of people with the incorrect mean line who were satisfied with their mean line was significantly higher than those with a correct mean line ($p = 0.05$). The other relationships were not statistically significant ($p > 0.05$).

Conclusions

Although the sample studied is not representative of the general population, differences were found in the patient-to-dentist perception relationship, although not in all the characteristics studied.

- Poster 31

TITLE: Importance of brushing in restorations with ormoceras in regular red wine drinkers

AUTHORS: *Serrano Cerdá N, Chiva García F, Nicolás Silvente AI, Rodríguez Quintana M, Báguena Gómez JC, López Tortosa J.*

Objectives

To evaluate the effect of brushing and the frequency of consumption of red wine in the staining of an aesthetic material based on ormocers.

Materials and Methods

40 disks (8mmØx2mm) were made from ormocer Admira®(Voco) and randomly assigned to 4 groups (n=10). The specimens were photopolymerized 20" with LED unit (1100 mW/cm²) and stored in artificial saliva at 37°C. The values were measured using a spectrophotometer EasyShade®(Vita) according to the color space CIEL*c*h*. Before starting immersions and after finishing them 7 weeks later, the discs were submerged in red wine (5"×10 times) daily (approximate real contact time in mouth) and half of them were brushed with an electric brush (Oral B) during 3 seconds.

Group1: daily immersion, brushing

Group2: daily immersion, no brushing

Group3: immersion two times/week, brushing

Group4: immersion two times/week, no brushing

Data were analyzed by means of ANOVA and Tukey's post-hoc test (significance level:0.05).

Results

There was statistically significant decrease in luminosity (L*) and hue (h*) ($p < 0.05$) between all groups, being higher in unbrushed and submerged 7 days.

All the groups showed increase in chroma (c*) significantly higher in group 2 ($p < 0.001$) vs. Groups 1 and 3 (brushed).

Unbrushed groups showed perceptible color changes ($\Delta E > 3.3$) that were statistically significant in group 2 (submerged daily) respect to the other groups.

Conclusions

Brushing decreases the color changes experienced by ormocers in contact with red wine, especially if this is daily.

- Poster 32

TITLE: Flexural strength of a fiber reinforced composite

AUTHORS: *Chiva García F, Martínez Guillamón M, Nicolás Silvente AI, Báguena Gómez JC, Austro Martínez MD, Rodríguez Espín AB.*

Objectives

To compare flexural strength of a nanohybrid composite resin using as a base a fiber reinforced composite resin and a high strength flowable composite resin.

Materials and Methods

40 rectangular specimens (19x5x4mm) were confected and randomly assigned to 3 groups. Group 1(n=15) was prepared with 3 mm of Ever X posterior®(GC) and 1 mm of G-aenial in the top, group 2 (n=15) was composed of 3 mm of TetricEvoFlowX® (Ivoclar) as a base and 1 mm of G-aenial®(GC) and group 3 (n=10) was prepared with 4 mm of G-aenial®(GC). All the specimens were photopolymerized with Demi Ultra®(Kerr) light curing unit following the instructions of manufacturers and were stored in distilled water at 37 °C for 24 h. Finally, a three-point bending test was carried out in a universal testing machine Autograph AGS-1KND (Shimadzu, Japón). Data were statistically analyzed with ANOVA and post-hoc Tukey's test (level of significance: 0,05)

Results

Groups 1 and 2 showed significant differences ($p = 0,008$), being group 1 better (82,96 MPa;SD17,71) than group 2 (66,93 MPa;SD 10,77). There were not significant differences between groups 1 ($p = 0,67$) and 2 ($p = 0,13$) versus group 3 (78,15 MPa;SD 10,85).

Conclusions

The combination of EverX posterior fiberglass composite resin under nanohybrid composite resin showed flexural strength similar to the nanohybrid composite without any base but greater than the combination with the TetricEvoFlowX flowable composite resin.

- Poster 33

TITLE: Comparative between different concentrations and commercial brands of home bleaching: pilot study

AUTHORS: Usieto González L, Belanche Monterde A, García Paniagua L, Lung A, Chikanovsky V.

Introduction

The aim of this pilot study was to evaluate the tooth sensitivity during and after the bleaching treatment by thermoplastic at home splints with different concentration of carbamide peroxide (PC) and different commercial brands.

Materials and Methods

A comparative prospective observational study was carried out with 4 study groups. Two study groups received PC at 10% (SDI® y Ultradent®) and two other groups with PC at 16% of the same brands, consisting of 4 people in each group. A meticulous selection of the sample was made with strict inclusion and exclusion criteria. Questionnaire surveys of dental sensitivity were given to all who received dental bleaching treatment in clinical practices in the degree of Dentistry of the University of Zaragoza. Sensitivity data were collected using the VAS test. The statistical analysis was carried out, and a Mann-Whitney test was used.

Results

In PC 16% concentration, sensitivity was detected in 87,5% of the cases and in 37,5%, VAS 7 on the first day. Instead, in concentrations of 10%, 37,5% don't have any type of sensitivity, and it appears after 3 days (VAS 3-4). Regarding the commercial brands it was observed: Ultradent®16% > SDI®16% > SDI®10% = Ultradent®10%. In all cases the sensitivity disappeared completely after 2-3 days of not wearing the night splints. 100% of the cases were satisfied with the final result. In anterior teeth, it was observed higher sensitivity.

Conclusions

Despite the limitations of a pilot study, no statistically significant differences were found between the bleaching efficacy of different concentrations and commercial brands, but there are differences ($p < 0.05$) as for tooth sensitivity which is fewer in lower concentrations of carbamide peroxide.

- Poster 34

TITLE: Conservative and aesthetic multidisciplinary treatment of a I.1.

AUTHORS: García Paniagua L, Usieto González L, Belanche Monterde A, Chykanovsky V.

Introduction

The aim of conservative treatment is to cure and preserve teeth and healthy dental tissue avoiding, as far as possible, the most aggressive treatments such as dental extractions.

Case Report

A 21-years-old woman came to the dental practice with pain in I.1 and not happy with the appearance of it. She said that she had a root canal treatment from 18 months ago, a retreatment at 12 months and apicectomy 6 months ago. Without any medical or family relevant history of interest, she has pain at palpation and percussion in I.1, and old composite reconstructions. In radiographic diagnosis (supplemented with CBCT), a radiolucent lesion of 5mm of diameter circumscribed at the apex of the root was observed. The diagnosis of acute apical periodontitis and discoloration of I.1 was established. The treatment plan chosen was to go ahead with the orthograde re-treatment. Calcium hydroxide was placed as intra-conductive medication between sessions. The apical plug of biodentine and the filling of the rest of the root canal was made with bioceramic cement (Bioroot®) and gutta-percha. As an cosmetic treatment plan, external bleaching of all her teeth was carried out, changing from an A3 to a B1 color according to the Vita Classical® guide. The I.1 was prepared for lithium disilicate crown color B1 and a retained splint C+ night protection was given to the patient. Reviews were made at 1, 3, 6, 12 and 24 months, with the patient completely asymptomatic.

Conclusions

The prognosis of orthograde retreatment during the first 3-5 years is slightly higher than the prognosis of apical surgery, therefore, we should consider it as the treatment of choice when the root canal treatment fails. In teeth with large restorations and a lot of tooth loss, the most indicated treatment is to use a fully ceramic fixed prosthesis.

- Poster 35

TITLE: Esthetic treatments for high lip line

AUTHORS: Caballero Curtido S, Pérez Ballesteros M, Montalvilla Álvarez E.

Introduction

Present demand of esthetic dental treatments involves to extend increasingly the knowledges. The aim of this bibliography review is to learn in depth about diagnosis of high lip line and to determine the most suitable therapeutic procedures in order to solve it partially or totally.

Materials and Methods

Four searches were performed to look for publications in the last 10 years in Pubmed, Scopus and Cochrane

Library databases. Three of these searches were progressively more accurate. However, the last one was a general search about keywords “gummy smile” and “lip repositioning”.

Results

794 (502 + 286 + 6) results were obtained, selecting finally 28 indexed articles. Most articles were found in Pubmed database and only one in Cochrane Library. Additionally, 2 indexed articles were included in the review.

Conclusions

Botulinum toxin injection, lip repositioning, orthodontic, orthognathic surgery, crown lengthening, prosthodontics, nasal surgery and myotomy were found as gummy smile treatments. Most explained options were crown lengthening, botox and lip repositioning. Lack of publications obtained about orthognathic surgery, nasal surgery and myotomy, show the patients choice of less invasive treatments.