

Poster Presentation No. 86

Flexural strength of fixed dental prosthesis with and without fibre reinforcement

Monika Burdinyashka, Schweyen R., Setz J., Arnold Ch.

Martin Luther University Halle-Wittenberg, Centre for Dentistry and Oral Medicine, Department of Prosthodontics, Germany

Purpose: Fibre reinforcement is recommended to enhance the stability of temporary bridges. The aim of this study was to evaluate the flexural strength of three-unit fixed dental prosthesis (FDP) with and without fibre reinforcement.

Materials and Methods: Three-unit FDPs were fabricated on a standardized master pattern with a premolar and molar using a deep-drawn film. Five specimens were produced with the following materials, respectively: Structur Premium QM (SP), SP with Grand Tec (SPG), Tuff-Temp (TT), TT with Dentapreg (TTD), Luxatemp (LT) and Luxatemp with Ribbond (TTR). All specimens underwent artificial ageing (mechanical loading 240,000 cycles, thermal undulation 5°/55 °C 5,000 cycles). To measure flexural strength, all specimens were loaded in a 3-point bending test rig until fracture in a universal testing machine (Zwick Roell Z010, preload 1 N, $v = 1$ mm/min). Statistical analysis was performed using SPSS 20.0 (Mann-Whitney U-test, $p < 0.05$).

Results: Highest flexural strength was found in specimens made of SP (1902 N \pm 938 N). Lowest values were found in specimens made of TTD (1394 N \pm 216 N). The values of the FDPs with and without fibre reinforcement did not differ in a significant way ($p > 0.05$).

Conclusions: Fibre reinforcement did not lead to a significant increase in flexural strength. Therefore, the additional use of fibres does not seem to be recommendable for clinical practice.

Poster Presentation No. 87

Lithium disilicate. Can it be the ceramic material of choice?

Marina Dimopoulou, Paris Ravanis, George Papavasiliou, Phophi Kamposiora

Dental School of Athens, Greece

Purpose: One of the major changes in modern restorative dentistry is the evolution of all-ceramic systems. The dentist is able to achieve restorations with improved aesthetic properties. One of the most recent systems is lithium disilicate, a material which imparts to the restoration a more natural effect with properties that support the function of the stomatognathic system. In this presentation lithium disilicate will be described and analyzed through its application in clinical cases. The aim was to present the types of restorations that can be fabricated along with the material's properties (biological, mechanical and optical).

Materials and Methods: Clinical cases will be presented, restored with lithium disilicate prostheses concerning, veneers, single crowns in the aesthetic zone, combinations of veneers and crowns as well as customized hybrid implant abutments.

Results: The presentation of the applications of lithium disilicate through these clinical cases illustrates the optical and biological advantages of the material. The natural appearance that provides to the prosthetic restorations and the possibility for different kinds of prosthetic solutions makes lithium disilicate a valuable treatment modality in modern dentistry.

Conclusions: Lithium disilicate is a modern ceramic system. Both laboratory and clinical studies provide positive long term outcomes for use in restorative dentistry. At the same time both the dentist and the dental technician need to know in depth both the properties and limitations of lithium disilicate in order to achieve optimal performance of the restorations.

Poster Presentation No. 88

The relationship between the dental occlusion and temporomandibular disorders

Zana Lila-Krasniqi, Kujtim Shala, Linda Dula, Teuta Pustina, Teuta Bicaj, Enis Ahmedi, Arlinda Tmava, Ljuben Guguvcevski
University Dentistry Clinical Centre of Kosovo, Prishtina, Republic of Kosovo

Purpose: The relationship between the dental occlusion and temporomandibular disorders (TMDs) has been one of the most controversial topics in the dental community. **Aim:** to compare subjects from the group with fixed dentures, the group who present TMDs and a control group considering centric relation and maximum intercuspation and to analyze the related variables also compared and analyzed with electronic system T-Scan III.

Materials and Methods: Total of 54 subjects were divided in three groups; 17 subjects with fixed dentures, 14 with TMDs and 23 controls – selection based on anamnesis – responded to a Fonseca questionnaire and clinical measurements were analyzed with electronic system T-Scan III. Occlusal force, presented by percentage (automatically by the T-scan electronic system) was analyzed in centric relation and in habitual occlusion.

Results: Data were presented as mean \pm SD. Kolmogorov-Smirnov test, Lilliefors test, Shapiro-Willks test were used for the distribution of the data at the numerical series. Differences in $P < 0.05$ were considered significant. After measurements of the differences between centric relation and habitual occlusion in the three groups were noticed varieties but the $P > 0.005$ it was not significant in all three groups.

Conclusions: Based on the limitations of the present study, it was concluded that there are not statistically significant differences between centric relation and maximum intercuspation in the group of individuals without any symptom or sign of TMD although there was noticed the disharmonic relation between arches with overload of the force on the one side in the group with TMD and fixed dentures.

Poster Presentation No. 89

Comparative study of the mechanical properties of acrylic resin copolymers

Ayşegül Köroğlu¹, Onur Şahin¹, Doğu Ömür Dede², Baki Hazer³

¹Bülent Ecevit University, Faculty of Dentistry, Department of Prosthodontics, Zonguldak, Turkey

²Ordu University, Faculty of Dentistry, Department of Prosthodontics, Turkey

³Bülent Ecevit University, Faculty of Arts and Sciences, Department of Chemistry, Turkey

Purpose: The aim of this study was to evaluate some mechanical properties of polymethyl methacrylate (PMMA) based denture base resins polymerized by copolymerization mechanism.

Materials and Methods: Butyl methacrylate (BMA), 2-hydroxyethyl methacrylate (HEMA), isobutyl methacrylate (IBMA) and polyhedral oligomeric silsesquioxane (POSS) were added to monomers of conventional heat and microwave polymerized PMMA resin contents of 2%, 5%, and 10% by volume and polymerization was carried out. Three-point bending and impact strength tests were performed to detect transverse strength and impact strength of the resins. Data were statistically analyzed with 3-way analysis of variance (ANOVA) and Tukey HSD test.

Results: According to the three-way ANOVA results of transverse strength and impact strength, the type of denture base material and the type and ratio of added monomer were significant ($p < 0.05$). Although in all study groups the copolymerization mechanism increased the value of transverse strength, only the IBM 10% and HEMA 10% conventional heat polymerized resin group showed statistically significant difference. In terms of impact strength, except POSS 5% conventional heat and POSS 10% microwave polymerized resin group, there was no significant difference between the control group and the resin groups ($p > 0.05$).

Conclusions: In previous studies, copolymerization mechanism is proposed for the improvement of

the mechanical properties of the denture base acrylic resins. In the present study, copolymerization process was only effective in the transverse strength of IBM 10% and HEMA 10% conventional heat polymerized resin group. Therefore, there is a need for further studies about the monomer ratios.

Poster Presentation No. 90

Comparison of two types implant supported crowns in anterior section

Eva Hašková, Lenka Vavříčková

Charles University in Prague, Faculty of Medicine in Hradec Králové, Department of Dentistry, Czech Republic

Purpose: Single tooth loss can be treated with conventional three-unit or adhesive bridges. The lost tooth can be also replaced with a dental implant. Prosthetically single tooth loss can be treated with a PFM (Porcelain Fused to Metal) crown or with an all-ceramic crown with a custom abutment from zirconoxide ceramics.

Materials and Methods: Implant supported single unit crowns in the anterior section of both jaws and their complications were compared from 2010 to 2014 on Department of Dentistry of Faculty of Medicine in Hradec Kralove. Chipping, chipping off the ceramic layer to the metal coping, all-ceramic crown fracture, crown and also abutment fracture and bond failure between zirconoxide and titanium part of the abutment were considered as a complication. 705 patients with 246 all-ceramic crowns and 614 with PFM crowns were treated from 2010 to 2014.

Results: There were chipping as well as chipping off the ceramic layer to the metal coping found for PFM in 2.1%. Chipping, all-ceramic crown and abutment fracture as well as bond failure between zirconoxide and titanium part of the abutment were found in 2.0% for all-ceramic crowns. No single all-ceramic crown fracture was observed.

Conclusions: Under limitation of this study, the chipping off the ceramic to the metal coping in PFM crowns was caused probably by the failure of the bond between materials. The chipping was probably caused by disrespecting the patients' occlusal concepts. To prevent all complications, it is necessary to follow all rules of crowns fabrication and the proper technology.

Supported by the programme PRVOUK P28.

Poster Presentation No. 91

Treatment of an extensive maxillary partial alveolar ridge resorption with a hybrid denture

Nurten Baysal, Simel Ayyildiz, Cumhur Sipahi

Gulhane Military Medical Academy, Kecioren, Ankara, Turkey

Purpose: The aim of this case report was to restore an alveolar ridge defect of the right maxillary posterior arc with a partial screw retained hybrid denture.

Materials and Methods: Case Report: A 49-year-old male patient was referred to the clinic for the restoration of his implants with a fixed partial denture located in right posterior maxilla. The dental history included a long process of treatment including three major surgeries on that region of maxilla. In clinical examination it was seen that the teeth 14,15,16,17 were extracted and two implants were placed surgically in 14 and 17 teeth region. Also, the alveolar ridge and tuber maxilla were severely resorbed and as a result of this resorption the interarc distance was increased considerably at this region.

Results: For this reason, it was decided to fabricate a hybrid denture to meet the aesthetic and functional expectations of the patient. Due to the size of the defect an acrylic resin based hybrid denture was fabricated to decrease the weight of the prosthesis.

Conclusions: After a complicated treatment process, because of the surgery complications, the patient was satisfied with the result of the denture.

Poster Presentation No. 92

Aesthetic rehabilitation of maxillary anterior teeth with full porcelain restoration

Nurten Baysal, Simel Ayyildiz, B. Filiz Erol, Cumhuriyet Sipahi
Gulhane Military Medical Academy, Kecioren, Ankara, Turkey

Purpose: The aim of this case report was to restore anterior teeth with full porcelain fixed partial dentures to provide an aesthetic outlook for patient.

Materials and Methods: Case Report: A 32-year-old male patient was referred to the clinic with the complaint of poor aesthetics of maxillary anterior teeth. The patient had large composite restorations on both of the central incisors, which were done more than one time, and there was also dental crowding between the anterior teeth. The patient refused to have orthodontic treatment because of the long treatment time. And it was seen that dental crowding in the patient can be repaired enough by only restoring central incisors.

Results: It was decided to restore central incisors with full porcelain restorations to gain a better aesthetics.

Conclusions: The patient was very satisfied with the result and had no complaints at the following control after six months.

Poster Presentation No. 93

Rehabilitation of palatal defects with new surgical and hollow-definitive obturators

Pravinkumar Patil

International Medical University, Jalan Jalil Perkasa, School of Dentistry, Kuala Lumpur, Malaysia

Purpose: To describe new obturator designs and fabrication techniques with clinical success rate.

Materials and Methods: This paper describes two different techniques of fabrication of surgical, interim and/or definitive obturator. 1. Surgical obturator technique describes the fabrication procedure of the prosthesis that restores post-surgical palatal defect with original anatomic form and shape. Satisfaction levels of 15 patients were recorded on visual analogue scale (VAS). Four different prosthodontists visually evaluated facial asymmetry in patients at 6 months recall and their average perception on VAS was recorded. 2. Hollow obturator technique describes the laboratory procedure how to fabricate closed-hollow obturator bounded by the heat polymerized acrylic resin with uniform wall thickness. The pre-shaped wax-bolus was incorporated during packing procedure to achieve hollow space in the prosthesis. Total 10 patients were treated with this technique. Patient-satisfaction-level was recorded on VAS and the obturators were evaluated for fluid leakage after 1 year of recall.

Results: 1. Surgical obturator: Patients' satisfaction level on VAS ranges between 71% and 92% (average 81%). The average score of 4 different prosthodontists for facial asymmetry in patients at 6 months of recall varies between 69% and 95% (average 85%). 2. Hollow obturators: Patients' satisfaction level on VAS ranges between 76% and 93% (average 87%). 90% of obturators did not show fluid leakage after 1 year.

Conclusions: The surgical obturator fabrication technique restoring original tissue form provides acceptable post-surgical aesthetics. Hollow obturator with uniform wall thickness provides acceptable patient satisfaction and resistance to fluid leakage.

Poster Presentation No. 94

Articular-eminence measurements performed by conventional and three-dimensional method

Josip Kranjčić¹, Slaus Mario, Catlak Zlatko, Persic Sanja, Vojvodic Denis

¹University of Zagreb, School of Dental Medicine, Croatia

Croatian Academy of Sciences and Arts, Anthropological Centre, Zagreb, Croatia

University of Zagreb, School of Dental Medicine, Croatia

University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Croatia

Purpose: Articular eminence (AE) morphology could be expressed by dimensions and angles measured by different methods. The aim of this study was to compare conventional two-dimensional with three-dimensional laser method.

Materials and Methods: The study was carried out on 20 human dry skulls (18 to 65 years) from medieval and contemporary period. Measurements were performed on sections (real and virtual) through the AE silicone impressions (lateral-medial) using two-dimensional and three-dimensional (laser) digitalization. AE inclination (two methods) in relation to the Frankfurt horizontal, AE height and the length of curved line (highest to the lowest AE point) were measured. Results were statistically analyzed with significance level of 0.05.

Results: Although small differences existed between AE measurements performed by conventional and three-dimensional laser technology, most of obtained differences were not statistically significant (p-values: AE inclination 0.003 to 1.0; AE height 0.012 to 1.0; curved line length of 0.115 to 1.0). Differences between AE inclination values measured by “best fit line” method and “fossa roof – eminence top” method were statistically significant ($p < 0.001$).

Conclusions: Silicone impressions eased the procedure and retained accuracy for AE measurements. Differences for most of the performed measurements by conventional and three-dimensional method were not significant, thus indicating same reliability of the used methods. AE values by “best fit line” method were higher than by “fossa roof – eminence top” method no matter which measuring method was used. These values are more affected by the eminence height thus representing simplified but actual condylar path significant for adjustment of articulators.

Poster Presentation No. 95

The assessment of clinical alterations in the bearing area of complete denture wearers

Ganimet Deda, F. Perijuci, M. Kuçi, T. Bicaj, F. Asllani, E. Ahmedi

University Prishtina, Republic of Kosovo

Purpose: Complete dentures are the best prostheses in human body, fulfilling functional and aesthetic requirements. Aim was to assess clinical alterations in the bearing area of complete denture wearer, through a specific case report with rare severe alterations.

Materials and Methods: A patient, 56-year-old female, wearing complete upper and lower denture for 25 years, came for a check up due to the fact of “not being able to wear upper complete denture” for the last two years. After routine examination extra-orally and intra-orally, it was noted severe change on the bearing area on the vestibular site, all along of the alveolar ridge of the upper jaw. Changes were present as chronic hyperplastic alterations, forming double and in some regions triple vestibules (epulis fissuratum). Initially, in consultation with oral surgeon, it was planned and done vestibuloplasty with secondary healing of epithelium using immobilization of the tissues by old complete denture relined with zinc oxide paste, fixed by two mini-screws palatal for 10 days. New complete denture was fabricated within two next days, after total epithelization of mucosa.

Results: After surgical treatment and new complete dentures, with excellent fit and occlusion, and also with regular and obligatory follow-ups, patient was completely satisfied functionally and aesthetically.

Conclusions: Patient had complete dentures for 25 years, and was satisfied for 23 years. Last two years she had slight problems and complains, but never had a check-up, until she could not wear the denture anymore. It is mandatory a routine check-up of complete denture wearers including when symptoms are absent.

Poster Presentation No. 96

Efficacy of diode laser and desensitizing agent on prepared teeth

Haluk Baris Kara, Umut Cakan, Burcu Yilmaz, Pelin Inan Kurugol
Istanbul Medipol University, Faculty of Dentistry, Department of Prosthodontics, Turkey

Purpose: Dentine sensitivity is a common symptomatic condition which may occur after crown preparation. The purpose of this study was to compare the effects of diode laser and a commercial desensitizing agent on sealing the dentinal tubules of prepared teeth.

Materials and Methods: In this split-mouth study, for each patient, prepared teeth in one quadrant were individually irradiated by diode laser at consecutive intervals and in the symmetrical quadrant a small amount of desensitizer was applied onto the prepared teeth by small cotton pellets. The surface was then dried by applying a stream of compressed air until the fluid film had disappeared and the surface was no longer shiny. At the control group, no treatment was performed on the prepared teeth. Temporary crowns were fabricated and cemented onto the prepared teeth using non-eugenol temporary cement. The effectiveness of both applications was assessed by one examiner who was not aware of the type of treatment applied at three examination periods; first day, first week and second week after treatment by mechanically sounding the finishing line circumferentially and the preparation surface mezio-distally and bucco-lingually through VAS scores.

Results: Regarding the first day, first and second weeks, VAS scores of the control group were statistically higher than in diode laser and desensitizing agent groups ($p < 0.017$). The difference between VAS scores of the diode laser and desensitizing agent groups was statistically insignificant ($p > 0.05$).

Conclusions: Both methods may be considered as effective in decreasing dentin hypersensitivity after tooth preparation.

Poster Presentation No. 97

Four maxillary incisors' selection using interalar width

Nasr Mohamed Ahmed Elsheikh
The National Ribat University, Sudan

Purpose: To measure interalar width and relate it to the overall width of the four maxillary incisor teeth.

Materials and Methods: It was a descriptive cross sectional study conducted among Khartoum University students. Participants were selected following certain criteria: all maxillary teeth present; no diastemas, Angles Class I Relationship, Skeletal Class I Jaw Relation, regular intact anterior teeth, teeth free from fillings, no history of orthodontic treatment. Severe attrition and caries cases were excluded. Subjects with a history of congenital anomaly, trauma or facial surgery were also excluded. After signing a written informed consent, 114 students were included in the study. Ir-reversible hydrocolloid (Alginate) was used to obtain maxillary impressions that were poured immediately with dental stone. The Interalar Width (I.A.W) and the overall width of the four maxillary teeth were measured for each subject. Measurements were carried out using an electronic digital calliper (Narex – Czechoslovakia), to the nearest tenth of a millimetre and coefficient correlation (r-factor) was obtained.

Results: Forty five males and 69 females, ranging from 25–46 years old were enrolled in this study. The relationship between the overall widths of the four maxillary incisors was highly significant in all subjects (P -value was 0.000). In males (P -value was 0.103) and in females (P -value was 0.051). **Conclusions:** Overall width of four maxillary incisors may be estimated by dividing interalar width by factor 1.4.

Poster Presentation No. 98

Associations of gonial angle with age, gender and dental status

Ab Ghani Siti Mariam, Rohana Ahmad

MARA University of Technology, Faculty of Dentistry, Centre for Restorative Dentistry Studies, Malaysia

Purpose: The aim of this proposed study is to create a preliminary database of gonial angle (GA) sizes of the Malay populations and to find associations of GA size with age, dental status and gender. It was hypothesized that GA will increase with age and the status of dentition as it progresses from dentate to edentulousness.

Materials and Methods: More than 600 orthopantographs (OPG) were retrieved from Faculty of Dentistry, UiTM dental records and filtered to achieve equal number of cases of 200 male and 200 female subjects with similar subgroups of 50 fully edentate, 50 partially dentate and 100 dentate subjects. The dentate subjects were further divided into 50 middle-aged group (40-year-old and above) and 50 young adult group (20–30 years old). The GA was measured on the OPG and correlated with age, gender and dental status.

Results: There was a general trend of increase in the size of GA as the dental status goes from dentate to edentate but the increase was not significant. However, there was a significant difference in the size of GA within the dentate patients as age increases but no differences were detected between genders.

Conclusions: A preliminary database on the mean sizes of GA for Malay population has been established which could be used as future reference. This study also proved the hypothesis that GA size increases with age which could be due to the reduction of muscles strength as a result of aging. The state of dentition did not seem to play a significant role in determining the size of GA.

Poster Presentation No. 99

The benefits of clenching, the sports perspective

Hendrik Lieshout

PRO Rotterdam, The Netherlands

Purpose: Clenching can cause muscular disorders, increase pain, fracture teeth and increase tooth wear. Normally it is considered destructive and it is discouraged and/or treated. In the world of sports clenching could be beneficial. This review of the literature tries to determine what the relationship is between a good and stable occlusion, clenching and its benefits.

Materials and Methods: A comprehensive literature search has been carried out on Pubmed (Medline). After screening all the retrieved titles and abstracts the included articles were read and analysed.

Results: The source literature on this topic is not conclusive and at some points contradictory. Occlusion, muscle contraction and an enhanced performance in sports could be related in three areas. Clenching could enhance the strength and force necessary for a short instant. Second: a good and stable occlusion could be beneficial for a stable posture and increases the sway area. Third: in contact sports and sports with high speeds, contraction of the muscle groups in the head

and neck area decreases concussions and further brain damage due to less head accelerations. Conclusions: Enhanced muscular strength could be useful during performance of various athletic sports. It is still unclear whether a stabile occlusion is necessary for a stabile posture. The literature is contradictory. Brain damage is unfortunately a common injury in many sports. Good protection, tactics and training, like clenching, decreases the outcome of a collision or an impact. Further research is necessary to uncover all the factors that can play a role in this interaction.

Poster Presentation No. 100

Denture cleansers' effect on retention of candida and roughness of denture teeth

Sule Tugba Deniz¹, Doğu Ömür Dede, Onur Şahin, Ayşegül Koroğlu, Nurdan Karacan

¹Biruni University, Istanbul, Turkey

Ordu University, Bulent Ecevit University, Ankara University, Turkey

Purpose: The purpose of this study was to investigate the effect of denture cleansers on surface roughness and *Candida albicans* formation of denture teeth materials.

Materials and Methods: 40 disc-shaped specimens were prepared for each type of denture teeth material (SrVivadent, PMMA; Vitapan, reinforced-PMMA; SrPhonares II, composite resin). The surface roughness values were measured by using a profilometer. Specimens were immersed in distilled water and various denture cleansers (NaOCl, Correga, Rapident) for 8 hours a day during one month test period. After one month storage the final measurements were made for surface roughness and then the specimens were ultrasonically sterilized for *Candida albicans* formation. The optical density of the *Candida albicans* ATCC (90128) stock solution was adjusted to a 0.5 MacFarland solution. 1 ml yeast suspension was incubated with the sample for 48 h at 37 °C. After incubation, the microbial colony count of each plated denture teeth was quantified by the eye counting method and the logarithm of colony forming units (CFU) per ml was then calculated. The data was statistically analyzed using two-way ANOVA, Tukey's test and Paired sample t-test.

Results: Surface treatment technique was effective on surface roughness values. The type of tooth material and its interaction with surface treatment technique were effective on candida formation values ($p < .05$). SrPhonares treated with Corega had significantly higher *Candida* formation (3760 ± 3031 Cfu/mm) than in the control group ($p < .05$).

Conclusions: Denture cleaners would be effective on surface characteristics of denture teeth materials so that clinicians should be careful while recommending alkaline peroxide cleaners.

Poster Presentation No. 101

Minimally invasive approach in prosthodontics: Prosthesis with partial anchorage

Layla Assila, Hicham Soualhi, Amal El Yamani

Faculty of Dental Medicine, Rabat, Morocco

Purpose: The objective of this work is to highlight this minimally invasive treatment and its update. These are ceramic veneers, aesthetic inlay-onlays, and adhesive bridges that will be described and illustrated through clinical cases.

Materials and Methods: The fixed prosthesis with partial anchorage is part of a conservative approach of microdentistry aiming to optimize the dental tissue economy. A principle respected in the treatment of clinical cases through the study of decision parameters, and through the principles of preparation and development of bonding composites.

Results: Advances in micro-dentistry allow us to design so-called conservative prostheses which preserve the maximum residual healthy dental tissues, while meeting the mechanical, biological, functional and aesthetic requirements of prosthetic restorations.

Conclusions: The collection of current knowledge about the different types of fixed prosthetic restorations called minimally invasive, broadens the range of therapeutic options and thus meets the requirements and demands of our patients who are sincreasingly targeted.

Poster Presentation No. 102

Composition of dentin after different surface treatments and bonding application

Meryem Gülce Subaşı¹, Necla Demir², Tevfik Yavuz³, Muhammet Karcı², A. Nilgün Öztürk², Hamdi Şükür Kılıç⁴

¹Istanbul Aydın University, Faculty of Dentistry, Department of Prosthodontics, Turkey

²Selcuk University, Department of Prosthodontics, Turkey

³Abant İzzet Baysal University, Department of Prosthodontics, Turkey

⁴Selcuk University, Department of Physics, Turkey

Purpose: To evaluate the elemental composition changes of dentin surfaces after surface treatments and bonding application.

Materials and Methods: Forty eight freshly extracted human molar teeth were embedded in acrylic resin and 1.5 mm tooth structure was removed under water cooling using a low speed sectioning machine. They were divided into three groups according to surface treatments (control, Er:YAG laser, Femtosecond laser) (n = 16). Then, each surface treated dentin surfaces were divided into two subgroups according to bonding agent (Clearfil SE Bond, Protect Bond) (n = 8). EDX analysis was performed for each specimen both after surface treatment and bonding application. Elemental composition (Ca, O and P) values were analyzed by two-way analysis of variance and Tukey HSD tests.

Results: For Ca element, bonding type (p = 0.015), for P element surface treatment (p = 0.008) and bonding type factors (p = 0.002) were found significant.

Conclusions: Considering the elemental composition changes of dentin, femtosecond laser as a surface treatment option instead of Er:YAG laser treatment and Clearfil SE Bond as a bonding agent should be recommended.

Poster Presentation No. 103

Treatment alternatives for full edentulism – conventional versus implants – imagistic assessment

Marina Melescanu-Imre, Ana Maria Tancu, Cristina Preoteasa, Madalina Vuza, Elena Preoteasa
University of Medicine and Pharmacy Carol Davila, Bucharest, Romania

Purpose: Treatment planning for conventional complete denture, overdenture on implants or fixed implant restoration is a complex decision for most prosthodontists in full edentulous cases. Our goal is to highlight some morphological aspects due to severe bone resorption assessed through imagistic methods in order to choose the most appropriate treatment alternative.

Materials and Methods: Pilot study conducted on full edentulous or in imminence to become edentulous patients. Patient's anatomical and functional status as well as treatment goal to have fixed or removable prosthesis must be considered. The assessment of bone level required through clinical and imagistic measurements – panoramic and CBCT to determinate the height of the residual alveolar bone to establish the most appropriate therapeutic alternative.

Results: For the upper jaw, bone level vertical and horizontal dimensions are a factor to be considered. Vertical bone resorption requires extensive surgical procedures, so most appropriate removable solution. If vertical resorption is nonexistent or limited, there is no buccal resorption recommendation on fixed restoration. In case of horizontal resorption – when resorbed, one option is to

graft the missing buccal. In the mandible, where the atrophy is usually severe, are recommended fixed prosthetics on implants on non atrophic ridge, removable prosthetics on implants for moderate resorption and the actual "standard of care" overdenture on 2 implants. The last option for atrophic mandible is sustained only by placing complete denture or implants of narrow diameter. Conclusions: The predictability and success of implant therapy in edentulous patients is correlated with bone resorption. The treatment planning evaluates this, in order to recommend fixed or removable prosthesis, and due to high resorption rate, especially in mandible, the conventional denture remains the only solution for edentulous patients.

Poster Presentation No. 104

Colour in zirconia-base restorations

Farhad Tabatabaian, Minoo Mahshid, Habib Mirzaei Amirabad
University of Medical Sciences, Dental School of Shahid Beheshti, Tehran, Iran

Purpose: Recently the use of zirconia crown due to the appropriate biocompatibility and high strength has been increased in restorative dentistry. Advanced CAD/CAM systems have been well established in prosthodontics in order to fabricate zirconia restorations. From aesthetic point of view, zirconia crowns have advantages compared to metal ceramic crowns, where discolorations are caused by the metal margin and its show beyond the gingiva. However the requirement to achieve natural looking restorations is still challenging and the shade matching of the restorations with the natural dentition is difficult due to the complex optical characteristics of natural teeth.

Materials and Methods: In this presentation, colour in zirconia-base restorations is described based on the literature, while the colour measurement, perception threshold, shade selection, measuring devices, and shade reproduction are demonstrated.

Results: Factors affecting the target colour include: dental core (background), cement, zirconia core, porcelain layers of dentin and enamel, glaze, and manufacturing processes.

Conclusions: Shade selection in zirconia-base restorations seems to be unpredictable, because of the different factors which affect the target colour of restoration.

Poster Presentation No. 105

Implant treatment using electroformed double crowns for jaw bone reconstruction

Shoji Hayashi, Sugiyama Shuta, Koujirou Shimura, Go Tobayama, Ryosuke Fukue
Kanagawa Dental University, Yohohama city Kanagawa, Japan

Purpose: After tumour resection, implant treatment with jaw bone reconstruction using iliac bone grafting was performed. Implant prosthetic treatment was performed using electroformed double crowns to recover aesthetics and functionality, and we report the findings on long-term observation.

Materials and Methods: The patient was a 31-year-old female, who visited our clinic with a chief complaint of masticatory disorders due to marked mobility of the teeth at 35, 34, 41, and 42. Tooth extraction and biopsy were simultaneously performed, and after tumour resection under a diagnosis of fibrous osseous, reconstruction surgery was performed using titanium mesh trays and iliac bone. Four implants were placed in the iliac bone grafting area, and secondary surgery was performed. After provisional restoration insertion, patient-removable electroformed double crowns were inserted in June 2005.

Results: Ten years after superstructure insertion, no abnormal findings were noted around implants, and panoramic radiography showed a favourable clinical course. Although discoloration of the resin plate area of the superstructure was observed, the retention force of the electroformed outer crowns was appropriate.

Conclusions: After jaw bone reconstruction, the implant placement in intended area and direction is impossible due to the morphology and characteristics of the jaw bone in some cases. In the present case, we produced a patient-removable superstructure, considering hygiene and functionality. Because the retention force has been maintained for 10 years, it was confirmed that the excellent fit of electroformed double crowns is reliable. Furthermore, it was considered that good hygiene prevented implantitis.

Poster Presentation No. 106

Clinical comparing of casted and CAD/CAM manufacture implant-supported bar substructures

Emre Seker, Emre Mumcu, Merve Kayis

Esogu Faculty of Dentistry, Department of Prosthodontics, Eskisehir, Turkey

Purpose: The use of bar retainers in conjunction with implants is commonly used for the rehabilitation of edentulous patients.

Materials and Methods: This case report presents the difficulties encountered in clinical and laboratory stages in two different patients and aims to guide clinical practice.

Results: Implant retained bar substructures are constructed by CAD/CAM or casting techniques using various dental alloys.

Conclusions: These two different approaches vary from impression stage to final restoration.

Poster Presentation No. 107

A maxillary second premolar with extraction indication: Five-year-survival after restoration

Ediz Kale, Aslihan Koroglu, Osman Fatih Arpag, Mehmet Gökhan Tekin

Mustafa Kemal University, Faculty of Dentistry, Hatay, Turkey

Purpose: To present a five-year-survival of a preserved maxillary second premolar although indication for extraction.

Material and Methods: Case Report: A middle-aged male came to our clinic with a fractured maxillary right second premolar. Clinical examination revealed absent crown portion of 2/3'rds and 3radiological evaluation showed endodontic treatment free of apical pathology. The fracture line was more than 3 mm under the lingual gingiva. Acceptable oral hygiene with no sign of gingivitis was evident. According to the patient's history the tooth had been successfully treated with canal-root treatment and an MOD amalgam filling was applied. After 5 years of service the filling had fractured along with the functional cusp of the tooth and within 5 days the patient had visited a dental clinic. An extraction indication was assessed but the patient insisted on any treatment but extraction. Considering the good oral hygiene a custom-cast post-core restoration was planned. The tooth was prepared and periodontal dressing was applied on the axial wall of the lingual marginal gingiva. After healing of the soft tissue a model of the post-core restoration was prepared in-situ using modeling resin. A custom cast-metal post-core was fabricated and cemented. Abutment preparation was done and conventional full-coverage porcelain-fused-to-metal crown completed.

Results: The patient experienced no problem regarding the treatment and managed to use his natural tooth for 5 years more until extraction due to slight pain and apical pathology.

Conclusions: In certain conditions extraction may not be the most right option even if indicated. Sometimes trying to preserve anyway may prove the best.

Poster Presentation No. 108

Interdisciplinary management of anterior dental and soft tissue aesthetics: A case report

Emre Seker, Basak Kusakci Seker

Esogu Faculty of Dentistry, Department of Prosthodontics, Eskisehir, Turkey

Esogu Faculty of Dentistry, Department of Periodontology, Eskisehir, Turkey

Purpose: Dental aesthetics has become a popular topic among all disciplines in dentistry. Especially the anterior aesthetic region requires the cooperation of each dental discipline.

Materials and Methods: This case report describes an interdisciplinary approach to the diagnosis and management of a 46-year-old female patient complained of the maxillary and mandibular central incisors diastema and hypersensitivity. The patient also had gingival recession on the maxillary both laterals and mandibular right canine. First of all maxillary labial and mandibular lingual frenectomy surgery has driven. In the next step, for the maxillary right and left lateral, subepithelial connective tissue graft; for the mandibular canine, free epithelialised gingival graft was planned. After periodontal treatment finished the definitive treatment plan included closing the space between maxillary incisors and mandibular incisors with zirconia retained porcelain restorations. A circumferential 1 mm width of chamfer margin was prepared for bridge restoration of maxillary and mandibular anterior site. To determine the adequate tooth length and appearance, phonetics, tooth proportion and colour were evaluated.

Results: The restorations were controlled and formed in order to obtain optimal proximal and occlusal contact and ideal gingival contour. Even contacts at maximum intercuspation and proper anterior guidance of the maxillary central and lateral incisors were made. The patient was satisfied with the aesthetic and functional outcomes of these treatments.

Conclusions: If a clinician prefer an interdisciplinary based approach to restore anterior aesthetic problems from the diagnosis to the whole treatment, final restoration will capture all aesthetic sense.

Poster Presentation No. 109

Maxillary obturator prosthesis fabricated with different techniques: Case reports

Tulga Ayca, Ersan Celik, Dogu Omur Dede

Ordu University, Faculty of Dentistry, Turkey

Purpose: Congenital or acquired maxillary defects cause various aesthetic and functional problems. Maxillary deficiency can be prosthetically restored with an obturator. These case reports aim to show the different types and designs of obturators fabricated with different techniques used in the rehabilitation of maxillary defects.

Materials and Methods: We present prosthodontic rehabilitation of three patients who had maxillary defects, two of them with the acquired palatal defects and the other with congenital cleft lip and palate. In case 1, a 46-year-old woman underwent surgical removal of unilateral hard and soft palate squamous cell carcinoma. In case 2, a 37-year-old woman had a congenital cleft lip and palate and underwent surgical operation for lip but not palate. In case 3, a 20-year-old woman underwent surgical removal of unilateral hard and soft palate because of an aggressive odontogenic myxoma. Three different techniques were used to fabricate maxillary obturators for the rehabilitation of maxillary defects.

Results: The final prostheses provided good chewing and speech functions. The patients were satisfied with the maxillary obturator prosthesis.

Conclusions: Unfortunately, the three patients were too young to use these prostheses. But due to the youth, their skill and adaptation might have been useful in their successful treatment. However, different patients present with unique problems and need to be treated individually.

Poster Presentation No. 110

Ceramic mini veneers: A conservative approach for smile enhancement

Georgia Kalantzopoulou, Konstantinos Tsoutis¹, Vasilios Chronopoulos²

¹National and Kapodistrian University of Athens, Greece

²University of Griffith, Restorative Dentistry, Australia

Purpose: Patient demands for better aesthetics in a conservative way have increased nowadays. With the advent of new adhesive techniques and restoration materials, minimally invasive restorations could be utilized to enhance patients' smile. They aim to achieve superior aesthetic results as they blend naturally into the dentition and to maximize the preservation of tooth structure as well. In this poster, clinical cases with aesthetic defects such as fractured incisal edges, open diastemas or slightly malpositioned teeth restored with ceramic mini veneers will be presented.

Materials and Methods: After carefully designed case study and with selective, minimum tooth reduction, small pieces of thin veneers were bonded to the preserved enamel.

Results: The clinical evaluation indicated that in selective cases non-invasive veneers are an efficient treatment solution with optimal aesthetic outcome.

Conclusions: Restoration in these case series represented excellent clinical results, with high optical properties. Tooth structure preservation and high bond strength are their main advantages. Adhesion, finishing and polishing remain critical clinical procedures in order to achieve the desired result.

Poster Presentation No. 111

Restorative challenges of implants in the aesthetic zone

Dionysios Spyropoulos, C. Kapogianni, N. Sykaras

National and Kapodistrian University of Athens, Greece

Purpose: The introduction of dental implants in prosthetic dentistry has provided us with alternative solutions regarding dental rehabilitation in edentulous patients. As nowadays osseointegration is considered a fact, interest is focused on prosthetically guided surgery in order to achieve aesthetics and eliminate complications. However, there are clinical cases where positioning of implants makes their prosthetic rehabilitation a restorative challenge. The purpose of this case series is to suggest solutions and alternative designs of implant restorations in cases of non-ideally placed implants in the aesthetic zone.

Materials and Methods: Four cases will be presented, with problems of inclination, depth, position, relation with adjacent teeth and component limitations. The first three cases, regard restoration of a central incisor. In the first case, a narrow diameter implant was placed in a palatal position regarding to the adjacent teeth, resulting in a labial cantilever during function. In the second case, the implant was placed in an increased depth position. In the third case, a narrow diameter implant was placed in order to avoid bone augmentation procedures. In the last case, a narrow diameter implant was placed to restore a canine with an increased labial inclination.

Results: Fabricating custom abutments allows the clinician to achieve ideal aesthetic and functional results, with long-term stability and respect of the soft tissues.

Conclusions: In these cases clinician's knowledge of the used implant system and proper collaboration with the laboratory are important prerequisites.

Poster Presentation No. 112

Chairside fabrication of immediate complete dentures

Christina Kapogianni, D. Spyropoulos, N. Sykaras
National and Kapodistrian University of Athens, Greece

Purpose: Immediate complete dentures are fabricated as provisional restorations in cases of teeth with poor prognosis and offer functional and aesthetic rehabilitation during the initial period of edentulism. The purpose of these case series is to present a method of chairside fabrication of immediate dentures.

Materials and Methods: Two techniques are going to be presented. In the first technique alginate impressions of the existing teeth are made and primary casts are poured. The casts are duplicated and acrylic teeth are made based on these. The second technique is applied in cases where the patient's existing teeth are not ideal. Primary casts are mounted and diagnostic setup of the missing teeth is done. Based on this condition acrylic teeth are made. After this, in both techniques, denture base and flanges are moulded.

Results: With this procedure exact duplicates of patients' teeth are made, so there is little change regarding aesthetics and function. As a result, transitioning from the complete dental arch to the edentulous state is made easier. This procedure is better indicated in cases where there is an almost complete dental arch with minimal occlusal and functional problems, as it applies to patients with progressive periodontal disease. This technique requires good knowledge of laboratory steps and basic principles of complete dentures fabrication. A new denture must be delivered at a later time.

Conclusions: In conclusion, this method gives the clinician a fast and economic way of fabricating a patient-specific immediate denture chairside, with minimal adjustments.

Poster Presentation No. 113

Immediate loading of immediate placed implants: A case report

Neslihan Yenice, Onjen Tak, Fatih Mehmet Coskunes
Kocaeli University, Faculty of Dentistry, Department of Prosthodontics, Turkey

Purpose: Patients who have suffered from severe periodontal disease are common dental practice. In this case report immediately placed and immediately loaded implant retained hybrid prosthesis for the treatment of patient who had teeth with hopeless prognosis in both jaws were presented.

Materials and Methods: A 42-year-old male patient presenting mobile maxillary teeth and unsatisfactory aesthetics of the mandibular fixed prosthesis was referred to our clinic. Implant supported hybrid prosthesis were planned for both jaws. Four implants at the maxillary anterior region were placed immediately after the extractions and two tilted implants (SKY Fast & Fixed, Bredent, Senden, Germany) were placed bilaterally to the molar regions. The same procedure was also applied for the lower jaw. Four standard abutments for the anterior implant and 35° angled abutments for the tilted implants were used following implant placement. A simultaneous, same-day, complete-arch, screw-retained acrylic based provisional prostheses were loaded. After 3 months of healing period, for the upper jaw metal-ceramic and for the lower jaw indirect composite resin (Gradia, GC, Tokyo, Japan) fused to metal restorations were produced and canine guided occlusion was achieved.

Results: The patient's aesthetic and functional expectations were achieved immediately. Neither biomechanical complications nor significant marginal bone loss were observed at 6 months follow-up.

Conclusions: The major advantage of this treatment protocol is that the patient was maintained in fixed prosthesis throughout the treatment. It shortens the length of treatment period, thus a fixed restoration, supported by six implants is a satisfactory treatment option for such cases.

Poster Presentation No. 114

Prosthetic rehabilitation of patients with maxillary defects: Two case reports

Emre Mumcu, Emre Seker, Merve Kayis

Esogu Faculty of Dentistry, Department of Prosthodontics, Eskisehir, Turkey

Purpose: We aimed to maxillary defects due to congenital or developmentally acquired problems such as trauma or infection diseases or surgical treatment of benign or malignant neoplasms. Post-surgical maxillary defects predispose of several uncomfortable situations. Multidisciplinary approach is necessary if optimum levels of rehabilitation are to be achieved on maxillary defects. Maxillary deficiency can be minimized or eliminated almost immediately with obturator prostheses which also separate the oral and nasal cavities and maintain masticatory function, improve speech, deglutition, aesthetics and entirely the facial disfigurement of patients. Adequate treatment should be planned for different classes of maxillary defects.

Materials and Methods: In this clinical report, we will present our approach to treatment of maxillary defects in two patients.

Results: Obturator prosthesis improves speech, deglutition, aesthetics and function for the patient.

Conclusions: In many cases, residual teeth and healthy tissues should be used for supporting the prosthesis. The quality of obturator for patient's life can be increased after the rehabilitation applied by an interaction between surgeon and prosthodontist.

Poster Presentation No. 115

Oral rehabilitation of a patient with maxillo-mandibular defects: Multidisciplinary approach

Mescutsan Cilli, Ediz Kale, Osman Fatih Arpag, Aslıhan Koroglu

Mustafa Kemal University, Faculty of Dentistry, Hatay, Turkey

Purpose: To present a multidisciplinary oral rehabilitation of a middle-aged patient who underwent series of oral surgery operations in order to have fixed trauma due to a traffic accident.

Materials and Methods: Case Report: A 39-year-old female with depression and lowered self-esteem was referred to our clinic complaining of bad dental appearance. The patient had been involved in a car accident at age of 6 and she had undergone many maxillo-mandibular surgeries before. Oral and radiologic examinations revealed unilateral mandibular edentulism, fixed-dental-prostheses with poor occlusal harmony and mandibular removable-partial-prosthesis made of flexible resin material with altered fit and retention. The mandible had multi-segmental fracture and was fixed using bone screws and ligature wire. The trauma had compromised the growth pattern of the maxilla, whereas the mandibular bone has been reshaped with repeated plastic surgery. The patient was informed of the possible treatment options and any large oral surgery was ruled out because she had got tired of being operated. Less invasive periodontal surgery was scheduled after which prosthetic treatment get in progress. Gingival levelling was performed in the anterior maxilla by means of osteoplasty and gingivectomy. Maxillary full arch was restored with conventional porcelain-fused-to-metal fixed-dental-prostheses and the mandible was restored with precision attachment retained conventional removable-partial-prosthesis. The altered occlusion was fixed and chewing function restored.

Results: At the end of the treatment acceptable aesthetics could be achieved and the patient was pleased with the result.

Conclusions: Traumatic defects are often a challenge that can better be overcome with appropriate treatment by a multidisciplinary team of specialists.

Poster Presentation No. 116

Multidisciplinary complete oral rehabilitation in an acquired maxillary defect case

Ali Mutlu, Ediz Kale, İbrahim Damlar, Soydan Kilic
Mustafa Kemal University, Faculty of Dentistry, Hatay, Turkey

Purpose: To present an oral rehabilitation with a multidisciplinary approach for a difficult case of a young patient with acquired maxillary defect due to accidental trauma.

Materials and Methods: Case Report: A 23-year-old male with an old history of traffic accident came to our clinic mainly with a complained of caries and difficulty in chewing. The trauma had compromised the growth pattern of the maxilla causing for deviation and cross-bite at the right posterior maxillary section and severe right-shift of the midline in the anterior. Some of the teeth had been lost, others had undergone tipping. The oral examination revealed poor oral hygiene and prevalent dental caries. The patient was informed of his condition along with the possible treatment options and after achieving acceptable oral hygiene invasive interventions were scheduled. First, oral surgeons performed unilateral rapid maxillary expansion in order to fix the posterior cross-bite. After 3 months of healing process, prosthetic treatment started so that to readjust the occlusion. Full-mouth conventional fixed-dental-prostheses were indicated. A new midline was set between the left side maxillary incisors and the upper teeth were prepared accordingly. After another 2 months of treatment porcelain-fused-to-metal fixed-dental-prostheses for all teeth were completed and delivered.

Results: After more than 6 months of treatment acceptable aesthetic and functional outcomes were achieved and the patient was pleased with his new appearance.

Conclusions: Traumatic defects often become complicated cases for treatment. A multidisciplinary team of dental specialists who work together can provide for better treatment outcomes and favour the long-term prognosis of the outcome.

Poster Presentation No. 117

Efficacy of a mandibular advancement splint in a dentate, severe obstructive sleep apnoea patient: A case report

Bulent Piskin, Bahadır Ezmenk
Gulhane Military Medical Academy, Department of Prosthodontics, Turkey

Purpose: The aim of the present case report is to determine the efficacy of a mandibular advancement splint therapy in a dentate, severe obstructive sleep apnoea patient.

Materials and Methods: A mandibular advancement device was fabricated with 12 mm vertical opening amount. 75% of maximal mandibular protrusion was applied to reposition of mandible. Splint was made with auto-polymerizing clear acrylic resin material.

Results: Apnoea/Hypopnoea Index of the patient was decreased from 60 to 12 after splint therapy.

Conclusions: Splint therapy could be efficient also in severe obstructive sleep apnoea patient.

Poster Presentation No. 118

Altering the patient's aesthetic profile with all-ceramic restorations

Afroditi Yfanti, Stella Babi, Eustathia Andrikopoulou, Phophi Kamposiora
National Kapodistrian University of Athens, Greece

Purpose: Restoration of the aesthetic area is a challenging procedure in everyday dentistry. Patients often present with aesthetic demands that involve not only their teeth but also the facial

structures.

Materials and Methods: Initially a thorough record of the patient's expectations should be done followed by a conversation on which of them can be fulfilled. Waxing of the proposed treatment should include all the necessary changes of the teeth that will lead to the alternation of the facial structures. The outcome should be presented to the patient via a mock-up, in order to visualize and get acceptance of the result.

Results: In this Poster Presentation the reconstruction of a patient using ceramic restorations to achieve minimal alternation of facial characteristics will be presented.

Conclusions: The clinician should be very careful when creating a treatment plan for a reconstruction that may even slightly alter any of the facial characteristics of the patient.

Poster Presentation No. 119

Post extraction, prosthetic-driven, guided implant insertion and immediate loading

Varol Curt-Nazar, Ovidiu Dumitru
Bucharest, Romania

Purpose: The aim of the case presentation is to explain a simple and predictable method how to immediately restore a hopeless tooth. This kind of case can be done by every general practitioner. **Materials and Methods:** A case report – with the help of a surgical guide done in-office, the practitioner can plan and place the implant in the ideal prosthetic position.

Results and Conclusions: Combining CBCT with CAD/CAM technology the practitioner can control all the treatment stages, from planning and delivering a precise and predictable surgical, perio and prosthodontic rehabilitation of a lost tooth.

Poster Presentation No. 120

Prosthetic management for cleft palate patient: A case report

Kubra Degirmenci, Ayse Kocak-Buyukdere
Kocaeli University, Faculty of Dentistry, Department of Prosthodontics, Turkey

Purpose: Cleft lip and/or palate is a congenital oral-facial situation associated with dental abnormalities. These defects cause functional, phonetic and aesthetic problems. Also, quality of patient's life is influenced negatively. Treatment concepts of cleft lip and/or palate begin with birth for patients and continue to adulthood. Generally, the treatment requires multidisciplinary approach. This team contain mainly plastic surgeons, orthodontists, and prosthodontists. This case is about a prosthetic management of cleft palate patient with fixed dental prosthesis after orthodontic treatment.

Materials and Methods: A 19-year-old female had mobile anterior segment of maxilla because of cleft palate after orthodontic treatment presented to Kocaeli University Department of Prosthodontics. Also she had functional problems because of missing teeth. After radiographical and clinical examination and teeth preparation a metal ceramic fixed dental prosthesis was planned for teeth 11, 14, 15, 16, 21, 24, 25 and 26 to fix anterior maxilla segment.

Results: After 4 months, restoration was successful in fixing the anterior segment of maxilla and patient was satisfied with the prosthesis.

Conclusions: Porcelain-fused to metal restoration is a good solution to immobilize anterior segment of maxilla. In addition, prosthetic rehabilitation promotes quality of patient's life by improving patient's self-esteem.

Poster Presentation No. 121

Full mouth rehabilitation of a patient with Type 4 Amelogenesis imperfect

Ahmet Çalışkan, Zortuk Mustafa, Aydınbelge Mustafa, Çalışkan Seçil
Erciyes University, Faculty of Dentistry, Department of Prosthodontics, Kayseri, Turkey

Purpose: Amelogenesis imperfecta (AI) is a heterogeneous inherited disorder that is characterized by abnormal formation of the enamel or external layer of the crown. The teeth have high risk for dental caries and are hypersensitive in addition to rapid attrition and excessive calculus deposition. Purpose of this study is to present treatment procedure of a 13-year-old boy with Type IV Amelogenesis imperfecta which included hypomature and hypoplastic teeth structure and taurodontism. Thus the patient had reduced vertical occlusal dimension.

Materials and Methods: All erupted teeth had needed to have root canal treatment because of severely damaged enamel and dentin structure and periapical infections. Large pulp chambers of the teeth were filled with Mineral Trioxide Aggregate (MTA). Afterwards fibre posts and fibre pinposts were used to support weak root dentin and to provide resistance and retention of core and metal-ceramic restoration.

Results: Treatment procedure of present case has some limitations and it needs a multidisciplinary approach. Endodontic treatment was not possible with standard procedure of root canal treatment because of large pulp chambers and open apices. MTA was used for this purpose. To retain root support, fibre posts and laterally condensing small diameter pinposts were combined. Therefore weak root dentin was supported with elastically similar materials. The vertical dimension of occlusion was increased using metal-ceramic restoration and aesthetics and function were achieved.

Conclusions: In this clinical report after endodontic treatment of infected teeth following fibre posts and fixed restoration showed successful full mouth rehabilitation for a patient with Amelogenesis imperfecta.

Poster Presentation No. 122

Ceramic laminate restoration of maxillary lateral incisors with surface modification

Esmâ Kuris Bastan, İlker Bastan, Gözlem Ceylan, İmran Kocak
Bezmialem University, Department of Orthodontics, Turkey

Purpose: Crowding of anterior teeth in both upper and lower jaw mostly compromises the aesthetics and smile line of the patients.

Materials and Methods: In this case report, 17-year-old female patient was referred to our clinic with complains for crowding of upper incisors. Beside the crowded maxillary crowded incisors, Bolton discrepancy of anterior teeth was indicated.

Due to the treatment protocol, ceramic laminate veneer restoration without any tooth preparation assisted with Er:YAG (2940 nm) for surface modification and surface etching procedure was performed following orthodontic treatment to achieve aesthetic teeth positioning. The first step, orthodontic treatment protocol, was planned as a diastema between the maxillary central and lateral incisors during the setting aright the crowding of the teeth. The aim of the diastema was to enlarge the lateral incisors with laminate restoration to handle Bolton Discrepancy.

Er:YAG (2940 nm) laser with H02 non-contact hand-piece was used to achieve etched surface of lateral incisors to increase attachment surface area of the teeth.

Results: With this treatment protocol, maximum conservative and aesthetic result was established.

Conclusions: Depending on the conservative treatment approach, minimal invasive and avoiding the hard tissue abrasion for needed the restoration, is the golden standard in dentistry.

Poster Presentation No. 123

An alternative method in case of fractured abutment screw: A 4-years follow-up

Onjen Tak, Gamze Iyidogan

Kocaeli University, Faculty of Dentistry, Department of Prosthodontics, Turkey

Purpose: One of the causes of implant failures is the fracture of abutment screw which continues to be a serious problem in restorative practice and great challenge to remove the fractured screw conservatively as the fragment remaining inside the implant may prevent the implant from functioning efficiently as an anchor. A simple and cost-effective method used for the successful utilization of the existing implant, abutment and prosthesis is described in this clinical report.

Materials and Methods: A 61-year-old female patient who had two bone-level dental implants (Straumann) in maxillary anterior region was referred to our clinic for prosthetic treatment. After impression and fabrication of zirconia-based all-ceramic bridge, the screw of the original zirconia-based abutment was tightened to 35 N/cm² with a torque wrench. While tightening the screw, it was fractured and could not be removed successfully by using rotary instruments without damaging the internal threads of the screw hole. Therefore an alternative method using the existing implant was planned and the abutment was cemented into the implant using self-adhesive resin cement (Panavia SA cement, Kuraray). The restoration was cemented with zinc polycarboxylate cement (Adhesor Carbofine, Spofa Dental) after verification of aesthetics and occlusion.

Results: After a 4-year follow-up, continued stabilization of the abutment, implant and prosthesis was observed. During the follow-ups, no aesthetic, biological, functional and biomechanical complications were detected.

Conclusions: The cementation of the abutment into the implant can be a good solution for the successful utilization of the existing implant as an anchor in case of fractured abutment screw.

Poster Presentation No. 124

Restoring of oro-nasal fistula using Andrew's bridge: A case report

Kavut Idris, Şafak Külünk, Murat Yenisey, Numan Tatar

Ondokuz Mayıs University, Department of Prosthetic Dentistry, Turkey

Purpose: The Cleft Lip and Palate (CLP) is variation of a type of clefting congenital anomaly caused by abnormal facial development during pregnancy. The aetiology of CLP is unknown. The CLP patient is mainly characterized by the presence of an oronasal communication, malformation or congenital agenesis of the teeth close to the cleft and deficient sagittal and transverse growth of the maxilla. CLP needs complex treatment strategies scheduled in many years of duration. These patients require various treatments involving a multidisciplinary team, which may include a maxillofacial surgeon, an orthodontist, prosthodontist, speech therapist and all those professionals who can help provide functional and aesthetic improvement. CLP patients might be reconstructed with conventional prostheses or (dental-zygomatic) implant retained prostheses.

Materials and Methods: In this case report, we restored 21-year-old cleft lip and palate patient's masticatory function and improved speech, and aesthetics by using fixed-removable prostheses.

Results: The technique has presented an Andrews bridge which was a fixed removable type of prosthesis. The obturator was light weight which was attached to the removable part of the Andrews's bridge.

Conclusions: Fabrication of the fixed-removable prosthesis which is obturator attached to Andrews bridge is a time consuming, labour intensive, artistic job. Surgical reconstruction was not possible in this case and it needed prosthetic rehabilitation. This promotes physical and psychological healing for the patient and improves the aesthetics.

Poster Presentation No. 125

Solving dilemmas in rehabilitation of patients with implants

Slavoljub Tomic, Mihael Stanojevic

University of East Sarajevo, Bosnia and Herzegovina

Purpose: Dental implants are used routinely in the contemporary dentistry. However, dilemmas still exist in prosthetic rehabilitation of so-called borderline cases. Such a dilemma can arise in the presence of big alveolar ridge depression – whether to rehabilitate an implant patient with fixed or removable denture resting on implants. The aim of this presentation is to demonstrate a possibility of relatively simple solution of such a case with fixed denture on implants.

Materials and Methods: A case of female patient, aged 60, who lost her teeth in both lateral areas in the mandible, with the accompanying ridge atrophy, is presented. After a thorough case history, analysis of study models and x-rays, we decided to insert 2 dental implants in both lateral mandibular areas. After a period of osseointegration, a fixed denture was placed on the implants, with certain modifications compared to classical dental bridges.

Results: As our patient didn't have complaints on the aesthetics and function after temporary cementation and certain adjustments of the fixed dentures, we definitively cemented the fixed dentures operation with satisfactory functional and aesthetic results.

Conclusions: Some questionable and borderline cases can be solved with fixed dental restorations on implants, after adequate planning and certain modifications.

Poster Presentation No. 126

Direct fibre-reinforced fixed dental prosthesis: Preliminary clinical findings of a case controlled clinical trial

Guliz Aktas, Didem Endam, Mustafa Baris Guncu, Mutlu Ozcan

Hacettepe University, Faculty of Dentistry, Department of Fixed and Removable Prosthodontics, University of Hacettepe, Ankara, Turkey

University of Zürich, Dental Materials Unit, Centre for Dental and Oral Medicine, Switzerland

Purpose: This case controlled clinical trial evaluated the clinical performance of direct, surface-retained fibre-reinforced composite (FRC) fixed dental prosthesis (FDP).

Materials and Methods: Between June-2014 and April-2015, 5 patients (3 females, 2 males, 16–61 years old, mean age: 47) received a total number of 5 direct FRC FDP at the Hacettepe University, Ankara, Turkey. All restorations were made directly using E-glass woven fibres (Interlig, Angelus) in combination with resin composite (Filtek Ultimate, 3M ESPE). FRC FDPs were made either in the anterior segment of the maxilla (n = 2) or in the mandible (n = 3). No cavity preparations were made on the abutment teeth. One operator made all FRC FDPs. Initially enamel surfaces were cleaned with pumice and aprismatic enamel was removed with minimal preparation. After etching with 38% H₃PO₄ for 30 seconds and rinsing for 30 seconds, adhesive resin (Tetric N Bond, Ivoclar Vivadent) and flowable composite (Clearfil Majesty Flow, Kuraray) were applied to the lingual surfaces of teeth accordingly. After baseline recordings, patients were followed every 3 months according to previously defined criteria. Patients were also instructed to call upon experience of a failure. Two calibrated operators performed additional qualitative analysis using modified USPHS criteria.

Results: Mean observation period was 6 months with a maximum of 9 months. Altogether, one cohesive failure in the form of fracture was observed in the mandible after 3 months due to trauma where the pontic was tooth 41. This FRC FDP was renewed using the same protocol. According to USPHS criteria, no delamination of the veneering composite or debonding of the restoration from the enamel surface was experienced. Secondary caries and endodontic complications did not occur in any of the teeth.

Conclusions: Preliminary clinical findings of 5 case series with the direct FRC FDPs using E-glass fibre in combination with a nano-filled composite resin showed only one failure.

Poster Presentation No. 127

Prosthetic rehabilitation of a mandibular resection patient status post XRT

Phophi Kamposiora, [Ioannis Papathanasiou](#), George Papavasiliou, Ioli Artopoulou
National and Kapodistrian University of Athens, Dental School, Greece

Purpose: The purpose of this case report is to present a multidisciplinary treatment approach in the rehabilitation of a mandibular resection patient who received postoperative radiation treatment and to discuss the treatment limitations in irradiated patients.

Materials and Methods: A 55-year-old woman presented in the graduate Prosthodontics clinic with a fractured mandibular removable partial denture and a history of mandibular resection followed by post-op radiation therapy. Intraoral examination revealed radiation induced caries and xerostomia. Considering the radiation dosage and the high risk of osteoradionecrosis, a treatment plan excluding implant placement and extractions was proposed. Teeth with poor prognosis were endodontically treated and crown amputated. Gingivectomy with laser was performed for conservative crown lengthening. Fixed partial dentures were fabricated with sanitary pontics over the remaining roots. A Co-Cr removable partial denture was constructed over the remaining mandibular teeth. A frequent follow up plan was scheduled.

Results: After 12 months of function the patient was fully satisfied with functionally and aesthetics of the restoration.

Conclusions: Irradiated patients subjected to tumour ablative surgery demand thorough clinical evaluation and individualized treatment planning considering their compromised health status and the possible treatment related complications. Clinicians need to be aware of the high risk of osteoradionecrosis as well as the lack of reliable clinical evidence for or against the clinical effectiveness of dental implant placement and hyperbaric oxygen therapy.

Poster Presentation No. 128

CAD/CAM inlays and onlays on posterior teeth

[Gokce Dogar](#), Ayse Kocak-Buyukdere
Kocaeli University, Faculty of Dentistry, Department of Prosthodontics, Turkey

Purpose: CAD/CAM restorations have many advantages for dentists and also for the patients. The aim of these case series is to evaluate aesthetic and functional clinical performance of CAD/CAM inlay and onlay restorations on posterior teeth by two different impression techniques.

Materials and Methods: Six patients who did not have enough function, were referred to Kocaeli University, Faculty of Dentistry, Department of Prosthodontics. The cases were separated into two groups. Intraoral optical scanning was applied for half of the cases and plaster casts were achieved for optical scanning for the rest of the cases. The impressions were made with polyether. The restorations were fabricated using CEREC 3D (Sirona Dental Systems) and Panavia™ resin cement was used for cementation. The restorations were evaluated in regard to modified USPHS criteria.

Results: After six months follow-up, good aesthetic and functional results were achieved, neither biological nor biomechanical complications nor restoration fractures were observed.

Conclusions: CAD/CAM restorations offer aesthetic, functional, biocompatible, and long-term successful alternatives to traditional materials and techniques, especially CAD/CAM inlays and onlays offer a conservative preparation that preserves as much healthy tooth as possible, they preserve the maximum amount of healthy tooth structure, helping to ensure functional longevity.

Poster Presentation No. 129

Survival of surface-retained indirect fibre-reinforced fixed dental prosthesis up to 43 months

Mutlu Ozcan¹, Guliz Aktas², Defne Burduglu², Mustafa Baris², Guncu Filiz Keyf²

¹University of Zürich, Dental Materials Unit, Centre for Dental and Oral Medicine, Switzerland

²University of Hacettepe, Department of Fixed and Removable Prosthodontics, Ankara, Turkey

Purpose: This retrospective clinical study evaluated the performance of indirect, anterior, surface-retained, fibre-reinforced-composite restorations (ISFRCR).

Materials and Methods: Between September-2011 and September-2012, 17 patients (13 females, 4 males, 29–65 years old, mean age: 40.5) received 17 indirect FRC FDP at the Hacettepe University, Turkey. All restorations were made indirectly on a plaster model using unidirectional E-glass fibres (Interlig, Angelus) in combination with a resin composite (Gradia, GC) and cemented adhesively with resin cement (Choice 2, Bisco). ISFRCRs were made in the anterior segment of the maxilla (n = 11) and the mandible (n = 6). No cavity preparations were made on the abutment teeth. The restorations were made at the dental laboratory by one dental technician. Before cementation, enamel surfaces were cleaned with pumice and etched with 38% H₃PO₄ for 30 seconds, rinsed for 30 seconds. Then adhesive resin was applied accordingly. After baseline recordings, patients were followed every 3 months up to 43 months according to previously defined criteria. The evaluation protocol involved technical (chipping, debonding or fracture of tooth/restoration) and biological failures (caries). Patients were also instructed to call upon experience of a failure. Survival rates, including repairable defects of FDPs, and success rates were determined (Kaplan Meier).

Results: Mean observation period was 34.6 months. Altogether, 5 failures were observed (survival rate: 70.5%). Three debondings and two delaminations of veneering composite (chipping) were observed. All defective restorations were repaired or recemented, except one, which was remade. **Conclusions:** The 3-unit anterior surface retained indirect FRC FDPs with the E-glass fibre, veneering resin and cement could be advised as a semi-permanent treatment modality.

Poster Presentation No. 130

Abutment fracture in a single implant restoration: A clinical report

Alaleh Shojae Razavi, Atri Faezeh, Naghibi Sistani, Mohammad Mehdi

Babol University of Medical Sciences, School of Dentistry, Prosthodontics Department, Iran

Purpose: This article describes a rare failure in implant dentistry. An abutment fracture in an implant-retained single posterior restoration and the step by step procedures of patient rehabilitation will be discussed. Moreover the probable aetiologies of this phenomenon will be evaluated.

Materials and Methods: After 6 month's function of a cement- retained restoration in first premolar region, the patient referred to her prosthodontist complaining of the fracture of her crown. Intraoral examination revealed the fracture of abutment body. Fortunately the abutment screw remained completely within the remnant of abutment and fixture therefore it was retrievable.

Results: The fracture part of the implant abutment was removed, the fixture level impression was made and the process of remaking the restoration was done cautiously.

Conclusions: Although some of implant complications are more prevalent, prosthodontists have to be well-organized to solve all kind of problems from screw fracture to implant body fracture. In order to avoid exposing to such situations, an appropriate diagnosis and treatment planning is mandatory.

Poster Presentation No. 131

Perio-prosthesis approach: The use of conventional prosthodontics instead of implantology

Ismaili Zouheir, Hicham Soualhi, Layla Assila
Faculty of Dental Medicine, Rabat, Morocco

Purpose: Through clinical cases, involving both function and aesthetics, we will highlight the contribution of conventional fixed prosthesis, periodontally conservative, in the treatment of anterior teeth with periodontal lesions. The management of this type of clinical case represents a therapeutic challenge. Indeed, certain situations put us in a dilemma, should we opt for a radical approach (by implantation extraction) or more conservative (preservation and restoration).

Materials and Methods: The therapeutic decision requires a wealth of information to be collected (aesthetic information, functional and anatomical) and a multidisciplinary approach to choose the right treatment plan.

Results: The use of conventional fixed prosthesis in the treatment of teeth with periodontal disease can help meet the needs and requirements throughout prosthetic restoration including in the particular case of periodontal diseases.

Conclusions: Fixed prosthesis is at the crossroads of other dental disciplines. In a case of multidisciplinary rehabilitation, prosthetics represents the last but not the least part of the work, particularly in cases of periodontal disease. Choosing a conservative approach, despite the difficulties it may present, and rigor required from the practitioner, may allow an aesthetic restoration, which respects all functional and biological needs of the periodontal patient.

Poster Presentation No. 132

Prosthetic reconstruction of anterior alveolar cleft using removable partial denture

Ozlem Colgecem, Merveal Altuntas
Izmir Katip Celebri University, Faculty of Dentistry, Department of Prosthodontics, Turkey

Purpose: Cleft palate is a type of congenital deformity caused by abnormal facial development during gestation. The alveolar cleft is present in 75% of the patients with cleft lip and palate. Patients with cleft palate have physical anomalies including decreased vertical dimensions of occlusion, decreased facial support, lack of functional occlusion, altered speech, poor aesthetics, and lack of a normal smile line. Prosthetic treatment does not only eliminate the physical and functional deficiencies but it also overcomes the possible psychological effects of these deformities.

Materials and Methods: This case report describes the oral rehabilitation of a 20-year-old woman born with cleft palate using a removable partial denture. She had inadequately repaired anterior alveolar cleft with poor lip support due to the extent of tissue deficiency and had also multiple missing teeth including maxillary incisors, right canine, second premolar and left first molar. To restore the defect and support the lip, removable partial denture was preferred. Maxillary right first premolar was infraoccluded and rotated. Due to improper crown/root ratio for fixed restoration, it was left under the denture after eliminating undercuts. The treatment was completed following the clinical and laboratory processes.

Results: After first year follow-up, she was satisfied with the aesthetic and functional outcomes of this treatment.

Conclusions: The use of removable prosthesis rather than fixed ones improves the aesthetic appearance supporting upper lip in these patients. Removable denture does not only fill the defect, but also restores the anterior dentition and overcomes the malocclusion. Thus, satisfying aesthetic and functional outcomes can be achieved.

Poster Presentation No. 133

Full-mouth rehabilitation of severely worn dentition with VDO increase: A case report

Meral Kurt, Bilge Turhan Bal

Gazi University, Faculty of Dentistry, Department of Prosthodontics, Emek, Ankara, Turkey

Purpose: Restoration of the severely worn dentition is a challenging procedure in dentistry. Because it is frequently accompanied with loss of occlusal vertical dimension (OVD) that impairs patient's function comfort and aesthetics.

Materials and Methods: In this report, full mouth rehabilitation with metal-ceramic restorations of a 56-year-old male patient with a severely worn dentition was described. Clinical and radiological examination revealed severe attrition, unsuitable restorations, several missing teeth and an uneven occlusal plane. A reduction of the lower facial height, wrinkles and drooping commissures around mouth were observed during extraoral examination. Parafunctional habits and unsuitable restorations were considered as reasons of severe wear in this patient. Patient's interocclusal rest space that measured between nose tip and chin tip was 7–8 mm larger than the normal distance. Full mouth rehabilitation with increasing OVD and restoring mandibular edentulous posterior region with implants was planned. Root canal therapy of anterior mandibular worn teeth was performed. Crown lengthening procedure was performed with pin retained and post-core restorations. To evaluate the adaptation of patient to the increased OVD, patient used the fixed interim restoration for 2 months. Muscle pain and temporomandibular discomfort were not reported by the patient during 2-months trial period.

Results: Thus definitive full mouth metal-ceramic restoration was completed. At the end of treatment the patient was satisfied with the aesthetics and masticatory function of his restorations.

Conclusions: For successful treatment determining the amount of reduction of the OVD is crucial. Also the increase in OVD provides more interocclusal space for the restorative material to achieve aesthetically pleasing restorations.

Poster Presentation No. 134

Bonded bridges: Any updates?

Hicham Soualhi, Layla Assila, Amal El Yamani

Rabat, Morocco

Purpose: Through this work, we aim to put the item on bonded bridges, which is a type of conservative restoration, and its importance in our therapeutic armamentarium, exposing the different aspects of its evolution through clinical cases.

Materials and Methods: Bonded bridge is a therapeutic option that is part of conservative adhesive and minimally invasive restorations. Faced with certain situations where the implant-prosthesis is not indicated, the use of such a restoration is unavoidable. The management of clinical cases with tooth loss treated by adhesive bridges illustrates the recent developments in the preparations, the design of the armature and the aesthetic improvement.

Results: Replacing a missing tooth while preserving adjacent teeth of the "mutilation" has long been a concern for practitioners. The use of bonded bridge restoration, allows, when the indication arises, to obtain satisfactory results along with the biological, clinical and aesthetic requirements.

Conclusions: In an era where the implant-prosthesis seems to be a treatment of choice for single tooth missing, the bonded bridge, is an adhesive and conservative restoration that always finds its place in our therapeutic arsenal.

Poster Presentation No. 135

TMJ analyses in a young patient with idiopathic scoliosis

Beáta Benke¹, Maria Kühn¹, Dóra Markovics¹, Gyula Marada¹,
József Váncsodi², Márta Radnai¹

¹University of Pécs, Medical Faculty, Dental School, Department of Prosthodontics, Hungary

²University of Pécs, Medical Faculty, Department of Orthopaedics, Hungary

Purpose: From anatomic and functional aspects the stomatognathic system and the upper cervical spine are closely connected. Together with complex neuromuscular relationships, this gives rise to an important field of cooperation between dentists and orthopedics. The aim of this case report was to demonstrate the improvements of TMJ function after orthopedic surgery in a patient with idiopathic scoliosis.

Materials and Methods: Case presentation: A 15-year-old female patient who had adolescent idiopathic scoliosis was surgically treated in 2014. Functional analyses of the temporomandibular joint were performed before the day of operation, 7 months and 10 months after the surgery. For detection the Zebris (Aachen, Germany) ultrasound-based testing machine was used.

Results: The analyses of the data showed that almost all range of motions (ROM) were getting better. The deviation to the right side was reduced from 8 mm to 2 mm during mouth opening. In mouth opening significant change was not observed. The patient had limited left lateral movement before the operation, 10 months after the operation there were free motions towards both sides. The originally asymmetrical protrusion became almost completely symmetrical.

Conclusions: Relating the functions of the TMJ the surgery was successful, since the range and the path of the mandibular movements improved without any other treatment. These improved functions are indirect evidences for the connection of the function of the upper cervical spine and TMJ.

Poster Presentation No. 136

Aesthetic rehabilitation with lithium disilicate glass-ceramic: Three case reports

Sezgi Cinel, Cennet Elcin Sagirkaya, Ismail Onur Şahin
Ordu University, Faculty of Dentistry, Turkey

Purpose: Conventional fixed partial dentures are the therapeutic modalities for aesthetic zone until today. Recently, lots of new ceramic materials improved and came into use for aesthetic restorations. These ceramics show high clinical success, higher fracture strength and excellent aesthetics. The aim of our case report was to restore maxillary anterior teeth with lithium disilicate glass-ceramic (IPS e.max Press), which has optimized translucency, durability and strength for anterior aesthetic restorations.

Materials and Methods: Our study was performed on three patients. All patients were referred to our clinic due to aesthetic reasons, such as deviousness problem, poor aesthetic of maxillary anterior teeth due to incompatible composite restorations and diastema between anterior teeth. After clinical investigations, full ceramic crown restorations were decided to use for one of these patient because of location on the arc of his teeth and interocclusal relationship. For other patients, ceramic laminate restorations were considered to be more appropriate. In all three cases, after checking marginal fit, proximal contour, occlusion and aesthetic, the restorations were cemented. **Results:** The patients were very satisfied with the result and had no complaints at the following control after six months. In the clinical controls, there was no evidence of periodontal, prosthetic or aesthetic complications.

Conclusions: For aesthetic problems, lithium disilicate glass-ceramic laminate or crown restorations are highly successful treatment options when intraoral conditions are suitable.

Poster Presentation No. 137

Multidisciplinary approach to functional and aesthetic rehabilitation of amelogenesis imperfecta

Ahmet Serkan Küçükekenci, Ersan Celik, Funda Fundaoğlu Küçükekenci
Ordu University, Faculty of Dentistry, Department of Prosthodontics, Turkey

Purpose: Amelogenesis imperfecta (AI), is a hereditary disorder in which the quality and quantity of the enamel of teeth is affected. In these patients various treatment plans might be considered due to this disorder's possible effects on aesthetics, function, occlusion, phonation and gingival health of teeth. In this case reports, two patients diagnosed as AI were represented.

Materials and Methods: Case Presentation: A 20-year-old female patient (case1) and her 19-year-old sister (case 2) with features of a variant of AI were referred to our clinic. They had complaint of appearance and poor masticatory efficiency which were the result of the destruction of the anterior crowns and multiple missing teeth. There were congenitally missing teeth and attrition of the molars had resulted in decrease of the vertical dimension of occlusion. The adaptation of the temporomandibular joints and masticatory muscles was carefully with 2 mm thickness acrylic plaques during 3 months. When the patients tolerated their new vertical dimension, they were treated with full-mouth metal reinforced porcelain fixed bridges.

Results: As a result of the treatment aesthetic, functional and psychosocial problems were achieved in both cases.

Conclusions: Clinical and radiological examination was made 6 months and 1-year after treatments. 1-year follow-up period of the patients did not reveal any complication. The restoration of aesthetics and function in patients with AI may be achieved with a dedicated team approach.

Poster Presentation No. 138

Restoring a lateral incisor with BioHPP resin bonded retained bridge

Stella Babi, Efstathia Andrikopoulou, Panagiotis Zoidis
National and Kapodistrian University of Athens, Dental School, Greece

Purpose: This clinical report presents the use of a modified poly-ether-ether-ketone (PEEK) as an alternative material for the fabrication of resin bonded fixed dental prosthesis (RBFDP) framework for the restoration of a missing lateral incisor in a 14-year-old boy with cleft lip and palate.

Materials and Methods: This modified PEEK material known as BioHPP, is a biocompatible, non allergic, rigid material, with good mechanical properties, wear resistance, chemical stability, high polishing and low absorption properties which has been used for years in orthopedics and medical technology. BioHPP frameworks can be constructed either via CAD/CAM manufacturing or via the conventional lost wax technique.

Results: This new material can be used for patients allergic to metals, maintaining the same high aesthetic result of ceramics, presenting light weightness and a flexibility similar to bone as a distinct advantage over metal or ceramic materials.

Conclusions: BioHPP has been used for the fabrication of fixed dental prostheses (FDP) frameworks, for the construction of individual implant abutments, even for removable dental prostheses (RDP) frameworks with good results. Therefore the use of BioHPP could be considered as a viable alternative over the conventional metal or ceramic framework materials for the fabrication of a resin bonded fixed dental prosthesis.

Poster Presentation No. 139

PEEK based removable partial denture framework: A clinical report

Ioannis Papathanasiou, Panagiotis Zoidis, Gregory Polyzois
National and Kapodistrian University of Athens, Dental School, Greece

Purpose: BioHPP is a biocompatible, non allergic, PEEK polymer with flexibility compared to bone, high polishing and low absorption properties. The purpose of this clinical report is to present an alternative treatment approach using a BioHPP framework in combination with traditional denture base acrylic resins for the fabrication of a mandibular removable dental prosthesis (RDP).

Materials and Methods: A 70-year-old female patient presented with a conventional Cr-Co mandibular distal extension RDP with a lingual bar and roach clasps engaging the lower left second premolar and the lower right first premolar. The patient complained for the metallic taste, the weight and the unpleasant display of the metal clasps of her existing Cr-Co RDP and demanded an alternative material for the construction of a new RDP. The treatment plan consisted of a modified PEEK material (BioHPP) distal extension RDP framework with regular acrylic denture teeth and conventional heat cure acrylic resin bases. As a major connector a lingual plate was used in order to better withstand the torsion forces from the distal extension RDP. C clasps engaging 0.5 mm undercuts were constructed.

Results: The patient was fully satisfied with the retention and the minimized weight of the new RDP and the white colour of the framework. After 12 months of function, no loss of retention and no signs of change on the BioHPP framework were observed.

Conclusions: BioHPP could be considered as an alternative RDP framework material. However, further long term clinical evidence is needed in order to consolidate the scientific data.

Poster Presentation No. 140

Oligodontia treatment process: A case report

Anil Seckin, Süleyman Boukaya
Gazi University, Faculty of Dentistry, Ankara, Turkey

Purpose: Tooth agenesis is one of the most common congenital anomalies seen in humans. Although absence of one or more teeth is common but absence of multiple teeth is rare. Oligodontia is a rare developmental anomaly, involving agenesis of six or more permanent teeth, excluding the third molars.

Materials and Methods: A 24-year-old woman had aesthetic complications related to alveolar atrophy depended on oligodontia. We performed inlay grafting for aesthetic alveolar bone recovery using iliac crest to provide adequate horizontal and vertical bone volume and screws for bone fixing to avoid later damage to host bone during surgical removal. Temporary mini dental implants and prothesis were applied during the healing period to placement conventional implant. 3 months later, osseointegrated implants and permanent prosthodontic treatment were carried out.

Results: No implants were lost during the observation time.

Conclusions: Prosthetic rehabilitation is an urgent need for this kind of patients so that they do not suffer from masticatory and aesthetic problems which can eventually lower the self esteem of individuals.

Poster Presentation No. 141

Reproduction of emergence profile using CAD/CAM: A case report

Yohei Sato, Ema Muraishi
Tsurumi University, School of Dental Medicine, Japan

Purpose: In the case of re-repairing a crown, finish lines may already be present under deep gingival margins. It is important that the emergence profile is determined appropriately. The fabrication of the final prosthesis that planned healing of the gingiva by the adjustment of provisional restorations has been recommended. However, the form could not be replicated precisely and easily. In this case, we attempted to reproduce an emergence profile using CAD/CAM.

Materials and Methods: A 30-year-old woman complained of aesthetic problems in her maxillary central incisors. Examination revealed that the tooth colour of the anterior tooth prosthesis was in-harmonious. Due to the incompatibility of the crown margin, inflammation was found in the gingiva. The old crowns were replaced with provisional restorations. In addition, the inadequate metal cores were replaced by composite resin cores with glass fibre posts. After it was confirmed that the fully adjusted provisional restorations did not cause inflammation, the forms were digitized by scanner and applied to the final all-ceramic restorations.

Results: Crowns milled using digital data presented with forms similar to those of provisional restorations. All-ceramic crowns were delivered without needing any adjustments and, in harmony with the gingiva, were good aesthetically. Because it was a metal-free repair, the shadow of the crowns' circumference gingiva disappeared. After two years of follow-up, the improvements in the gingiva and aesthetics were maintained.

Conclusions: CAD/CAM can easily be used to recreate an accurate emergence profile for provisional restorations to lasting crowns.

Poster Presentation No. 142

Multidisciplinary treatment of severe incisor resorption due to ectopic maxillary canine: A case report

Ahmet Yagci, Yasemin Nur Korkmaz, Filiz Yagci
Erciyes University, Faculty of Dentistry, Turkey

Purpose: Ectopic maxillary canine incidence is between 0.9 and 2 percent in the population. Ericson and Kurol stated that resorption of permanent maxillary incisors due to ectopic canine eruption is a rare complication. Ectopically erupting maxillary canines may lead to resorption most commonly at lateral incisors, central incisors and rarely in first premolars. When the resorption is severe, it may even lead to extraction of the affected tooth. This case report demonstrates the multidisciplinary treatment of a patient with severe maxillary central incisor root resorption due to ectopic maxillary canine.

Materials and Methods: An 13 years and 4 months old female patient with an impacted maxillary canine applied to Erciyes University, Faculty of Dentistry, Department of Orthodontics for treatment. After radiographic and computerized tomography evaluations, left maxillary canine was found to be localized in the left central incisors position and severe root resorption extending up to crown of the central incisor was identified. Clinical examination showed mobility and devitalisation of the left central incisor. Central incisor was extracted before starting the orthodontic treatment and impacted canine was orthodontically erupted by using elastic chain in the incisor position. Elastic chains were renewed once a month. The canine was restored with an all-ceramic crown after the orthodontic treatment.

Results: Overall orthodontic treatment duration was 16 months.

Conclusions: Successful orthodontic and prosthodontic management of the case was achieved. The results were functionally and aesthetically satisfactory.

Poster Presentation No. 143

Orthodontic and prosthodontic treatment in a patient with severe anterior open bite: A case report

Filiz Yagci¹, Ahmet Yagci²

¹Erciyes University, Faculty of Dentistry, Department of Prosthetic Dentistry, Kayseri, Turkey

²Erciyes University, Faculty of Dentistry, Department of Orthodontics, Kayseri, Turkey

Purpose: This report describes the treatment of a 13-year-old girl with a severe anterior open bite. An intraoral examination showed that the patient had a severe anterior open bite extending from the left maxillary canine to the right second premolar. The molar relationship was class III. Right maxillary central incisor had been extracted and there was a vertical alveolar defect at the extraction site. The other three incisors had been treated endodontically and restored with metal screw posts but the crowns were severely damaged. Also there was a periapical lesion at left maxillary lateral incisor's root apex.

Materials and Methods: Prosthodontic treatment was planned following orthodontic treatment for the patient. During first 10 months of the orthodontic treatment, a monoblock was applied to achieve vertical growth of anterior maxilla. Then fixed orthodontic treatment was applied. After 4 years of orthodontic treatment, extrusion of the anterior teeth with alveolar bone and acceptable occlusion were achieved. Radiographic evaluation revealed that the lesion which was related with left maxillary lateral tooth didn't improve in spite of endodontic treatment. Then apical surgery was applied. Left central and lateral incisors revealed mild mobility. Then an 8-unit metal-ceramic fixed partial denture was made from left first premolar to the right first premolar to increase retention because of negative overjet between maxillary and mandibular anterior teeth.

Results and Conclusions: Interdisciplinary treatment of the patient with severe open bite produced good results aesthetically and the stability of the treatment was favourable at the 6th month follow-up.

Poster Presentation No. 144

Observation of soft tissue and vertical dimension changes using 3dMD

Simel Ayyildiz, Faruk Emir, Cem Sahin

Gulhane Military Medical Academy, Department of Prosthodontics, Turkey

Purpose: The aim of the present study was to analyze the accuracy and validity of 3dMD to predict the position of the soft tissues of a complete denture patient three dimensionally.

Materials and Methods: A 62-year-old female patient was referred to the clinic for renewal of her 10-year used denture. The extraoral examination revealed that the vertical dimension was reduced. Totally 15 photos were taken by a 3D imaging device (3dMD Ltd., London, UK) that shots every picture in 1.5 msec. The patient was positioned in rest position, centric relation position both with old dentures and new dentures. Vertical dimension of rest position was 63 mm, centric relation position with old dentures was 51 mm and centric relation position with new dentures was 57 mm. Linear changes and discrepancies of soft tissues were evaluated by 3dMD software. And also 3D changes and deviations were calculated by using Geomagic Control. The topographic colour coded map of deviations was reported.

Results: According to obtained data the changes before and after treatment were 2.68 mm for labiale superius, 2.92 mm for labiale inferius, 1.99 mm for subnasal, 2.89 mm for pogonion, 1.98 mm for pronasal and 2.96 mm for sulcus inferior. Points moved forward positions after treatment. The area of the upper and lower lips was also calculated. The results were 388.9569 mm² and 442.6625 mm² before treatment and 435.5113 mm² and 529.8522 mm² after treatment, respectively. The area of the lips was increased.

Conclusions: 3D imaging produces clinically acceptable three-dimensional soft tissue predictions and alternative method in determining vertical dimensions in complete denture patients.

Poster Presentation No. 145

Study on longevity of prosthodontic treatments of transitional edentulous spaces in young patients

Maria-Antonela Beldiman, Ioana Martu, Ionut Luchian, Nicoleta Ioanid, Elena Luca
University of Medicine and Pharmacy Gr. T. Popa, Iasi, Romania

Purpose: Prosthetic and orthodontic treatment of partial edentulous spaces in adolescents and young patients became a necessity to resolve the malocclusion in order to balance subsequent the occlusal relations. Premature loss of anterior or posterior temporary teeth can have consequences on the development of permanent dentition, the support serving to maintain space for teeth eruption in the dental arches. The aim of this study was the assessment of different types of space maintainers or prosthodontics therapy solutions in terms of their longevity, applied as interceptive orthodontic treatment for edentulous space management.

Materials and Methods: The study followed the evolution of appliances properly applied to 145 clinical cases that required these therapeutic options, and appreciated the success rate (64%), and the failure of these devices. Findings failure rate (28%) was reported to the main causes that could lead to remove the devices: loss of removable space maintainers (22%), fracturing both fixed and removable appliances, loosening orthodontic rings and of course, the absence of some subjects at periodic reassessment meetings (15%).

Results and Conclusions: The results of this study (designed to assess the longevity of some orthodontic and prosthetic appliances) are consistent with the data cited in the literature, and reveal as an important conclusion, the necessity of applying prosthodontic treatments, immediate but transitory, specific for young patients.

Poster Presentation No. 146

Prosthetic restoration in a patient with bilateral condylectomy as a consequence of trauma

Tugce Erginsoy, Eda Ozdere
Selcuk University, Turkey

Purpose: Condylectomy is an invasive surgical procedure which is performed by reason of trauma, condylar hyperplasia and pathological conditions such as neoplasia and arthritis. Prosthetic rehabilitation is a challenging process in patients who had condylectomy operation resulted in limited mouth opening. The aim of this case report is to present the anterior prosthetic rehabilitation of a patient who had bilateral condylectomy because of trauma.

Materials and Methods: A 39-year-old female patient was referred to the Selcuk University Department of Prosthodontics for prosthetic rehabilitation. Clinical assessment of the patient showed restricted mouth opening, missing teeth in maxillary anterior region and malocclusion with open bite. She was complaining about her aesthetic appearance of anterior teeth on the upper jaw. The patient had a facial trauma in childhood therefore condylectomy operation was performed in early ages. Temporomandibular and panoramic x-rays were taken. Surgical procedures for the purpose of increasing mouth opening were recommended to patient; but this treatment option was refused. Maxillary anterior teeth were prepared. The oral opening was insufficient for regular metal impression trays; because of this, sectional impression was taken with polyvinyl siloxane impression material. Teeth were restored with zirconia based porcelain fixed prosthetics. Pink porcelain was used to compensate the alveolar bone loss.

Results: More aesthetic results can be obtained by using pink porcelain and zirconium oxide crowns comparing to metal fused to porcelain restorations. **Conclusions:** This clinical report describes anterior prosthetic rehabilitation of a patient with restricted mouth opening after bilateral condylectomy.

Poster Presentation No. 147

Removal of a deformed implant cover screw: A case report

Betül Yılmaz Evmek¹, İbrahim Duran¹, Mahmut Sümer², Berre Karöz², Çağrı Ural¹

¹Ondokuz Mayıs University, Faculty of Dentistry, Department of Prosthodontics, Samsun, Turkey

²Ondokuz Mayıs University, Faculty of Dentistry, Department of Oral and Maxillofacial Surgery, Samsun, Turkey

Purpose: Dental implants have become one of the most popular techniques for replacing missing teeth and implant therapy is an effective and reliable prosthodontic treatment option. Implant complications can be categorized through biological and mechanical factors. Biological complications include unsuccessful osseointegration or peri-implantitis. Mechanical complications include screw drive deformation, screw loosening, screw fracture, prosthesis fracture and problems with attachments.

Materials and Methods: A 57-year-old partially edentulous male was presented to Ondokuz Mayıs University Department of Prosthodontics with functional and aesthetic problem. Clinical and radiographic examinations were done and an implant planned in posterior region. Surgical procedure was planned and expected healing period was three months. Second stage surgery was performed but complication was encountered while unscrewing the cover screw of implant with a hex driver. The drive of the cover screw was deformed, probably because of excessive load while unscrewing. We couldn't overcome the complication by using a new hex driver so we decided to create a slot on cover screw. The slot was made by grooving the cover screw with a diamond tapering fissure bur using different technique. Groove was prepared in the form of semilunar for prevent damage to the inner surface of the implant. The cover screw was retrieved easily using the modified elevator. **Results and Conclusions:** The technique described in this article involves the use of inexpensive instruments commonly found in dental offices and by using this modified technique, it is easy to prevent the damage of internal surface of the implants.

Poster Presentation No. 148

Oral rehabilitation in an ectodermal dysplasia patient: A case report

Fatmanur Dumrul, Ongun Celikkol, Berk Celikkol, Birgul Ozpinar

Ege University, School of Dentistry, Department of Prosthodontics Bornova, Izmir, Turkey

Purpose: Hereditary hypohidrotic ectodermal dysplasia (HED) is typically inherited as an X-linked recessive trait, characterized by deformity of at least two or more of the ectodermal structures – hair, teeth, nails and sweat glands. Abnormalities in number, size, and shape of teeth, and reduced salivary secretion, present in isolated oligodontia as well as in hypohidrotic ED. This case report describes the prosthodontic rehabilitation of a 22 years old female patient with hypohidrotic ectodermal dysplasia.

Materials and Methods: The patient presented with failure in eruption of her permanent teeth and difficulty in chewing. She also had aesthetic problems. An extra-oral examination revealed a receding hairline, scanty eyebrows, a depressed nasal bridge and prominent supra orbital ridges. Lips were protuberant and dry. Skin was dry and parched. An intra-oral examination revealed a mixed dentition with persist primary teeth. The vertical dimension of the lower face was also reduced. On radiographic examination, through the roots of teeth, which were present, were found to be short and conical. After clinical and radiological examinations diagnostic casts were obtained. Increase of the vertical dimension was planned with fixed partial dentures.

Results: Oral rehabilitation was accomplished with fixed partial dentures. Treatment had major impacts on self-esteem, masticatory function, speech and facial aesthetic.

Conclusions: Dentists are often the first who diagnose these patients. Therefore, they should be aware of the clinical manifestations of this syndrome. In conclusion, the most important aspect which has to be considered in these patients is the psychological impact which is caused by aesthetics.

Poster Presentation No. 149

Minimal invasive approach with palatal veneers in dental erosion case

Burcu Kanat Ertürk¹, Öngen Tak¹, M. Erhan Çömlekoğlu²

¹Kocaeli University, Faculty of Dentistry, Department of Prosthodontics, Turkey

²Ege University, Faculty of Dentistry, Department of Prosthodontics, Izmir, Turkey

Purpose: Dental erosions caused by gastric acid may result in hypersensitivity and aesthetics problems due to the dissolution of hydroxyl-apatite crystals and dilatation in dentine tubules. In this clinical report, the rehabilitation of a patient suffering from the gastroesophageal reflux of three years with full ceramic crowns and palatal veneers prepared by CAD/CAM technique based on minimal invasive approach principle is described.

Materials and Methods: In the intraoral examination of a thirty-year-old woman with hypersensitivity and aesthetics complaints, wear facets on the palatal surfaces of maxillary anterior teeth resulting from acid effects were observed. Crown restorations were planned for central teeth because of the incisal fractures, and palatal veneers were decided on the worn palatal surfaces of the laterals and canines without any margin preparation. Digital impression was obtained by an intraoral scanner (Bluecam, Sirona). The designed crown and veneer restorations (Inlab Cerec V4.2.5) were fabricated in the milling unit (Cerec MCXL, Sirona) from multilayered feldspathic ceramics (Cerecblocs PC, Sirona), and lithium disilicate reinforced glass ceramics (IPS e.maxCAD, IvoclarVivadent), respectively. After crystallization firing and glazing procedures, the restorations were cemented with resin cement (Panavia F2.0, Kuraray). The patient was followed-up to 6 months.

Results: Full ceramic crown and palatal veneer restorations prepared with CAD/CAM in a reduced time period showed clinically higher acceptable fit and aesthetics outcome. The patient was highly satisfied with the functional and psychological aspects.

Conclusions: According to the preliminary results, palatal veneers prepared with minimal invasive approach can be used as an alternative to the conventional prosthetic treatments in dental erosion cases.

Poster Presentation No. 150

Transforming a removable prosthesis to an implant supported fixed

Giannis Natsios, Georgia Kalantzopoulou, Paris Ravanis, Phophi Kamposiora, Stavros Pelekanos
National and Kapodistrian University of Athens, School of Dentistry, Department of Prosthodontics, Greece

Purpose: The introduction of osseointegrated implants has solved many clinical problems when treating edentulous patients. Implants have made it possible to avoid removable restorations and all the problems that are involved with this kind of restorations. The purpose of this poster is to present an alternative method of constructing two provisional implant supported fixed partial dentures using the existing provisional removable restoration in the mandible.

Materials and Methods: The treatment plan in the mandible included the placement of four implants and two fixed partial dentures bilaterally in the posterior area. A provisional partial removable denture was constructed in order to restore the posterior occlusion and the implants were placed. Due to the complexity of the treatment plan in the maxilla, the final restoration in the mandible had to be delayed. After the osseointegration period, the removable partial denture was modified chairside using four provisional implant abutments and two fixed partial dentures were constructed.

Results: As a result the patient was satisfied with the solution of a fixed provisional restoration during the whole restorative period. Additionally, the provisional fixed partial dentures resulted in a more stable occlusion with no economical surcharge, contributing to the success of the treatment plan in the maxilla.

Conclusions: The avoidance of the use of a removable partial denture – even during the transitional period – can lead to a more favourable situation concerning both the occlusal stability and the patient satisfaction.

Poster Presentation No. 151

Prosthetic rehabilitation of generalized tooth wear part II aetiology: Erosion

Georgia Pozidi, Aggeliki Lambrinouidi, Stavros Pelekanos, Phophi Kamposiora
National and Kapodistrian University of Athens, Greece

Purpose: Tooth wear is a major problem and a challenge in current clinical dentistry. Loss of enamel can be differentiated into three causal categories: mechanical loss (attrition and abrasion), chemical loss and abfraction. Some of these individual mechanisms may occur simultaneously leading to the multifactorial aetiology of the disease. The aim of these case series (part I and part II) is to demonstrate the diagnosis, treatment planning and prosthetic management of generalized tooth wear due to erosion.

Materials and Methods: The present clinical case regards the rehabilitation of a patient presenting extensive tooth wear on the maxilla due to erosion. Examination of her medical history revealed that she suffered in the past from bulimia, but had recovered by the time of rehabilitation. Erosive lesions were observed on the palatal surfaces of the maxillary anterior teeth and the occlusal surfaces of the premolars. Treatment plan included the increase of the vertical dimension – due to limited prosthetic space – and the fabrication of lithium disilicate crowns in centric relation.

Results: The patient was fully adjusted to the new vertical dimension. The final prostheses restored the aesthetics of the patient's smile and fulfilled her expectations.

Conclusions: The use of adhesive techniques for the rehabilitation of the worn dentition is an innovative perspective which offers the advantage of minimal tooth removal and excellent aesthetics. There are many case reports in the literature; however, clinical trials or systematic reviews should be performed in order to verify the validity of the current treatment option.

Poster Presentation No. 152

Prosthetic rehabilitation in a patient with osteopetrosis: A case report

Imran Kocak, Gozlem Ceylan, Goknil Ergun Kunt
Ondokuz Mayıs University, Faculty of Dentistry, Department of Prosthetic Dentistry, Kurupelit/Samsun, Turkey

Purpose: Osteopetrosis, which is one of the complications of osteosclerosis, may result in such serious oral complications as osteomyelitis and exposed necrotic bone. This clinical report describes the oral rehabilitation of a patient with maxillary prosthesis with magnetic attachment system.

Materials and Methods: A 35-year-old female patient, who suffered from osteopetrosis, came to our clinic due to aesthetic problem of the maxillary complete denture. After clinical and radiographic examination, the patient's demands were evaluated. In the clinical examination it was seen that the patient was still using the maxillary complete denture with the magnetic attachment system for fifteen years. The patient had no problems in terms of magnetic retention but she had complaints about aesthetic of her prosthesis. We decided to make a new prosthesis to the patient with the same magnetic attachment system. Mandibular complete denture couldn't be constructed due to osteosklerosis and scar tissue in the mandibular area.

Results: Patient was clinically controlled during the first week, first month and third month following denture insertion.

Conclusions: In terms of retention characteristics compared to other attachment systems, magnetic systems may be found insufficient in retention. In spite the decrease in retention of magnetic attachments, the patient had used the prosthesis for a long time with no complaints.

Poster Presentation No. 153

Prosthetic rehabilitation of cleft lip and palate patient: A case report

Murat Yenisey, Onur Etoz

Ondokuz Mayıs University, Faculty of Dentistry, Department of Prosthetic Dentistry, Samsun, Turkey

Purpose: Treatment of patients with cleft lip and palate is completed with fixed prostheses, removable, total, implants and aims to restore aesthetics, phonetics and function and should be guided by the basic principles of oral rehabilitation, such as physiology, stability, aesthetics, hygiene and the expectations of the patient. In this case, a tooth supported overlay partial denture was applied. **Materials and Methods:** Thirty-one years old male patient, who had failed fixed partial denture in anterior region was referred to our department. After clinical and radiographic examination the tooth supported overlay partial denture was planned because of large maxilla-mandibular discrepancy due to severe maxillary atresia, need for impaired lip support and recovering the anterior open bite. Tooth preparations were done for telescopic crowns. Telescopic superstructure was incorporated within denture.

Results: Only minor complications (dental plaque, de-cementation of copings) had been seen at one month, three months, six months, a year and two years follow-ups by clinical and radiographical evaluating. Patient was generally happy because of re-established aesthetics, phonetics and function.

Conclusions: Overlay prosthesis allows reconstructing severe vertical and horizontal tissue deficiencies, maintains tooth and bone, aesthetics and phonetics.

Poster Presentation No. 154

Prosthodontic rehabilitation of diastema with zirconia-based restorations

Ceyda Güleç, Işıl Sarıkaya

Gaziosmanpaşa University, Faculty of Dentistry, Tokat, Turkey

Purpose: Zirconia supported fixed partial dentures (FPD) have widely increased the clinical indications of metal free prostheses, showing more favourable mechanical characteristics compared to the early ceramic materials. The demand for metal free material with increased translucency may mimic the natural dentition. The all-ceramic systems can only be used to replace anterior teeth with single crown restorations or maximum with three-units FPDs. On the other hand zirconia restorations can also be used on molars with high strength.

Materials and Methods: Case report 1: Woman, 18, had a diastema between right maxillary incisor and lateral anterior teeth. She was complained about her appearance was not aesthetic. Two-unit FPDs were planned for her because of over mesiodistal space. Case 2: Woman, 38, had a diastema between anterior maxillary teeth additional with the spaces in canine region because of bilateral embedded canine. Eight-unit FPDs were planned for her at the thought creating more aesthetic appearance also like her demand. The CAD/CAM technique (Tizian Cut 5 Smart, Schütz, Germany) was used for handling of zirconia frameworks (Tizian Blank, Schütz, Germany) in all cases. Porcelain was veneered (Noritake Co, Japan) to zirconia copings with conventional techniques. And the restorations were cemented to the prepared teeth with glass-ionomer cement.

Results: At the 6-months follow-up, no major complications were observed in all restorations.

Conclusions: In this presentation prosthodontic rehabilitation of diastema with zirconia-based FPDs was described.

Poster Presentation No. 155

Prosthetic rehabilitation of generalized tooth wear part I aetiology: Bruxism

Angeliki Lamprinoudi, Georgia Pozidi, Stavros Pelekanos, Papavasiliou
National and Kapodistrian University of Athens, Greece

Purpose: Prosthetic rehabilitation of cases with generalized tooth wear is considered a challenge in current clinical dentistry. Loss of enamel can be differentiated into three causal categories: mechanical loss (attrition and abrasion), erosion and abfraction. Some of these individual mechanisms may occur simultaneously leading to the multifactorial aetiology of the disease. Purpose of this case series (Part I and Part II) is to demonstrate the diagnosis, treatment planning and prosthetic management of severe tooth wear due to bruxism.

Materials and Methods: The case report concerns a patient presenting excessive tooth wear without loss of vertical dimension but with limited prosthetic space. The aetiological factor was daytime and nocturnal bruxism. Diagnosis was set by clinical findings such as muscular orofacial pain; patient's self-report about bruxism and clinical findings such as loss of enamel with exposure of dentin, shortening of teeth, loss of tooth anatomy and previous restoration fracture. Prevention of further tooth wear, treatment of orofacial pain and increase of vertical dimension were obtained via an occlusal stabilization splint. Diagnostic wax-up at central relation and the diagnostic mock-up permitted the evaluation of aesthetic and functional rehabilitation. The patient was maintained in provisional restorations for a period of 6–8 weeks. The prosthodontic treatment consisted of minimally invasive all-ceramic restorations.

Results: The patient was fully adjusted to the new vertical dimension and was satisfied with the aesthetic result.

Conclusions: The use of adhesive techniques for the rehabilitation of worn dentition is an innovative perspective which offers the advantage of minimal tooth removal and excellent aesthetics.

Poster Presentation No. 156

Bond strength of fibre-reinforced resin posts

Zsolt Rajnics, Gyula Marada, Moetaz El-Hag, Márta Radnai
University of Pécs, Hungary

Purpose: The study was completed to evaluate the effect of silane on the push-out bond strength using glass-fibre reinforced posts. Further aim was to determine if there is a regional relation between the adhesive system and the push-out bond strength of the fibre post using different luting agents.

Materials and Methods: Fifteen single rooted human teeth were endodontically treated and 2.0 mm diameter glass fibre-reinforced composite post (Rebilda, VOCO) were cemented. In the first group Rebilda DC (VOCO) without silane, in the second group the same luting material with silane, and in the third group Clearfil DC Core Automix (KurarayDental) without silane were used to lute the posts. After complete setting of the luting agents three 2mm-thick rods were obtained from the cervical (A), middle (B), and apical (C) regions of the roots. The specimens were then subjected to push-out testing in special equipment (Lloyd 1000 R Materials Testing Machine). Bond strength data were analyzed with ANOVA tests.

Results: The Rebilda technology without silane had the highest push-out bond strength at the coronal region ($164.71 \text{ N} \pm 72.12$), while the Clearfil technology without silane had the lowest value at the apical region ($94.86 \text{ N} \pm 34.14$). Using silane had no significance on the push-out bond strength ($P = 0.909$), however the root canal dentin regions had a significant effect ($P < 0.010$).

Conclusions: This study showed significant differences among different luting protocols. The bond strength was significantly higher in the coronal region due to the greater cemented surface area and the difference in dentin structure.

Poster Presentation No. 157

Prosthodontic rehabilitation of mandibular trauma patients with precision attachments

Yadel Hazır, Işıl Sarıkaya, Yeliz Hayran

Gaziosmanpaşa University, Faculty of Dentistry, Tokat, Turkey

Purpose: In this case reports, prosthodontic rehabilitation of mandible trauma patients with precision attachments based removable partial dentures (RPDs) were presented in two cases.

Materials and Methods: Patients' common complaints were aesthetic deficiency and chewing disability. Case I; age 56, man, has a devastated mandible with a traffic accident 27 years ago and he has not got any treatment to the present. He had five teeth (11, 12, 21, 22, 17) in the maxilla and six teeth (33, 34, 35, 41, 42, 43) in the mandible. Metal supported fixed partial dentures (FDP's) and RPD with precision attachments (ball attachments) were planned for him. Case II; age 36, man, has a gunshot injury in the region of mandibular symphysis. Mandibular anterior teeth without right canine were extracted during the maxillofacial surgery because of the mandibular injury. Also, FDP's and RPD with snap on attachments were planned for him. Veneer crowns were made on both sides of the gap and Dolder bar was used between crowns.

Results: Thus, we increased vertical dimensions and provided the patients' function and aesthetics again.

Conclusions: There are various attachment types that can be employed and the choice of the attachment system is one the most difficult tasks for the clinician. The choice of systems should be orientated on the clinical situation and anatomical structures, oral hygiene, individual needs of the patients and economic factors.

Poster Presentation No. 158

Implant-retained prosthetic rehabilitation of an edentulous patient: A clinical report

Ongun Celikkol, Gizem Yaman, Ugur Tekin, Mehmet Ali Güngör

Ege University, School of Dentistry, Department of Prosthodontics, Bornova, İzmir, Turkey

Purpose: Complete maxillary and mandibular dentures have been the traditional standard of care for edentulous patients. However, most of the patients report various problems. Implant supported overdentures offer many practical advantages over conventional complete dentures. They may be retained by a variety of attachments. Regardless of attachment type, these prostheses appear to have significant prosthodontic maintenance requirements, which can be time-consuming and expensive for the patient, clinician, and technician. This study presents a fabrication of the implant-retained overdenture that uses four freestanding maxillary and mandibular implants.

Materials and Methods: A 65-year-old female patient reported for the prosthodontic rehabilitation of her implant placed edentulous jaws. She had 4 implants in maxilla (Bicon) and 3 implants (Zimmer) in mandible. Her medical history revealed that the maxillary implants were placed 5 years ago and mandibular implant 16 years ago. Locator type of cylindrical attachment system (Bicon) had been used in maxilla and O-ring attachment system in the mandible for her old dentures. After conventional preliminary impression making, light body additional silicone impression material was used for final secondary impressions. Vertical dimension and bilateral balanced occlusion in finished dentures were established.

Results: First recall was attended after 24 hours. The regular follow-up was advised every six months. The patient was followed for six months without any complaints.

Conclusions: Implant-retained overdenture remaking without changing the problem-free abutment types is a simple, cost effective solution in the rehabilitation of the edentulous jaws. Patient motivation, education and post-treatment follow-up are critical for the successful treatment outcome with implant supported complete dentures.

Poster Presentation No. 159

Centric relation recording techniques in patients with craniomandibular dysfunctions

Pantea Vitalie, Oleg Solomon, Daniela Chirita, Vadim Popovici, Cristina Rosca
State University of Medicine and Pharmacy "Nicolae Testemitanu", Republic of Moldova

Purpose: Applying leaf gauge and anterior jig techniques and stating their advantages for centric relation recording in patients with craniomandibular dysfunctions.

Materials and Methods: 10 patients were examined with signs and symptoms of craniomandibular dysfunctions. Centric relation was determined using anterior jig and leaf gauge techniques. Both methods use a device – either an acrylic jig or a set of 0.1 mm thick leaves, which is placed between patients central lower and upper incisors. It separates the lateral teeth, releases the elevator muscles and creates a tripodization. The patient is asked to slide the mandible forward and backward and bite slightly. Primarily, in the leaf gauge technique lateral contacts are absent, so several leaves are removed until the first lateral contact appears. For the anterior jig technique, we obtained a uniform contact of the lower incisors with the jig surface. Both contacts were verified with articulating paper, placed on the lateral teeth in the first method and between the jig and teeth surface for the second one.

Results: We obtained the temporomandibular joint loading, lateral pterygomandibular muscle deprogramming and identification of the teeth contacts which indicate the centric relation recording. The electromyography revealed the reduction of pathologic muscle activity, as seen in the absence of pathological engrams.

Conclusions: These techniques allow the neuromuscular system to seat the condyles in their individual centric relation by deprogramming muscles and allowing the condyles to seat in the most superior position ideal for prosthodontic treatment.

Poster Presentation No. 160

Multidisciplinary treatment in a patient with aggressive periodontitis: Case presentation

Metush Disha, Fatmir Dragidella, Gloria Staka, Zana Sllamniku-Dalipi, Kastriot Mega, Saranda Disha, Teresa Disha, Donika Dragidella, Burim Gutiqi, Edon Behluli
University of Prishtina, Dentistry School, Republic of Kosovo

Purpose: Periodontitis is a chronic, irreversible and destructive disease resulting in tooth loss. Its aggressive form produces defects in a very short time-frame that leads to premature tooth dysfunction and consecutively extraction is the only option.

Materials and Methods: Patient FM, age 45, was referred for periodontal treatment with migration and mobility of majority of dentition, especially in mandibular region. After clinical and radiological evaluation, the treatment plan included periodontal surgery with multiple extractions of teeth 18, 17, 28, 38, 32, 41, 42, 47 and 48 during the course of surgery. Widman-modified flap surgery was undertaken for both jaws and after extraction the sutures were placed.

Results: After periodontal surgery the condition of mandibular periodontal tissues was ready for fixed bridge, showing no signs of periodontitis. The bridge, consisting of 46 to 36, was placed after two months and periodic evaluation of periodontal tissues showed no recurrence of periodontal inflammation. The two-year follow-up showed maintenance of treatment results.

Conclusions: In order to achieve better results for fixed prosthetic appliances, the multidisciplinary approach, including periodontal treatment, must be carefully planned, especially in the case of aggressive periodontitis.

Poster Presentation No. 161

Prosthetic rehabilitation in a patient with combination of three precision attachments

Hayran Yeliz, Kaan Yerliyurt

Gaziomanpasa University, Faculty of Dentistry, Department of Prosthodontics, Tokat, Turkey

Purpose: The present case report aimed to provide the patient's aesthetic and functional expectations with using different precision attachment combination.

Materials and Methods: 45-year-old male patient was referred to us to have a new prosthesis. In the clinical examination we observed long edentulous span on the maxillary arch and unilateral edentulous span on the mandibular arch. Due to economical limitations we couldn't use implants and we decided to make removable partial dentures. He desired aesthetic replacement of the missing teeth and an increase in the chewing efficiency. So we decided to use attachment-retained removable partial denture. Eligible teeth were prepared first to provide abutment for the attachments. In the maxillary arch we preferred to use two different precision attachment combinations. We used extracoronal ball attachment on the left side and the folder bar attachment to right side due to insufficient distance between the adjacent teeth. Because of unilateral free-ended partial edentulism, we preferred to use extracoronal Fm 1 hinge precision attachment in the mandibular arch.

Results: The patient was satisfied with the retention and stability of the prosthesis. He was pleased with the functional and the aesthetic result of the treatment.

Conclusions: Retention and stability of dentures can be increased with precision attachment retained removable partial denture. Precision attachments can be used to provide an aesthetic alternative to a conventional circumferential clasp in a removable partial denture.

Poster Presentation No. 162

Restoration of horizontally fractured anterior teeth: A case report

Elchin Abbasov, Murat Yenisey

Ondokuz Mayıs University, Faculty of Dentistry, Atakum, Samsun, Turkey

Purpose: The present case report aimed to describe the restoration of teeth by cast-post and metal supported porcelain.

Materials and Methods: A patient with 5 anterior broken teeth in maxilla (12, 11, 21, 22, and 23) referred to our clinic for prosthetic treatment. The patient's complaints were aesthetic deficiency and chewing disability. We decided to repair these teeth by cast post. Cavity and teeth canals were prepared for cast post. Then we took impression from these canals and cavities with an A (additional) silicone material. Cast posts were prepared in laboratory. We cemented the posts. Afterwards we took impressions of cast posts and prepared metal supported porcelains on them.

Results: After a follow-up period of 3 months it was determined that all functional and aesthetic requirements were fully compensated without any complaint.

Conclusions: The combination of cast post with metal supported porcelain on it is a conservative treatment alternative to prefabricated and standard post. These restorations are preferable option due to their low costs, tooth preservation, durability and compatibility.

Poster Presentation No. 163

Ridge atrophy of the mandible in relation to prosthetic treatment

Alwin Alan Sokolowski, Armin A. Sokolowski, Sandra H. Huber, Walther A. Wegscheider

Medical University of Graz, Austria

Purpose: The aim of this retrospective cohort study was to investigate the difference of the post-therapeutical alveolar ridge atrophy between implant-supported dentures and conventional dentures.

Materials and Methods: In total of 479 patients met the inclusion criteria. To determine bone atrophy, two panoramic radiographs, taken at the time of prosthetic treatment and after a minimum time lapse of 3 years, were analysed and compared.

Results: There was a statistically significant linear resorption over time in partial model casting dentures ($n = 108$, $p = 0.006$) and telescopic dentures ($n = 61$, $p = 0.002$). Mean bone loss in partial model casting dentures was 1.99 mm, in telescopic dentures 1.88 mm and in complete dentures 3.18 mm ($n = 18$). In single-tooth implants mean resorption was 0.28 mm ($n = 130$), in fixed partial dentures 0.15 mm ($n = 48$), in bar-retained implant supported dentures on 4 implants 0.13 mm ($n = 91$). On more than 4 implants 0.12 mm ($n = 9$). Restorations on 2 implants with Locator®-attachments (4 mm, $n = 4$) and bar-retained implant supported dentures on 2 implants without extension (1.73 mm, $n = 5$) showed significantly higher atrophy than bar-retained implant supported dentures on 4 implants ($p < 0.01$).

Conclusions: Our study demonstrated that the degree of bone atrophy in the posterior region of the mandible is highly dependent on the prosthetic treatment. Fixed partial dentures and permanent implant-supported restorations ensured long-term bone preservation. In edentulous mandibles, the bar-retained dentures supported on 4 or more implants showed the lowest grade of atrophy. Therefore restorations supported with implants should be preferred to removable conventional dentures in terms of preserving alveolar bone volume.

Poster Presentation No. 164

Rehabilitation of vertical dimension in patient with tooth wear: A case report

Arinda Tmava-Dragusha, K. Shala, L. Dula, Z. Lila-Krasniqi, E. Dragusha, E. Ahmed, T. Bicaj, T. Pustina

University Dentistry Clinical Centre, Pristina, Republic of Kosovo

Purpose: The management of tooth wear has been a subject of increasing interest from both preventive and restorative points of view. Tooth wear (TW), also known as tooth surface loss (TSL) is multifactorial process involving destruction of enamel and dentine which can threaten tooth survival and oral health related quality of life of affected individuals.

Materials and Methods: A 55-year-old male patient was referred to the Department of Prosthodontics at the University of Pristina, Kosovo, for treatment of his severely worn dentition (Figure 1). Clinical and radiographic examinations and diagnostic cast revealed severe attrition, especially on anterior teeth and uneven occlusal plane. The causes of the severe wear were parafunctional habits due to missing teeth in posterior region in maxilla and mandible. The treatment plan was to restore mandibular and maxillary edentulous posterior region with removable partial dentures (RPD), metal ceramic restoration in maxilla and crown lengthening procedure. As there was clinical evaluation of reduced vertical dimension of occlusion (VDO), full mouth rehabilitation with increasing VDO was planned.

Results: In these case reports, a satisfactory clinical result was achieved by restoring the vertical dimension with an improvement in aesthetics and function (Mi-Young Song et al 2010).

Conclusions: In the treatment of severely worn dentition, the rehabilitation using restoration of anterior crown and RPD providing posterior support is affordable and common for many patients because of economics and tradition. However, the restored anterior teeth can be easily exposed to excessive occlusal loads if the patient does not wear RPD.

Poster Presentation No. 165

Achieving anterior aesthetics in one-visit by using CAD/CAM technology

Çağrı Ural, Gülümser Örkün, İbrahim Duran

Ondokuz Mayıs University, Faculty of Dentistry, Department of Prosthodontics, Turkey

Purpose: Technological developments on Computer Aided Design/Computer Aided Machining (CAD/CAM) systems and the demand of aesthetic aspect have lead to alternative treatment options. In this case, it was aimed to achieve anterior aesthetic with fabricating a laminate veneer and an implant supported all-ceramic crown on custom zirconia abutment by using CEREC 3 Omnicam system.

Materials and Methods: Case Presentation: Twenty-three years old female patient, who has lost left maxillary central tooth due to trauma and crown malformation of right central tooth, applied to our clinic one year ago because of aesthetic concern. An implant supported single crown restoration and a laminate veneer were suggested to the patient as a treatment plan. Four months after the implant surgery, a screw retained provisional restoration was fabricated for soft tissue management and emergence profile. When the soft tissue management completed individual Ti-based zirconium oxide abutment was inserted, the restorations were fabricated and delivered to patient in one visit. **Results:** During the controls 15 days, one month, three months and six months respectively after the treatment the patient was evaluated clinically and no complications were observed. By this methodology, production stages of restorations are reduced and technical errors in production were minimized.

Conclusions: The traditional methods have been described to be time-consuming, technique sensitive and unpredictable due to many variables and CAD/CAM may be a good alternative for both the dentists and laboratories. Ceramic abutment has the strength and precise fit of a titanium interface and also the aesthetic advantages of shaded custom-milled zirconia with no visible metal.

Poster Presentation No. 166

Periodontal-prosthetic treatment approach to manage gummy smile and skeletal class III patient: A case report

Tamer Celakil, Mutlu Keskin, Emrah Baca, Gulumser Evlioglu

Istanbul University, Faculty of Dentistry, Department of Prosthodontics, Turkey

Purpose: A gummy smile poses prosthetic and periodontal challenges for dentists attempting to achieve ideal aesthetics. Gingival contouring procedure can create a mucogingival defect or biological width devastation.

Materials and Methods: A 37-year-old female presented with a complaint of excessive gum visibility while smiling as well as in resting lip position and crowding. Clinical and radiographical assessment of the concerned area was carried out to rule out any major pathology of the region. A diagnostic wax-up and 1 mm durable copolyester outer layer guide were fabricated for marking gingival level. Gingivectomy was preferred over flapless surgery and mock-up was used like temporary prosthesis after gingivectomy surgery. Using self-cured temporary acrylic, an intra oral mock-up was created that exactly duplicated the wax-up in temporary veneers after tooth preparation procedure.

Results: The patient was reviewed after a month, and 1 year follow-up the case has been completed. The gummy smile was significantly reduced and she also maintains good gingival health. The profile had improved with prosthetic treatment and she is satisfied with the prosthesis.

Conclusions: It is important during treatment planning to evaluate the anatomical relationship that issued in the gummy smile and choose the appropriate periodontal and prosthetic treatment to eliminate this condition.

Poster Presentation No. 167

Aesthetic restorations for posterior teeth: A CAD/CAM study

Hilal Eksi

Istanbul Aydin University, Turkey

Purpose: The aim of this study is to provide the patient's prosthetic rehabilitation with CAD/CAM techniques and without any try-in appointment, using Cerec Blocs PC whose have appropriate resistance and aesthetic properties at the posterior region.

Materials and Methods: 35-year-old female patient with no systemic disease, admitted to the clinic of prosthodontics for the restoration of teeth 25, 26. According to the clinical and radiographic examinations; there was no pathology in the related teeth and surrounding tissues. And then it was decided to do the endocrown for tooth 26 and full crown for tooth 25. Amalgam restoration was removed and then prepared for endocrown. Both teeth were prepared with shoulder cervical finish line. The preparations were screened and designed with Sirona Cerec (it wasn't used any retraction techniques) and then was sent to milling unit. After glazing (Ivoclar glazurpaste), it was cemented with adhesive cement (Panavia sa cement).

Results: At the end of treatment, the patient's expectations, relating to aesthetics and function, were fulfilled.

Conclusions: The follow-up will be necessary for long-term success.

Poster Presentation No. 168

Porcelain lamina restoration – two cases of its use

Markéta Polednová

Dental practice, Kolín, Czech Republic

Presentation was cancelled.

Poster Presentation No. 169

Custom abutment materials

Aydan Boztuna

Istanbul University, Turkey

Purpose: In the dental implant applications, prosthodontic rehabilitation step is as vital to success as the surgical procedures. Implant prosthodontic restorations can be fabricated with different techniques. For some cases, using custom abutments may become imperative. The greatest reason for this necessity is the implant placement hindering prosthodontic rehabilitation functionally and esthetically. The prefabricated abutments provided by the implant companies are accepted as the gold standard because of their biocompatibility and advanced mechanical properties.

Materials and Methods: A case report: The 31-year-old female patient came to our clinic, with complain about the discomfort of the metallic reflection from the upper side gingiva of the implant which is located on the 22nd dental region. We decided to apply the abutment which is prepared with a CAD/CAM system as a customize ceramic abutment. The measurement which's sent to the lab is transferred to the computer and with CAD/CAM system, customize I zirconia abutment preparation is done.

Results: Titanium superstructures' grey color reflection through theperi-implant mucosa influences the esthetical view negatively. Implementation of CAD/CAM systems in the use of custom abutments production process is accelerated and the technician errors are eliminated both. In the fol-

lowing period, with more researches the materials become that more durable, having less producing time and lower cost are expected.

Conclusions: With the increase of the number of variations in actual technology and materials, clinicians get the opportunity to make more successful restorations within long-term studies.

Poster Presentation No. 170

Iatrogenic fracture of a lithium disilicate crown during cementation

Matthias Karl, Nina Moore

University of Erlangen-Nuremberg, Germany

Purpose: Lithium disilicate ceramic is frequently used for the fabrication of all-ceramic restorations and shows promising long-term results. For the successful use of all-ceramic systems, manufacturer specific guidelines with respect to processing, design and cementation have to be followed. Materials and Methods: Following chamfer preparation of a maxillary left second molar, a single crown was manufactured from lithium disilicate ceramic. This crown fractured during cementation using self-adhesive cement. Fractographic analysis of the fractured surfaces was subsequently performed using a scanning electron microscope.

Results: At the fracture origin, the overall thickness of the crown was only 0.4 mm. A small radius of curvature potentially carried out manual adjustment as well as porosities in the glaze, all occurring in that area, may have promoted the fracture.

Conclusions: Strictly observing material-specific preparation guidelines seem to be a prerequisite for successful all-ceramic restorations. Frequently advocated minimally-invasive restorations with reduced material thickness require adhesive cementation prior to loading.

Poster Presentation No. 171

A case report: Treatment of peg-shaped lateral incisors with porcelain laminate veneers

Merve Aytuğ, Hamit Serdar Çötert

Ege University Faculty of Dentistry, Department of Prosthodontics, Izmir, Turkey

Purpose: Microdontia commonly affects maxillary lateral incisors called peg-shaped laterals. This situation creates an unpleasant smile. Porcelain laminate veneers (PLV) are being cited as the best restorative material due to its aesthetic specifications and resistance to wear and staining. The aim of this study is to present the aesthetic improvement of peg-shaped lateral incisors by using PLVs. Materials and Methods: A young adult patient had short, peg-shaped and retrusive lateral incisors. PVL was planned to develop mesiodistally and incisogingivally larger and protrusive lateral incisors. The case was focused on a clinical technique that involved the formation of a subgingival cervical chamfer and the removal of 0.5 mm enamel from buccal surface. In addition, overlapped incisal edges were created. Contact areas were not prepared. For the cementation, e.max express laminate veneers were etched with hydrofluoric acid and silanized. Teeth were etched also with 37% phosphoric acid and bonding agent was applied to the teeth. PVL was then cemented with adhesive resin cement (Variolink).

Results: Peg-shaped laterals can be also treated by resin composite restorations or conventional crown restorations. This case was treated by PVL with a conservative preparation and a pleasant smile harmony was created for the young patient. The conservative preparation is anticipated that the long-term durability and aesthetics of PLV will be an advantage over composite resin restorations and crown restorations.

Conclusions: PVL must be preferred as a restorative material to correct tooth morphology abnormalities due to its aesthetic specifications and resistance to wear and staining.

Poster Presentation No. 172

Incidence of TMJ signs in complete denture wearers versus partial denture wearers

Dana Gabriela Bosinceanu, Dan Nicolae Bosinceanu, Norina Consuela Forna
University of Medicine and Pharmacy Gr. T. Popa, Iasi, Romania

Purpose: The aim of this study was to find and quantify the incidence of clinical signs of TMJ disorders in complete and partial denture wearers.

Materials and Methods: The patients were denture wearers who came in Faculty of Dentistry in Iasi for replacement of dentures. A questionnaire and a clinical examination were used to assess 200 patients

Results: It was shown that there was a statistically significant difference between the two types of denture wearers regarding the presence of TMJ signs.

Conclusions: The partially edentulous patients (wearing RPD) exhibited more TMJ signs compared with the CD-wearing patients.

Poster Presentation No. 173

Complications in complete denture wearers: A clinical study

Dan Bosinceanu, Doriana Agop-Forna, Dana Bosinceanu, Norina Consuela Forna
University of Medicine and Pharmacy Gr. T. Popa, Iasi, Romania

Purpose: The aim of this clinical study was to assess the frequency and type of prosthetic complications in terms of several variables, in denture wearers patients that had been treated and came back for new dentures, in Faculty of Dentistry in Iasi, Romania.

Materials and Methods: The patients were 104 patients with a mean age of 65.3 years wearing complete dentures. The complications and parameters related to the dentures such as the accuracy of vertical dimensions and centric relation, arrangement and possible malposition of the artificial teeth, and the border length of the denture bases.

Results: The most common complication was loss of retention followed by ulceration.

Conclusions: recalls seem to be important for complete dentures wearers, as many complications may develop and cause damage to the dentures as well as to the patients' tissues.

Poster Presentation No. 174

Accuracy of different types of wrenches fabricated by different manufacturers

Halil İbrahim Kilingç, Haydar Albayrak, Funda Tursun, Hasan Önder Gümüş
Erciyes University, Faculty of Dentistry, Department of Prosthodontic Dentistry, Kayseri, Turkey

Purpose: The aim of this study was to evaluate the accuracy of wrenches of different implant manufacturers in delivering target torque values.

Materials and Methods: Five new and unused wrenches from each of 4 different implant manufacturers (Straumann, Implants, Dyna, Biohorizons) were selected to evaluate their accuracy of reaching their target torque values. Two types of the wrenches were friction style while the other two were spring style. To measure torque value of each wrench, a digital torque device with a 3-jaw chuck to hold each manufacturer's driver was used. Force was applied to the wrench until either the spring style flexed to a precalibrated limit or the friction style released at a precalibrated torque value. The peak torque value was recorded by the digital torque gauge. This procedure was repeated 5 times for each wrench. Independent t test and one-way ANOVA ($\alpha = .05$) were performed to compare different types of wrenches fabricated by different manufacturers.

Results: The mean difference of torque values of different types of wrenches was not differed statistically significant ($p = .084$). However, mean difference torque values of Straumann wrenches showed lower values than others ($p < .05$). Other three manufacturers didn't differ from each other ($p > .05$).

Conclusions: Within the limitations of this study, different types of wrenches are not differed from each other. All wrenches of manufacturers show lower torque values than target torque values, but the lowest one was Straumann.

Poster Presentation No. 175

Immediate implant placement and provisionalization in the aesthetic zone

Konstantinos Tsoutis¹, Georgia Kalantzopoulou¹, Vasilios Chronopoulos²

¹University of Athens, Greece

²University of Griffith, Greece

Purpose: Implant-supported restorations are a conservative and predictable treatment solution for the replacement of missing teeth. When in the aesthetic zone, it is a challenge for the clinician to reproduce the original tooth shape and morphology, as well as the soft-tissues architecture. In selective cases of hopeless tooth extraction, immediate implant placement, bone grafting and provisionalization is an effective and predictable treatment option. The purpose of this poster is to present clinical cases treated with this protocol and to discuss its indications and advantages.

Materials and Methods: Fractured or severely decayed anterior teeth were extracted and the alveolar socket was cleaned and evaluated. Implants were placed and the gap between implant and buccal bone was filled with FDBA bone graft. A provisional single-unit restoration was screwed on the implant at the same appointment. Special care was given to the emergence profile of the provisional in order to support the bone graft and the soft tissue scalloping. Definitive implant-supported crowns were placed four months later.

Results: Treatment time reduction, immediate function and predictable aesthetics are the main advantages of this treatment protocol. Careful case selection is a prerequisite for treatment success.

Conclusions: In cases with hopeless anterior teeth in the maxilla to be restored, when buccal bone plate is intact and primary implant stability can be achieved, immediate placement and provisionalization is a treatment plan with optimal aesthetic and functional outcomes.

Poster Presentation No. 176

Early implant failure – preliminary analyses of a large-scale patient material

Malin Olsson, Victoria Stenport, Torsten Jemt

University of Gothenburg, Sahlgrenska Academy, Institute of Odontology, Sweden

Purpose: To analyse a large-scale patient material of implant treatments at one specialised clinic, regarding early implant failure in the edentulous jaw.

Materials and Methods: Data on patients treated and followed-up with dental implants at one specialised clinic was compiled from 1986–2014. Totally edentulous jaws were analysed with respect to first implant failure up to one year after prosthesis placement ("early"). Data was statistically analysed on patient/surgery level by means of Chi-square tests.

Results: Implants with a turned surface were inserted from 1986 to 2003, thereafter replaced by implants with a moderately rough surface. Altogether 2039 and 2583 surgeries were conducted in edentulous maxillae and mandibles, respectively. Early implant failures were reported in 280 (18.3%) and 25 (4.9%) maxillae, showing a higher failure rate for turned surfaces ($p < 0.001$). Comparable numbers of early failures for mandibles were 77 (3.7%) and 13 (2.5%), respectively. A

significantly higher incidence of early implant failure in edentulous maxilla compared to edentulous mandible was observed, with turned ($p < 0.001$) and moderately rough ($p < 0.05$) implants, respectively. Patients with failures of implants with moderately rough surfaces placed in the maxilla had more frequently Cardio Vascular Diseases (CVD) compared to the corresponding group with turned implant surfaces ($p < 0.05$). Furthermore, patients with failures of implants with moderately rough surfaces placed in the mandible exhibited a higher prevalence of thyroid medication compared to the corresponding group with turned implants ($p < 0.05$).

Conclusions: Early implant failure was significantly reduced with implants provided with moderately rough surfaces ($p < 0.05$). However, failures in these patients seemed to be more associated with CVD or thyroid medication ($p < 0.05$).