Abstracts from the 48th Annual Conference of the European Prosthodontic Association (EPA) 11th - 13th September 2025 Cappadocia, Turkey Poster Presentations

PP-001 The Effects of Mandibular Movements on Peri-Implant Bone Loss: A Radiographic Analysis

Melikenur Yılmaz, Turgut Felek, Hibanur Dağlı, Nurullah Türker

(Department of Prosthodontics, Faculty of Dentistry, Akdeniz University, Antalya, Turkey, Department of Information Technologies, Akdeniz University, Antalya, Turkey)

AIM: The aim of this retrospective pilot study was to evaluate the possible effects of mandibular flexion and torsion on bone loss in single-piece full-arch implant-supported fixed restorations in the mandible.

METHOD: Sixteen patients with no systemic diseases, implant placement in both mandibular segments, extending distal to the premolars, fixed prosthesis and radiographic follow-up of at least one year were included in the study. Patients were divided into two groups as “single-piece” and “segmented” according to restoration designs. Bone levels were measured on panoramic radiographs on the mesial and distal surfaces of the most distal implants in both segments and bone changes due to mandibular flexion and torsion were evaluated. The data obtained were analyzed using SPSS (v.25; IBM Corp., Armonk, NY, USA) software.

RESULTS: The measurements of bone resorption revealed inconsistent results. Resorptive findings around the right implants differed from those observed around the left implants. Although the difference was statistically significant, the discrepancy between the measurement regions could not be clearly explained. Bone changes over time were generally observed to be less in patients with a segmented superstructure compared to the single-piece group.

CONCLUSION: The findings of the study suggest that the segmented superstructure design may provide a potential advantage in limiting bone loss due to mandibular flexion and torsion. However, this difference was not consistently observed at all measurement points, suggesting the need for further studies with larger samples.

Keywords: Mandibular flexion, Mandibular torsion, Peri-implant bone loss, Panoramic radiography, Full-arch implant restoration

PP-002 This case presentation describes the treatment of a patient with a missing tooth number 15 using implant-supported restoration

Oğuzhan Çelik

(Department of prothesis, Çukurova University,Adana,Turkey)

Case Description: A 39-year-old female patient presented to the Department of Prosthetic Dentistry at Çukurova University Faculty of Dentistry with a missing tooth number 15. During the examination, an unsuitable gum profile was observed as a result of long-term tooth loss, and gum shaping was planned after the implant treatment. The implant was placed and osseointegration was awaited. Three months later, the second surgery was performed and the healing cap was

placed. An impression was taken from the patient using the closed impression technique and a model was prepared. The impression post was removed from the model and carved to match the gum line we wanted to achieve. A closed impression post was used as a temporary support, and a temporary prosthesis was made using composite-based temporary prosthesis material. Gum shaping was expected to take two weeks. Once the appropriate gum profile was achieved, an impression was taken with type A silicone over the temporary prosthesis. The temporaries were placed in the impression, and a model was obtained. Subsequently, a monolithic zirconia restoration on a Ti-base was delivered to the patient.

Discussion: Before proceeding with the fabrication of a permanent prosthesis after implantation, soft tissue shaping is necessary to create an appropriate gum transition profile. The stable and appropriate soft tissue contour obtained must be transferred to the permanent restoration. It is very important at this stage to transfer the exact shape of the gingiva to the laboratory. After the temporary prosthesis is removed, gingival contraction must be minimised. For this purpose, taking an impression over the temporary prosthesis and pouring plaster after placing the temporary prosthesis inside the impression is an appropriate method as it is a quick and effective method.

Keywords: prosthetic rehabilitation, emergence profile, sof tissue contour

PP-003 Evaluation of the Effect of Stabilization Splint on Chewing Function in Temporomandibular Disorders: A colorimetric technique using two-colored gum

Kevser Karakaya, ÖZER İŞİSAĞ, Kader Canlı, Senanur Yıldız, PELİN KÜNARCI
(Department of Prosthodontics, Afyonkarahisar University of Health Sciences, Afyonkarahisar, Turkey)

OBJECTİVES: Temporomandibular disorders (TMD) are common clinical conditions that affect basic functions such as chewing, speaking, and swallowing, reducing the quality of life. Stabilization splints are frequently used treatment methods, especially in muscle-induced TMD. This study investigated the effect of stabilization splints on chewing function in individuals with muscle-induced TMD by objectively evaluating chewing efficiency with the two-color gum test.

MATERIALS AND METHODS: The study included 27 persons with muscle-related TMD (study group), diagnosed through clinical and radiographic examination, and 27 healthy persons without TMD symptoms (control group). The study group used stabilization splints during nighttime for 6 weeks. Chewing efficiency was evaluated according to the degree of color mixing in the chewed gum with the two-color gum test and ViewGum software. Data were analyzed with a paired sample t test and Mann-Whitney U test ($p<0.01$ was accepted as the significance level).

RESULTS: The mean VOH value of the study group before splinting was 0.497, after treatment 0.184 and in the control group 0.108. There was a statistically significant difference between all groups ($p<0.001$). A significant increase in chewing efficiency was observed after splinting treatment ($p<0.01$), but even after treatment, the efficiency remained lower than in the control group.

CONCLUSIONS: Stabilization splint therapy significantly enhances masticatory efficiency in patients with muscle-related TMD. However, despite the improvement, efficiency does not reach the level observed in healthy individuals. While this situation demonstrates the effectiveness of the treatment, it also reveals that optimal function is not fully achieved.

Keywords: Chewing efficiency, chewing gum, temporomandibular disorder, stabilization splint

PP-004 Multidisciplinary approach to a patient with deep bite

Merve Çetinkaya[1], Ulviye Şebnem Büyükkaplan[1], Mükerrem Hatipoğlu[2], Zilan Beyaztaş[2]

([1]Department of Prosthodontics, Faculty of Dentistry, Akdeniz University, Antalya, Turkey; [2]Department of Periodontology, Faculty of Dentistry, Akdeniz University, Antalya, Turkey)

INTRODUCTION: Deep bite is a malocclusion characterized by excessive vertical overlap of the maxillary incisors over the mandibular incisors. It can lead to both functional and aesthetic problems. This case report presents prosthodontic and periodontal approaches used to address aesthetic concerns, such as excessive visibility of the upper anterior teeth at rest and increased gingival display during smiling. The treatment aimed to increase the vertical dimension of occlusion and enhance smile aesthetics.

Case Description: The patient exhibited irregular incisal edge and gingival margin levels in the maxillary anterior region, which were not consistent with an ideal natural appearance. Periodontal surgery, including alveolar bone recontouring, was performed from tooth #12 to tooth #23 to correct the gingival

levels, and crown lengthening procedures were carried out. Due to the excessively low position of the incisal edges of the maxillary central incisors, root canal treatment was performed to prevent potential pulp chamber perforation during tooth preparation. To increase the vertical dimension of occlusion, the teeth were prepared and restored with metal-ceramic restorations, achieving the desired occlusal height.

Discussion: In cases of deep bite, a multidisciplinary approach is required to achieve both aesthetic and functional improvements. In this case, crown lengthening and bone recontouring procedures performed through periodontal surgery successfully brought the gingival levels to an ideal position during smiling and corrected the smile line. Increasing the occlusal vertical dimension through prosthetic dental treatment not only balanced the patient's facial proportions, resulting in an aesthetic smile, but also improved functional occlusion. The combined evaluation of surgical and prosthetic approaches provides an effective method for successfully enhancing both occlusal vertical dimension and smile aesthetics in patients with deep bite and aesthetic concerns.

Keywords: Deep bite, vertical dimension, metal-ceramic restorations, smile aesthetics

PP-006 Digitally Fabricated Custom Esthetic Guide; A Case Report

Mahya Rastgar Safari, Demet Çağıl Ayvalıoğlu Şamiloğlu, Selin Özkan Dayıoğlu

(Department of Prosthodontics, Faculty of Dentistry, Istanbul, Turkey)

INTRODUCTION: The combination of partial edentulism and asymmetry of anterior teeth in the esthetic zone presents a significant challenge for clinicians. This clinical scenario requires comprehensive knowledge of restorative management, achieving symmetry between the edentulous area and the adjacent anterior teeth remains particularly challenging and anterior guidance is crucial for functional aesthetic harmony. This case describes the comprehensive management of a patient with severe anterior tooth and bone loss wear using a digitally fabricated customized anterior esthetic guide to reconstruct functional and esthetic dynamics.

Case Description: A 41-year-old female patient presented with partial edentulism at site 21, a worn incisal edge, and facial defects on tooth 11. Minimally invasive implant placement was performed at site 21.Due to the greater length of the edentulous ridge compared to tooth 11, a guide was designed to assist in achieving symmetrical esthetics. Using the digitally fabricated customized guide, a direct composite restoration was performed on tooth 11, and a composite build-up was used to create a temporary abutment for soft tissue shaping and esthetic rehabilitation. After osseointegration, the temporary crown was replaced with the final restoration.

Discussion: Customized anterior esthetic guide offers a biomechanically and esthetically precise way to transfer validated esthetic and functional dynamics into the final prosthesis. Integrating digital smile design and mock-up validation with functional customization enables a patient-specific and interdisciplinary treatment approach. This workflow improves predictability and allows clinicians to harmonize form and function in complex aesthetic rehabilitations.

Conciliation: A well-planned single implant restoration combined with a composite veneer, aided by a custom guide, successfully met the patient's esthetic demands. This technique bridges functional and esthetic diagnostics with definitive prosthetics, particularly in cases with anterior tooth loss.

Keywords: CAD/CAM, Additive Manufacturing, Digital Dentistry

PP-007 3D Printed Resin Restorations: Osteogenesis Imperfecta Case Report

Buse Uçar, Koray Soygun

(Çukurova Üniversitesi Diş Hekimliği Fakültesi Protetik Diş Tedavisi Bölümü)

Osteogenesis Imperfecta (OI) is a genetically inherited disorder that affects connective tissue and results from a defect in type I collagen synthesis. This disease can be characterized by blue sclera, hearing loss, short stature and especially skeletal deformities. In approximately 50% of patients, Dentinogenesis Imperfecta (DI) affecting the teeth is also present. Dentinogenesis Imperfecta (DI) associated with OI severely compromises the structural integrity of the teeth and makes prosthetic rehabilitation difficult. Removable partial dentures may be preferred for early tooth loss in childhood. In the presence of mild OI, fixed prosthetic bridge restorations may be preferred when intact teeth are present.

An 18-year-old male patient who was admitted to the Department of Prosthodontics, Çukurova University Faculty of Dentistry, presented with moderate OI and DI. Fixed prosthetic bridge restorations made of 3d printed resin material were planned for the upper jaw with congenital tooth deficiency and diastemas. In the mandible, partial edentulism was present and a removable partial denture was planned with teeth number 36 and 46 as abutments. An aesthetic and functional result was aimed by increasing the occlusal vertical dimension.

The presence of intact support teeth was effective in choosing fixed prosthetic treatment in the maxilla. Since the crown lengths of the existing teeth were short and the masticatory

force would be low due to partial edentulism in the lower jaw, resin material was preferred in bridge production. The design was first fabricated from 3D printed resin material as a temporary and then as a permanent restoration. In patients with Osteogenesis Imperfecta, it is important to complete prosthetic treatment in the shortest time and in the simplest way without risking the patient's systemic health. Individualization of prosthetic treatment options is important for long-term success. Routine controls are required.

Keywords: osteogenesis imperfecta, 3D printed resin, prosthetic bridge

PP-008 A case of amelogenesis imperfecta: increase of the occlusal vertical dimension with a 3D-printed prosthodontic approach

Enes Akpınar, Sina Saygılı, Berk Bilgen, Olcay Şakar

(Department of Prosthodontics, Istanbul University, Istanbul, Turkey)

INTRODUCTION: Amelogenesis imperfecta is a hereditary condition characterized by defective enamel formation, leading to functional and esthetic challenges. This case report describes the prosthetic rehabilitation of a young female patient with ankylosed primary teeth, enamel hypoplasia, and compromised permanent dentition. Treatment involved vertical dimension increase using 3D-printed composite restorations.

Case Description: A 21-year-old female diagnosed with amelogenesis imperfecta presented with multiple ankylosed primary teeth and several permanent teeth exhibiting pulp calcifications and root resorption. Although an overdenture was initially considered, a fixed prosthetic approach was chosen. A single-unit restoration using Saremco Crowntec was selected for the final prosthetic rehabilitation. To minimize the risk of retention-related complications, single-unit restorations were planned for both arches. The maxillary restorations were completed first; however, chipping occurred in the incisal region within one month. The maxillary prosthesis was remade simultaneously with the mandibular restoration. No complications were observed at the 3- and 9-month follow-ups.

Discussion: Prosthetic rehabilitation of young patients with amelogenesis imperfecta requires a comprehensive approach. Provisional restorations are critical for assessing vertical dimension and preparation-free feasibility, especially when clinical crown height is limited. Due to the limited crown height, a single-unit restoration design was chosen. Saremco Crowntec—a high-strength, 3D-printable composite resin—was used because of its lightweight nature and compatibility with adhesive cementation. While 3D-printed composite materials offer a minimally invasive and efficient solution, they may be more prone to mechanical complications. Proper occlusal harmony and careful material selection are key to long-term success. Additionally, to address discoloration associated with composite-based materials, attention should be paid to post-processing protocols, including thorough post-curing and polishing to ensure both longevity and esthetic stability. Despite some limitations, the use of 3D-printed resin materials allowed for a minimally invasive, efficient, and satisfactory short-term outcome in this complex case.

Keywords: Amelogenesis imperfecta, Occlusal vertical dimension, 3D printing

PP-010 A Lightweight and Durable Solution for Advanced Bone Loss: Trilor-Based Hybrid Prosthesis Case Report

Enes Korkmaz, Şükriye Ece Geduk

(Department of Prosthodontics, Zonguldak Bülent Ecevit University Faculty of Dentistry, Zonguldak, Türkiye)

INTRODUCTION: Although metal frameworks are commonly used in full arch implant-supported prostheses, fibre-reinforced composites (FRCs) have recently emerged as an promising alternative. Among these materials, Trilor is a lightweight and biocompatible material, offering advantages such as shock absorption and satisfactory hardness.

Case Description: A 53-year-old female patient attended our clinic because of complete edentulism of the upper jaw. Due to severe bone resorption and an interocclusal distance of 15 mm, all-on-five implant-supported hybrid prosthesis was planned. Following successful osseointegration of the implants, impressions were initially taken using the closed tray technique with polyvinyl siloxane material on multi-unit abutments. For the definitive impression, open-tray impression copings were splinted with teflon tape and pattern resin on the master cast, then sectioned and repositioned intraorally for accuracy. Final impressions were obtained using the open tray technique with polyvinyl siloxane material. Final prosthesis design was created using temporary restorations produced with 3D printer. Trilor bar and monolithic zirconia restoration were produced using subtractive manufacturing in accordance with this design.

Discussion: FRC materials are increasingly being used in place of metal frameworks in prosthetic dentistry. Studies have shown that FRC-based prostheses offer favorable aesthetics, functional durability, and lower stress transmission to the alveolar bone. Clinical reports also indicate high patient satisfaction, biological compatibility, reduced prosthetic complications, and minimized marginal bone loss due to the shock-absorbing properties of FRC. In this case, both clinical and radiographic evaluations at the 1st and 3rd months revealed no complications, and the patient reported high satisfaction with the outcome.

Keywords: Fiber-Reinforced Composites, Implant-Supported Prosthesis, Zirconia, Bone Resorption, CAD/CAM

PP-011 A Simple Alternative Solution Using Hybrid Ceramic Blocks for Porcelain Chipping in Implant-Supported Porcelain Fused Metal Prostheses

Haydar Albayrak, Ravza Eraslan

(Erciyes University, Faculty of Dentistry, Department of Prosthodontics)

INTRODUCTION: Implant-supported metal-ceramic prostheses widely used for full arch and partial rehabilitation of missing teeth owing to their high mechanical stability, acceptable esthetics, cost effectiveness relative to all ceramic systems, and favorable long term clinical outcomes. However, porcelain chipping remains a common complication leading to patient discomfort, additional chair time, and increased costs. In such cases, rather than removing and refiring the entire restoration—which risks distortion, shrinkage, or cracking of the ceramic—it may be preferable to perform a localized repair limited to the chipped area. To propose a simplified alternative and minimally invasive approach for addressing porcelain chipping in metal-ceramic implant-supported prostheses.

Case Description: A 44-year-old female patient presented with porcelain chipping in the maxillary right premolar region (teeth #13–14) several years after the completion of a metal-ceramic implant-supported prosthesis. The original prosthesis was a single-piece, full-arch maxillary restoration. Replacing the entire structure would require high-temperature furnace processing for porcelain layering, which carries substantial risks of material shrinkage and fracture. Instead, a conservative approach was adopted: the affected area was prepared like a tooth preparation, followed by conventional silicone impression-taking and digitization of the model to facilitate a digital workflow. The prosthetic design preserved the original tooth morphology, and a hybrid ceramic CAD/CAM block (GC Cerasmart) was selected as the restorative material. Dual-cure adhesive resin cement was used for bonding. Discussion: At 18 months of follow up, the repair exhibited excellent functional and esthetic stability, with only minimal surface staining noted and no further chipping or debonding.

Keywords: Porcelain chipping, implant supported prosthesis, porcelain repair, hybrid ceramic CAD/CAM block

PP-012 A study on the impact of sugary beverages intake on the oral microbiota of school-aged children

Pan Zhang

(Department of Stomatology, Chongqing Tongliang District Traditional Chinese Medicine Hospital, Chongqing, China)

Background: Previous studies indicated a relationship between general beverage consumption and oral ecosystem, yet the impact of sugar-sweetened beverages (SSBs) on the composition and functional potential of the oral microbiota in children remains unknown. We aim to investigate the relationship between SSBs consumption with oral microbiota diversity and function among school-aged children.

METHODS: A total of 180 children were included in the study as part of an ongoing cohort study of child growth and development initiated in 2016. Oral microbiota in buccal swab samples was collected from them for 16S rDNA gene sequencing.

RESULTS: Higher SSBs consumption (1 serving/day) was associated with lower oral microbiota richness and diversity. Children who consumed higher amounts of sugary beverages had reduced abundance of Fusobacterium, Lachnoanaerobaculum, Soonwooa, Tannerella and Moraxella ($p<0.05$). However, higher consumption of sugary beverages selectively increases the predominance of acid-resistant bacteria (Neisseria and Streptococcus), which may lead to dental caries and other oral problems. In addition, PICRUSt analysis showed that oral microbial communities were more inclined to activate protein export pathways ($p=0.020$), D-glutamine and D-glutamate metabolism pathways ($p=0.013$), and pantothenic acid and coenzyme A biosynthesis pathways ($p=0.004$), which suggests that microbial metabolism is robust in the oral bacterial communities of children who consume more sugary beverages.

CONCLUSION: Higher SSBs consumption may disturb oral microecology and reduce diversity of microbiota during childhood, stimulating an increase in cariogenic genera, which contributes to increased susceptibility of SSBs-related oral diseases.

Keywords: Sugar-sweetened beverages,oral microbiota,children,microbial metabolism,cariogenic genera

PP-013 Accuracy and speed of three intraoral scanners: a clinical comparative study

Andrei-Bogdan Faur, Anca Jivanescu

(Department of Prosthodontics, University of Medicine and Pharmacy "Victor Babes", B-dul Revolutiei 1989, No. 9, 300580 Timisoara, Romania; TADERP Research Center, Department of Prosthodontics, University of Medicine and Pharmacy "Victor Babes", B-dul Revolutiei 1989, No. 9, 300580 Timisoara, Romania)

OBJECTIVE: To evaluate and compare the accuracy (trueness and precision) and scanning time of three intraoral scanners—Medit i700, Primescan 1, and COXO DL-300P—within a standardized clinical setting, using a digitized high-accuracy analog impression as reference.

MATERIALS-METHODS: A 50-year-old male patient requiring fixed prosthetic rehabilitation on natural abutments (2.5, 2.7, 3.5, 3.8) was selected. Each scanner was used by the same experienced clinician to acquire 10 consecutive scans in a rotational sequence. Scanning time was recorded for full-arch scans. Accuracy evaluation focused exclusively on isolated areas of interest: the upper jaw included prepared abutments and surrounding mucosa, and the lower jaw included only the abutment surfaces. A VPS impression was taken, poured with type IV dental stone, and digitized with a high-accuracy desktop scanner for reference. Scan data were analyzed using Geomagic Control X for 3D comparison, and statistical analysis was conducted using MedCalc ($\alpha = 0.05$).

RESULTS: Upper Jaw (Abutments and Mucosa): Medit i700 demonstrated the highest trueness (100.3 ± 6.6 µm), significantly outperforming Primescan (116.1 ± 17.7 µm) and COXO (115.0 ± 5.8 µm) ($p = 0.008$). COXO showed the best precision (57.4 ± 36.3 µm), followed by Medit (64.9 ± 21.5 µm), with Primescan showing significantly greater variability (115.7 ± 51.6 µm) ($p < 0.0001$). Primescan achieved the shortest scan time (72.5 ± 3.8 s) ($p = 0.001$). Lower Jaw: (Abutment Surface Only): Medit again exhibited superior trueness (193.1 ± 63.4 µm) versus Primescan (505.2 ± 291.5 µm) and COXO (492.8 ± 347.2 µm) ($p = 0.005$). COXO showed the widest variability in precision ($p = 0.0004$). Scanning times showed no significant differences ($p = 0.068$).

CONCLUSION: Medit i700 showed the best overall accuracy. Primescan was fastest but less precise. COXO, while low-cost, showed acceptable precision with higher variability, supporting its selective clinical viability.

Keywords: Intraoral scanner, Trueness, Precision, Digital impression, Scanning time

PP-014 Aesthetic and Functional Prosthetic Rehabilitation of an Adult Patient with Bilateral Cleft Lip and Palate: A Case Report

Nesim Şahin, Sedanur Turgut, Gizem Çetin

(Department of Prosthodontics, Karadeniz Technical University, Trabzon, Turkey)

INTRODUCTION: Cleft lip and palate (CLP) is a congenital anomaly that adversely affects facial esthetics and craniofacial functions. Patients with CLP often experience lifelong social, functional and psychological challenges due to limitations in speech and physical appearance. This case presents the prosthetic rehabilitation of a CLP patient with high expectations regarding of phonation, function, and esthetics.

Case Description: A 27-year-old male patient with a history of bilateral cleft lip and palate, who had completed previous surgical and orthodontic treatments, presented to our clinic for enhancement of chewing function and esthetics. Although the patient received orthodontic therapy, ideal occlusion had not been achieved. To correct malocclusion and improve esthetic appearance, a full-arch rehabilitation of the maxilla using zirconia-based ceramic restorations was planned. Teeth 11 and 21 were extracted due to periodontal reasons. 12 and 22 were constantly absent and teeth 13 and 23 that had migrated mesially were prepared in the form of lateral incisors. After tooth preparation, digital impressions were taken. The occlusal adjustments of the zirconia-supported porcelain crowns (Katana HTML) were performed and occlusion was optimized. Restorations were cemented using resin cement. At the 6-month postoperative follow-up, no complications were observed.

Discussion: In patients with cleft lip and palate, following the completion of surgical and orthodontic treatments, prosthetic rehabilitation may be required to replace missing teeth and establish functional occlusion. In cases where tooth loss is limited, fixed prosthetic treatments provide favorable outcomes and can also contribute to splinting. Zirconia-based ceramic restorations are often preferred in full-arch rehabilitations due to their superior esthetics and mechanical strength. As the premaxillary region is often developmentally compromised in CLP patients, prosthetic rehabilitation plays a critical role. In the presented case, the anterior modifications in the preparations enhanced esthetics; and favorable force distribution was allowed through the full-arch restorations

Keywords: Cleft lip and palate, zirconia, full-arch treatment

PP-015 Aesthetic Management of Single Tooth Implant-Supported Restoration in the Anterior Maxilla: A Report of Three Cases

Elif Çilli, Ceren Küçük

(Department of Prosthodontics, Marmara University, İstanbul, Turkey)

INTRODUCTION: In modern dentistry, aesthetic demands—particularly among younger patients—have significantly increased, especially for restorations in the anterior maxillary region. Single-tooth loss in this zone requires precise planning, optimal material selection, and effective soft tissue management to achieve natural-looking outcomes. Implant-supported restorations have become the gold standard, offering excellent aesthetic and functional results.

Case Description: This clinical report presents three cases of anterior single-tooth loss treated at the Department of Prosthodontics, Marmara University. All patients were systemically healthy and received implant-supported restorations following detailed clinical and radiographic evaluations. After implant placement and osseointegration, soft tissue contouring was performed using flowable composite around the healing abutments to establish an ideal emergence profile. Closed-tray impressions were taken, and master casts were fabricated. Try-ins were conducted to evaluate aesthetics, phonetics, marginal fit, and occlusion. After final adjustments, restorations were characterized, glazed, and cemented with polycarboxylate cement. Oral hygiene instructions were provided. No biological or technical complications were observed at the 1st, 3rd, or 6th-month follow-ups.

Discussion: Anterior single-tooth implant restorations present both functional and aesthetic challenges. Recent advancements in implant design and all-ceramic restorative materials have enabled clinicians to achieve outcomes closely resembling natural teeth. Soft tissue management, particularly in shaping the emergence profile, plays a vital role in achieving aesthetic harmony. These cases underline the predictability and effectiveness of implant-supported all-ceramic restorations in meeting high aesthetic expectations in the anterior maxilla.

Keywords: Implant-supported restorations, Single-tooth replacement, Soft tissue management, Emergence profile, Aesthetic dentistry

PP-016 Aesthetic rehabilitation of discolored teeth using digital smile design and porcelain laminate veneers

Hatice Eroğlu[1], Nazmiye Şen[2]

([1]PhD student, Department of Prosthodontics, Faculty of Dentistry, Istanbul University, Health Science Institute, Istanbul,Turkey; [2]Associate Professor, Department of Prosthodontics, Faculty of Dentistry, University of Istanbul, Istanbul, Turkey)

INTRODUCTION: Rehabilitation of discolored teeth is a challenging clinical procedure and should be treated with an interdisciplinary approach. In this case report, complete arch porcelain laminate veneers were applied following digital smile design (DSD). DSD helped to achieve prosthetic rehabilitation with improved esthetic outcome and patient satisfaction.

Case Description: A 57-year-old man sought care at the Department of Prosthodontics, Faculty of Dentistry clinic with a chief complaint of discolored teeth and with a request for his teeth to be aesthetically restored. A treatment plan was developed based on clinical and radiographic evaluation to apply porcelain laminate veneers on both maxillary and mandibular teeth. This was followed by a comprehensive smile analysis using DSD (Romexis Software; Planmeca USA, Inc). Before teeth preparation, diagnostic mock-ups were applied for esthetic, functional, and phonetic evaluation. Minimally invasive tooth preparation was planned and guided by intraoral mock-ups. Design of teeth preparation included the incisal edges with equigingival chamfer margins and an average tooth reduction amount of 0.4 to 0.7 mm on the labial surfaces. Laminate veneers were designed virtually and milled out via CAD-CAM system. Lithium disilicate ceramic was the selected restorative material for fabrication. Then the veneers were prepared for adhesive cementation using 5% hydrofluoric acid gel for 20 seconds. The laminate veneers were cemented under isolation using light-cured resin cement and light-polymerized for 40 seconds Follow-up appointments were scheduled for 6 months at the first year and then annually. Four years after the treatment, no prosthetic complications were observed. **Discussion:** Laminate veneer restorations applied on discolored teeth provided functional, aesthetic and phonetic patient satisfaction. Thus, fixed prosthetic rehabilitation with laminate veneers could be considered as a reliable treatment modality with high patient satisfaction. Using DSD helped to achieve rapid prosthetic rehabilitation and provided pleasant esthetic and functional results for patient with discolored teeth.

Keywords: digital smile design, laminate veneers, lithium disilicate ceramic, CAD-CAM system, discolored teeth

PP-017 An alternative technique for concealing an implant screw access hole in the esthetic zone

Tuğba Sizgen, Süleyman Hakan Tuna

(Department of Prosthodontics, Faculty of Dentistry, Dokuz Eylul University, Izmir, Turkey)

Achieving ideal esthetics in implant-supported restorations in the anterior region can be challenging, especially when the screw access hole is located on a visible surface. Traditional masking techniques such as opaquer or composite fillings often fall short in terms of color stability, translucency, and surface texture. Thus, they may fail to meet esthetic expectations in the anterior maxilla. This case report presents an alternative technique for concealing a screw access hole in the esthetic zone.

A 52-year-old female patient presented with partial edentulism in both anterior and posterior maxillary regions. A fixed implant-supported bridge was planned. During planning, a 30° multi-unit abutment was used to position the screw access hole palatally on the right maxillary central incisor (tooth #11). However, despite the abutment angulation, the access hole appeared on the labial and incisal surfaces, creating a significant esthetic concern.

To solve this issue, a metal-ceramic component resembling a partial laminate veneer was digitally designed using dental design software. This 1.5 mm thick cover piece was fabricated to match the adjacent porcelain in terms of contour, translucency, and texture. Its intaglio surface was sandblasted and bonded with resin-modified glass ionomer cement. At the one-year follow-up, the restoration preserved its esthetic stability, and the patient reported high satisfaction.

Several techniques have been described for managing screw access hole-related esthetic problems, including opaque composites, pink ceramics, prefabricated ceramic caps, and opaquer materials. Recently, angulated screw channel (ASC) systems have been introduced to direct screw access toward less visible areas. However, ASC systems require specific component compatibility and may not suit every clinical case. The technique described here provides a practical and effective solution that maintains esthetic harmony without requiring ASC systems.

Keywords: dental implants, screw-retained implant, dental esthetics, metal-ceramic, screw access hole

PP-019 Anatomy of the articular eminence of the temporomandibular joint in American populations

Josip Kranjcic[1], Josip Vuksic[1], Sanja Persic[2], Petra Rajcic[3], Denis Vojvodic[1]

([1]University of Zagreb School of Dental Medicine, Dubrava University Hospital, Zagreb, Croatia; [2]University of Zagreb School of Dental Medicine, Zagreb, Croatia; [3]Private Dental Practice, Zagreb, Croatia)

Objectives: Condylar path inclination (CPI) and articular eminence height (AEH) are important biomechanical factors in mandibular movements. The purpose of this research was to measure the CPI and AEH values in samples from contemporary American populations.

Materials and methods: The study was conducted on digital scans of 60 skulls (20th century): 30 skulls of American Caucasians and 30 skulls of African Americans. Digital scans of the articular eminence and glenoid fossa were obtained using an Atos Core 135 optical scanner, scanning silicone impressions of the articular eminence and glenoid fossa. Measurements of the CPI and AEH were taken through five virtual sections of the articular eminence, from lateral to medial. The CPI and AEH values were expressed as the mean of the five values from the sections. CPI was defined as the angle formed by the Frankfurt horizontal plane and the line connecting the highest point of the glenoid fossa with the lowest point of the articular eminence. AEH was measured in millimeters as the distance from the most superior to the most inferior point of the articular eminence. Results were interpreted at a significance level of 0.05.

RESULTS: There were no statistically significant differences in CPI and AEH values between the African American and American Caucasian samples ($p>0.05$). Additionally, there were no statistically significant differences between the left and right values for CPI and AEH ($p>0.05$). The mean CPI values ranged from 36.26° to 38.72°, while the AEH values ranged from 6.60 to 6.86 mm.

CONCLUSIONS: Based on the results, it can be concluded that CPI and AEH values are variable, but the differences are very small and statistically insignificant.

Keywords: Temporomandibular joint, African Americans, Native Americans

PP-020 Assessment of the accuracy of digital impressions according to finish line design: pilot study

Ilgi Tosun, Göksel Doğan

(Department of Prosthodontics, Onsekizmart University, Canakkale, Turkey)

OBJECTIVES: Aim of this pilot study is to evaluate accuracy of digital impressions obtained from models with different finish line designs using a small sample group.Digital impressions will be acquired from teeth with identical morphology but prepared with various finish line types, and their trueness and precision (together representing overall accuracy) will be compared.

MATERIALS-METHODS: Preparations with three different finish line designs (shoulder, chamfer, knife edge) were performed on three teeth with identical morphology on phantom models. All three models were scanned using both intraoral scanner and model scanner to obtain digital data in Standard Tessellation Language (STL) format. Resulting STL files were compared using CloudCompare software. This software was used to calculate mean distance and standard deviation values. Mean distance value indicates trueness, while standard deviation value indicates precision.

RESULTS: Mean distance values for finish lines were found to be 0.0000859419 (shoulder), 0.00418655 (chamfer), and 0.018287 (knife edge), respectively. Standard deviation values for finish lines were found to be 0.0213947 (shoulder), 0.0341955 (chamfer), and 0.0638342 (knife edge), respectively. When ranked from smallest to largest, both mean distance and standard deviation values followed order; shoulder, chamfer, knife edge.

CONCLUSIONS: When accuracy of digital impressions was compared based on finish line design, shoulder finish line demonstrated highest accuracy, followed by chamfer and then knife edge, which showed lowest accuracy. Finish line design was found to have influence on accuracy of digital impressions. In this pilot study, STL files with shoulder finish line exhibited highest accuracy when compared using CloudCompare software.

Keywords: Digital impression, tooth preparation, finish line design, three dimensional imaging, computer aided design (CAD), CloudCompare

PP-021 Association of educational level and oral health parameters in older adults

Anđelo Škare[1], Marin Hafizović[1], Marija Pavić[1], Iva Vidalina[1], Larisa Musić[2], Amir Ćatić[3]

([1]Students, School of Dental Medicine, University of Zagreb, Croatia; [2]DMD, PhD, Department of Periodontology School of Dental Medicine, University of Zagreb, Croatia; [3]DMD, PhD, full time professor, Department of Fixed Prosthodontics, School of Dental Medicine, University of Zagreb, Croatia)

BACKGROUND-AIM: The aim of this research was to evaluate the relationship between educational level and two oral health parameters – number of functional dental units and oral hygiene status – among older adults in Zagreb, Croatia.

METHODS: This cross-sectional study was conducted as part of a student-led volunteering initiative „Geronto project", offering free oral health screenings to individuals aged 65 and older. A total of 58 participants were assessed for functional dental units, of which 37 were further evaluated for oral hygiene. Participants were categorized based on their self-reported highest achieved level of education. Functional dental units were quantified during clinical examination. Oral hygiene status was classified into four predefined categories. Statistical analyses were performed to assess associations between education level and oral health indicators.

RESULTS: Participants with higher educational level exhibited a greater number of functional dental units. The median number of functional units was 2 among those with secondary education and 8 among those with postgraduate education, indicating a positive correlation. However, no statistically significant relationship was observed between educational level and oral hygiene status among the 37 participants evaluated for this outcome.

CONCLUSION: The findings suggest that higher educational level may be associated with better dental functionality in older adults. However, no significant correlation was identified between education and oral hygiene, possibly due to the small sample size and potential self-reporting bias. Further research involving a larger sample is warranted to further explore these associations.

Keywords: health disparities, oral hygiene, elderly oral health, functional dental units, educational level

PP-023 Breaking barriers: Implant treatment of a medically compromised patient. A hybrid approach to full-arch rehabilitation

Athina Niakou[1], Athanasios Stratos[2], Konstantinos Michalakis[3]

([1]Postgraduate student, Department of Prosthodontics, Faculty of Health Sciences, School of Dentistry, Aristotle University, Thessaloniki, Greece; [2]Private practice limited to Prosthodontics and Implant Dentistry, Thessaloniki, Greece; [3]Professor and Chair, Department of Restorative Sciences and Biomaterials, Boston University Henry M. Goldman School of Dental Medicine, Professor, Boston University Center for Multiscale and Translational Mechanobiology, Boston, Massachusetts, USA)

INTRODUCTION: Restoring a severely deteriorated dentition of a medically compromised patient presents a challenge, as treatment, healing, and long-term success outcome may be negatively affected. This case refers to the full-mouth rehabilitation of a patient with terminal dentition and systemic health concerns. A comprehensive, staged treatment plan was designed, integrating both conventional and digital workflows.

Case Description: A middle-aged Caucasian male presented with chief complaint of severe aesthetic and functional impairment, expressing embarrassment about his teeth, social withdrawal, and difficulty in enjoying food. His medical history included HIV-positive status (under antiretroviral therapy) and renal failure requiring hemodialysis three times per week. Clinical and radiographic examination revealed multiple defective cast restorations, extensive carious lesions, excessive amounts of plaque and generalized gingival inflammation, consistent with findings in approximately 30% of HIV-positive adults. A detailed treatment plan was developed, after consultation with his medical doctor, to ensure optimal implant placement and long-term success. As patient objected removable provisional prostheses, a tripod full-arch fixed provisional was fabricated. The therapeutic protocol included:

1. Pre-prosthetic preparation, including autogenous onlay bone grafting and sinus augmentation (CBCT-guided)
2. Post augmentation CBCT and implant placement for implant-supported fixed complete dentures
3. Definitive impression procedures, facebow transfer, centric and eccentric occlusal records
4. Analog and digital mounting and CAD/CAM–assisted restorations design
5. Fabrication and delivery of metal-ceramic implant-supported fixed complete dentures.

Discussion: Clinical and radiographic follow-up examination at 4 years post-treatment confirmed stable peri-implant tissues, functional occlusion, and patient satisfaction. The successful outcome of this case reinforces findings in the literature that HIV-positive patients who are under antiretroviral therapy, demonstrate implant survival rates comparable to non-HIV individuals. Metal-ceramic restorations were used due to their superior mechanical properties, fracture resistance, and long-term durability, particularly in patients with systemic conditions, as it has been demonstrated in the literature.

Keywords: Dental implants, HIV positive patient, fixed complete denture, CAD/CAM assisted design, metal ceramics

PP-025 Clinical Evaluation of Conventional and Digital Impression Techniques in a Patient with Mandibular Ameloblastoma for Complete Denture Fabrication

Merve Türkmen, Esra Kul

(Department of Prosthetic Dentistry, Ataturk University Faculty of Dentistry, Erzurum, Turkey)

Ameloblastoma is a slow-growing benign tumor, often located in the mandible, and can significantly alter anatomical structures, complicating prosthetic treatment. In this case report, we present a patient who had refused surgical intervention for a mandibular ameloblastoma that had been growing for 30 years. To fabricate a well-fitting complete denture without exerting pressure on the affected tissues, both conventional (selective pressure technique) and digital impression methods were applied and compared.

While conventional impressions offered anatomical adaptation, they posed limitations in areas of tissue sensitivity due to direct pressure. The digital impression technique, however, minimized contact with the swollen tissue, reducing trauma and increasing patient comfort. Its ability to tolerate delicate mucosa without compressing the lesion made it a more favorable choice in this clinical setting.

Discussion: This case emphasizes the clinical advantage of digital impression techniques in edentulous patients with anatomical irregularities such as mandibular swelling. Although intraoral scanning of edentulous arches requires precision, digital methods significantly reduce soft tissue trauma by minimizing pressure on sensitive areas. Therefore, beyond being a time-saving innovation, digital impressions can be seen as a tissue-friendly alternative in patients with intraoral pathologies, improving prosthesis tolerance and clinical outcomes.

Keywords: Ameloblastoma, Complete denture, Digital impression, Selective pressure technique

PP-026 Clinical evaluation of posterior eruption with removable dahl appliance in deep bite management: a case report

Nihal Şengezer, Onur Etöz

(Department of Prosthodontics, Mersin University, Mersin, Turkey)

INTRODUCTION: A common challenge is when restoring anterior teeth is the lack of palatal space for restorative material. This is often evident in patients with anterior tooth wear and deepbite. Increasing the occlusal vertical dimension (OVD) using conventional prosthodontics can be invasive treatment including the full arch rehabilitation. Dahl principle is a conservative method for controlling incisal guidance, gaining palatal space for restorative material and increasing the OVD. The Dahl appliance is used to create space between the upper and lower jaws. This can help to separate and stimulate the posterior tooth eruption.

CASE REPORT: A 35 years old male patient applied to our clinic with complaints of mobility of maxillary central teeth and aesthetic concerns. Intraoral and extraoral examination revealed that the patient had Akerly type 2 deepbite and low vertical dimension. After discussing treatment options, occlusal extrusion of the molars was planned to increase OVD. For this purpose, a removable Dahl appliance made of polymethyl methacrylate was prepared for the patient to be placed between the maxillary canines. The patient was advised to use the appliance for 12–15 hours per day over a period of 3 months. Intraoral scans were performed before and after the treatment to evaluate changes in vertical dimension and tooth positions. Only slight differences were found according to the data obtained by superimposing the initial and final scans which were not clinically significant.

DISCUSSION: In our case, the occlusal appliance did not allow sufficient anterior clearance to be achieved. The literature indicates that the effectiveness of removable Dahl appliances is significantly influenced by patient compliance. Consequently, in cases where compliance is inadequate, the success rate of removable appliances tends to decrease, and a fixed Dahl appliance may be considered a more appropriate alternative.

Keywords: Dahl appliance, deepbite, occlusal vertical dimension, orthodontic appliances, restorative space

PP-027 Clinical Exposure Matters: Dental Students' Readiness and Attitudes Toward AI and Digital Technologies in Prosthodontics

Aybala Ece Orhan

(Department of Prosthodontics, Kırıkkale University, Kırıkkale,Turkey)

OBJECTIVES: This study aimed to evaluate dental students' knowledge and attitudes regarding artificial intelligence (AI) and digital technologies in prosthodontic treatment, and to compare preclinical and clinical year students in terms of exposure, experience, and perception.

MATERIALS-METHODS: A structured questionnaire was administered to 235 dental students from all academic years, categorized into preclinical (1st–3rd year, n=146) and clinical (4th–5th year, n=89) groups. The survey assessed self-reported knowledge of digital systems (e.g., CAD/CAM, intraoral scanners), exposure to AI in dentistry, perceived benefits of digital tools, trust in AI-supported decision systems, and willingness for further training. Data were analyzed using SPSS software. Chi-square tests were used for categorical comparisons. A p-value <0.05 was considered statistically significant.

RESULTS: Clinical students demonstrated significantly higher familiarity with CAD/CAM systems and active use of digital impression techniques ($p<0.001$). They also reported a greater intention to incorporate digital tools into their future practices. The willingness to receive advanced training in AI and digital prosthodontics was also higher among clinical students ($p<0.05$). While both groups expressed generally positive attitudes, preclinical students primarily relied on theoretical knowledge and reported lower confidence levels. Trust in AI-assisted clinical decision-making was moderate in both groups, with no significant difference.

CONCLUSIONS: Clinical exposure significantly enhances students' awareness, practical experience, and acceptance of digital technologies and AI in prosthodontics. The results support early integration of digital and AI content into dental education to improve readiness and confidence among preclinical students. Early exposure may foster a smoother transition to technology-integrated clinical practice.

Keywords: Artificial Intelligence, Dental Education, CAD/CAM, Prosthodontics, Digital Dentistry

PP-028 Clinical outcome of two-piece zirconia-implants in immediate implant placement – Preliminary results from a prospective randomized controlled clinical trial

Marlene Lindner[1], Michael Payer[2], Raoul Polansky[1]

([1]Division of Restorative Dentistry, Periodontology and Prosthodontics, Department of Dentistry and Oral Health, Medical University of Graz; [2]Division of Oral Surgery and Orthodontics, Department of Dentistry and Oral Health, Medical University of Graz)

OBJECTIVE: Traumatic tooth loss, endodontic lesions, internal or external root resorption, subgingival caries lesions or crown-root fractures represent indications for implant placement in fresh extraction sockets. Titanium has been the gold standard material for dental implants for over 40 years but has several disadvantages such as compromised esthetics due to discoloration especially of thin mucosa. The aim of this study is to assess the performance of a two-piece zirconia implant with screw-retained abutment connection in immediate implant placement.

MATERIALS & METHODS: The study was conducted as a prospective clinical randomized trial. 32 Patients were recruited and randomly allocated to either the test group or the control group. Test object was a new zirconia dental implant (Straumann PURE ®), the control object was a conventional titanium implant (Neoss Pro Active ®). Periotest values and Implant Stability Quotient were measured at time of and 4 months after implant placement.

RESULTS: 32 patients with single teeth either decayed, fractured or with periapical lesion were enrolled. Average age was 62,87±16.14. There was no statistically significant difference of Periotest levels (Zr -0.62±2.53 vs. Ti 0.47±2.10, p=0.184) and Implant stability quotient (Zr 79.19±6.74 vs. Ti 79.12±4.55, p=0.972) between both groups after 4 months of healing.

CONCLUSION: The clinical outcome in terms of osseointegration of a novel two- piece zirconia implant with screwed abutment connection presents as a reliable treatment option in the indication of immediate implant placement after a 4 month healing period.

Keywords: Immediate implant placement, zirconia, osseointegration, Periotest, Implant Stability Quotient

PP-029 Clinical Protocol for the Intraoral Repair of a Fractured Metal-Ceramic Bridge: A Case Report

Ayşe Demir, Merve Çakırbay Tanış

(Department of Prosthodontics, Gazi University, Ankara, Turkey)

Introduction: Porcelain fracture is common in long-term use of metal-ceramic bridges. Repair or replacement depends on several factors. Intraoral repair is the least invasive option. This case report presents a conservative treatment of a fractured bridge.

Case Description: A 66-year-old male patient presented to a private clinic with a partial fracture in the right mandibular first premolar region of a 10-unit metal-ceramic bridge that had been in function for 11 years, following dental trauma. Clinical examination revealed porcelain loss and exposure of the metal substructure. Due to the patient's concerns about time, cost, and esthetics associated with long-term treatment, intraoral repair was planned. Remaining glaze and bevel were removed using a fine-grit diamond bur. Gingival barrier was applied for isolation. The Bisco Intraoral Repair Kit (USA, Illinois, Schaumburg) was used according to the manufacturer's instructions. The remaining porcelain surface was conditioned with 9.5% hydrofluoric acid for 90 seconds. After drying, Porcelain Primer and Z-Prime Plus were applied sequentially. An opaquer was used to mask the exposed metal surface. Finally, a thin layer of porcelain bonding resin was applied, and the repair was completed using GC G-ænial Anterior Composite Resin. Occlusion was checked, followed by final contouring and polishing. The final outcome exceeded the patient's expectations. At a six-month follow-up, the restoration maintained function and esthetics.

Discussion: Although metal-ceramic restorations provide long-term durability, they may fail over time, most often due to porcelain veneer fractures. As long as the restoration retains functionality and replacement is not required, intraoral repair serves as a conservative alternative. Thus, when properly implemented, it offers a time-efficient, cost-effective, and esthetically acceptable outcome, often without the need for laboratory procedures.

Keywords: intraoral porcelain repair, Porcelain fracture, metal- ceramic bridge

PP-030 Clinical Solutions to Posterior Implant Setbacks: Case-Based Approaches

Şifa Oğuz, Prof. Dr. Akın Aladağ, Dr. Seniha Kısakürek

(Department of Prosthodonti, Muğla Sıtkı Koçman University, Muğla, Turkey)

INTRODUCTION: Posterior implant-supported prostheses are prone to screw loosening and fracture due to high occlusal forces. Addressing these complications requires both preventive and salvage strategies to maintain prosthetic function and implant integrity.

CASE DESCRIPTION: Case 1: A maxillary molar implant was rehabilitated using a double-screw abutment system due to poorly angulated implants. An intermediate abutment was torqued into the implant, and the crown was fixed with a secondary screw, enabling retrievability while minimizing screw loosening. At the 6-month follow-up, no complications were observed. Case 2: One implant in a full-arch implant-supported fixed restoration presented with a complication involving a retained screw fragment that could not be removed. A prefabricated solid abutment was preferred and cemented into the implant, converting it into a cement-retained restoration. This procedure avoided implant explantation and successfully restored function. Follow-up at one year showed no complications.

Discussion: These two cases illustrate alternative approaches to common implant complications. The double-screw technique provided improved joint stability and retrievability beside correcting the angles. The solid abutment technique allowed salvage of an otherwise non-functional implant, albeit as a non-retrievable prosthesis. Both methods highlight the importance of flexible prosthodontic planning and technique adaptation in managing mechanical failures. Double-screw and solid abutment strategies offer practical and effective solutions for managing screw complications in posterior implants. Both approaches underscore the importance of strategic planning and adaptation in implant prosthodontics. Selection of the appropriate technique can preserve function, avoid surgical intervention, and improve long-term treatment outcomes.

Keywords: screw fracture,solid abutment,double-screw system

PP-032 Color Stability of 3D-Printed Crown Resins Exposed to Common Beverages

Helin Yolcu[1], Ayşe Apak[2]

([1]Department of Prosthodontics, Istanbul Aydın University, Istanbul, Turkey; [2]Kocaeli University of Health and Technology)

OBJECTIVES: This in vitro study aimed to evaluate and compare the color stability of two additively manufactured composite crown materials—Saremco Crowntec and Bego VarseoSmile Crown Plus—after immersion in commonly consumed staining beverages.

MATERIALS-METHODS: Disc-shaped specimens (n = 20 per material) were fabricated from Crowntec and VarseoSmile Crown Plus using manufacturer-recommended 3D printing protocols. All specimens were polished using a standardized two-step polishing system. Baseline color coordinates (L*, a*, b*) were recorded with a spectrophotometer. Specimens were immersed in two staining solutions—coffee and red wine—at 37°C for 7 days. Color measurements were repeated at days 1, 3, and 7. The color difference (ΔE_{00}) was calculated using the CIEDE2000 formula. Statistical analysis was performed using repeated measures ANOVA ($\alpha = 0.05$). Perceptibility ($\Delta E_{00} > 1.30$) and acceptability ($\Delta E00 > 2.25$) thresholds were applied.

RESULTS: Both materials showed perceptible and time-dependent color changes in all media. Red wine caused significantly higher discoloration than coffee ($p < 0.05$). Crowntec exhibited higher ΔE_{00} values compared to VarseoSmile Crown Plus across all time points. While coffee immersion led to acceptable changes in both groups, red wine resulted in values exceeding the clinical acceptability threshold after day 3 in the Crowntec group.

CONCLUSIONS: Color stability of 3D-printed crown materials is affected by beverage type, material composition, and exposure duration. VarseoSmile Crown Plus demonstrated superior resistance to discoloration compared to Crowntec. These findings suggest material selection plays a critical role in esthetic longevity of 3D-printed restorations. This pilot investigation highlights the influence of additive manufacturing technology and resin matrix composition on discoloration dynamics. Although preliminary, the outcomes provide valuable insight for material selection in cases with high esthetic demand, and may inform future large-scale investigations aimed at long-term clinical performance validation.

Keywords: 3D printing, dental resins, color stability, staining, provisional crowns

PP-033 Combined Esthetic Rehabilitation Using Lithium Disilicate Crowns and Laminate Veneers: A Case Report

Erva Nur Gül, Merve Soydan, Bilge Ergünbaş

(Department of Prosthodontics, Hatay Mustafa Kemal University, Hatay, Turkey)

INTRODUCTION: This case report presents the esthetic and functional rehabilitation of a patient who presented with anterior crowding and dissatisfaction w.ith the appearance of existing composite restorations. The treatment involved the use of lithium disilicate crowns and veneers.

Case Presentation: A 23-year-old female patient presented to the Department of Prosthodontics at Hatay Mustafa Kemal University Faculty of Dentistry with complaints of anterior tooth crowding and recurrent loss of existing composite restorations. Clinical examination revealed composite fillings on the maxillary central and lateral incisors. The patient was offered orthodontic treatment or a prosthetic alternative. She declined orthodontic intervention and requested smile design through prosthetic restoration. Due to the presence of existing restorations and malalignment, full-coverage crowns were planned for the four maxillary anterior teeth. Lithium disilicate laminate veneers were planned for the canines, which presented with favorable alignment and sufficient enamel. Following tooth preparation, digital impressions were obtained using a retraction paste in the same session. The design was fabricated via 3D printing and evaluated intraorally for esthetic and functional verification. Final adjustments were made in accordance with the patient's preferences. Lithium disilicate restorations were fabricated using the press technique and were adhesively cemented with resin cement.

Discussion: With the rise in esthetic demands, interest in minimally invasive restorative techniques has increased. Porcelain laminate veneers are preferred for their esthetics and enamel preservation. However, severe malocclusion and insufficient enamel can hinder proper positioning and bonding. In such cases, ceramic crowns provide a more durable solution. In this case, lithium disilicate crowns were placed on the maxillary central and lateral incisors due to enamel deficiency and crowding, while laminate veneers were used on the canines, where favorable alignment and sufficient enamel allowed a conservative approach. This treatment successfully met the patient's esthetic and functional needs.

Keywords: Dental Esthetics, Lithium Disilicate, IPS e.max Press, Dental Veneers, Computer Aided Design

PP-034 Combined Lithium-Silicate Laminate Veneer and Zirconia Restoration in the Anterior Region: One-Year Follow-Up

SALİHA ORUÇ, Ali Rıza Tunçdemir, Mehmet ESAD GÜVEN

(Department of Prosthodontics, Necmettin Erbakan University, Konya, Turkey)

INTRODUCTION: Aesthetic issues in the anterior maxillary region can have a significant impact on patient confidence and oral function. Various restorative approaches, including laminate veneers and fixed dental prostheses, can be applied depending on clinical findings and patient expectations.

Case Description: A 31-year-old healthy female patient presented to the Department of Prosthodontics at NEU Faculty of Dentistry with aesthetic concerns in the anterior region. Clinical examination revealed a diastema between the right lateral incisor and canine, malformation in anterior teeth, and congenital absence of the left canine. Radiographic evaluation showed no pathology. Since central incisors were esthetically acceptable, they were excluded from restoration. Due to financial limitations, implant-supported treatment was declined. Treatment planning included lithium silicate laminate veneers for teeth #12 and #13, and a zirconia fixed partial denture for the missing #22 and #24 areas. The primary tooth was extracted, and chamfer margins were prepared on teeth #22 and #24. A temporary fixed bridge with an ovate pontic design was fabricated using 3D printed PMMA (Asiga DentaTooth). Papilla formation was monitored weekly for 21 days. Following soft tissue maturation, teeth #12 and #13 were prepared with a minimal invasive 0.3 mm reduction. A 00 retraction cord was placed and a digital impression was obtained using a 3Shape intraoral scanner. The restoration was digitally designed using Exocad with the biocopy feature for optimal symmetry. GC Initial LiSi blocks (shade 3M1) were used for laminate veneers, and Kuraray Noritake ST monolithic zirconia was used for the fixed bridge. Shade matching was achieved with a 3M1-colored stain during try-in.

Discussion: This case demonstrates that a combination of digital workflow, esthetic materials, and soft tissue management can lead to functionally and esthetically successful outcomes, even without implant use. At the 1 year follow-up, periodontal tissues were healthy, and patient satisfaction was high.

Keywords: laminate veneer, anterior restoration, zirconia

PP-035 Combined Photogrammetry and Intraoral Scanning for Full-Arch Implant in Edentulous Patient: Case Report

Dilara Şahin Hazır, Tuğba Yüktaşır Bodur, Irem Sözen Yanık, M. Barış güncü

(Department of Prosthodontics, Hacettepe University, Ankara, Turkey)

INTRODUCTION: Intraoral scanners (IOS) are widely adopted for implant-level impressions due to their efficiency and patient comfort. However, their accuracy in full-arch edentulous cases is debated, as factors like interimplant distance and mucosal mobility may compromise results. Photogrammetry, which captures images simultaneously, has demonstrated high trueness in transferring the three-dimensional implant positions, offering a potential solution. This report presents the prosthetic rehabilitation of a fully edentulous patient using a combined digital workflow incorporating IOS and photogrammetry to enhance accuracy and achieve a passive-fitting full-arch restoration.

Case Description: A 44-year-old completely edentulous male patient underwent full-arch implant rehabilitation. Thirteen implants were placed (seven in the maxilla, six in the mandible) following a staged surgical approach. After a 3-month healing period, multi-unit abutments were torqued based on prosthetic needs. A fully digital workflow was used for prosthesis fabrication. Three digital datasets were sent to the lab: (1) intraoral scans (3Shape TRIOS 5), (2) implant positions via photogrammetry (ICam4D), and (3) a facial scan for esthetic planning. This allowed precise soft tissue, implant, and facial reference capture. Provisional prostheses were milled from PMMA and assessed clinically for esthetics, phonetics, and fit. Once approved, final prostheses were fabricated from high-translucency monolithic zirconia over a custom-milled titanium bar (Ti-bar), providing mechanical strength and passive fit. The restorations were evaluated and screw-retained.

Discussion: Intraoral scanners offer efficient and patient-friendly workflows, but their accuracy in full-arch edentulous cases remains limited. Photogrammetry provides superior trueness by directly capturing implant positions. Although the ideal substructure material for full-arch implant restorations remains controversial, recent literature supports the increasing use of titanium bars due to their strength and ability to enhance passive fit with zirconia.

Keywords: Photogrammetry, Intraoral scanners, Ti-bar, monolithic zirconia

PP-036 Combining polyvinyl siloxane and window technique: Impression of the maxillary flabby ridge

Oğuzhan Akköse, Onur Etöz

(Department of Prosthodontics, Mersin University Dentistry, Mersin, Turkey)

INTRODUCTION: Flabby ridge (FR) is reported in approximately 5% of edentulous mandibles and 24% of edentulous maxillae. These resorbed ridges require special attention during impression-taking to capture the mucosa in a resting state. Various techniques and materials have been suggested to record FR with minimal tissue displacement. Among them, the window technique is commonly used.

CASE DESCRIPTION: A 65-year-old male presented to Mersin University Faculty of Dentistry, Department of Prosthodontics, with complaints about his old dentures. He had been using a total prosthesis for about 15 years and reported mobility and discomfort, along with denture stomatitis in the upper anterior region. Clinical examination revealed advanced bone atrophy and an anterior maxillary flabby ridge. Treatment began with an anatomical impression to fabricate an individual tray. The tray's anterior section was cut out to relieve pressure on the FR. Heavy body PVS was applied in the palatal and tuberosity areas to create stoppers. Border molding was performed with a thermoplastic impression compound. A light body PVS wash impression was taken, and the anterior FR area was filled externally with light body PVS. Follow-up appointments at days 1, 7, 15, and 30 showed no patient complaints after 30 days of use.

DISCUSSION: Creating a window in the tray could be a way to minimizes tissue compression, ensuring the FR is recorded in a resting state. Studies confirm that window trays cause minimal tissue distortion. Additionally, heavy body PVS helps control pressure during the light body PVS application. This case highlights an effective, modern approach to taking FR impressions using PVS instead of conventional materials.

Keywords: Flabby ridge, Dental Impression, Window technique, Polyvinyl siloxane, Complete denture.

PP-037 Comparison of different maxillary positioning methods in michigan splint design in a single patient: a case report

Büşra Üstün, Onur Etoz, Özgür Ozan Tanrıkut

(Department of Prosthodontics, Mersin University, Mersin, Turkey)

INTRODUCTION: Occlusal splints are frequently used in the treatment of muscle hyperactivity symptoms. Advances in digital dentistry have enabled new workflows in the design and production of occlusal splints. This case report aimed to compare two different maxillary positioning methods used in Exocad software for the design of Michigan splints in a single patient.

Case Description: A 22-year-old female presented with severe masticatory muscle pain and a history of bruxism. Occlusal splint therapy was initiated. Intra-oral scans were captured, and two splint designs were created: one using standard three-point maxillary positioning in Exocad, and another using spatial registration via the AxioPrisa device (SAMx, Germany). Both designs were evaluated virtually, 3D printed with Dental LT Clear V2, and then compared based on occlusal relations, clinical adjustment time, and patient-reported outcomes.

Discussion: This case report compared standard vs. AxioPrisa-assisted maxillary positioning for Michigan splint design. Registered position of maxilla with Axioprisa required significantly less chairside adjustment and was preferred by the patient for comfort. Additionally, a splint-enhanced fit was also observed. This might be due to more precise insertion path determination in the design process. This pilot case report demonstrated that digital spatial registration of the maxilla position can improve clinical workflow. Larger cohort studies are needed to confirm these preliminary findings.

Keywords: Michigan Splint, Digital Workflow, AxioPrisa, Virtual Articulator

PP-038 Complete Denture Rehabilitation in a Severely Resorbed Mandible Using Custom-Fabricated Artificial Teeth with Embedded Gold-Coated Magnets

Beyza Ataç[1], Ayşenur Akdede[1], Pelin Ozkan[2]

([1]Graduate School Of Health Sciences,Ankara University,Ankara, Turkey; Department Of Prosthodontics, Ankara University, Ankara, Turkey; [2]Department Of Prosthodontics, Ankara University, Ankara, Turkey)

A 60-year-old female patient presented to the Faculty of Dentistry at Ankara University with complaints of regarding the inability to use her mandibular complete denture. Medical and dental history revealed that the patient had previously received intravenous bisphosphonate treatment and had experienced failure of previously placed dental implants in the mandible. Intraoral and radiographic examinations showed that the mandibular ridge was severely resorbed and shallow. It was also decided that the existing maxillary complete denture should be replaced with new one. Considering the presence of severe atrophy in the patient's mandible, along with their medical and dental history, a treatment plan involving complete denture therapy using custom-made artificial teeth with gold-coated magnets was proposed as an alternative approach. The traditional steps of complete denture fabrication were performed, with the magnets being added at the final delivery stage. The complete dentures were finalized using custom-fabricated artificial teeth containing gold-coated magnets. Retention and stabilization were achieved through the compresion forces generated by magnets of the same polarity embedded in both the maxillary and mandibular dentures. The prosthesis was completed and delivered to the patient, and the follow-up procedures were conducted in accordance with routine clinical prosthodontic protocols.

Keywords: Complete denture, Magnet,Atrophic mandible

PP-039 Complete implant-prosthetic rehabilitation of the atrophic lower jaw

Irina Filipovic Zore[1], Amir Ćatić[2], Tomislav Katanec[1]

([1]Department of oral surgery, Zagreb University, Zagreb, Croatia; [2]Department of prosthodontics, Zagreb University, Zagreb, Croatia)

INTRODUCTION: Bone atrophy of the alveolar ridge presents a significant challenge in contemporary oral surgery and implantology. While there are several bone augmentation techniques available, including maxillary sinus floor elevation, this case explores the modern approach of using "extra-short" implants to atrophic edentulism.

CASE: The first surgical step involved vestibuloplasty following the secondary epithelization technique, with the use of blood plasma enriched with growth factors (PRGF) to promote healing and tissue regeneration. Approximately four weeks post-operation, the second phase of treatment was carried out. In this procedure, four short implants (4.0 x 5 mm) were inserted into the lower jaw. Due to significant resorption of the alveolar ridge, the distance from the top of the ridge to the alveolar nerve in the distal mandible was reduced to 2–3 mm. Considering the therapeutic indication, both mental nerve openings were displayed to avoid nerve damage during implant placement. Following the implant insertion, multi-unit abutments and prosthetic carriers were immediately positioned on the implants. A polyether impression was taken in a single-phase manner to prepare for prosthetics. Within a few hours post-surgery, the patient received fixed temporary prosthetic made from acrylic.

Discussion: The case demonstrates the effectiveness of short implants in the management of atrophic edentulism, particularly in situations with minimal available bone height. Short implants offer a viable alternative to traditional longer implants, minimizing the need for bone grafting procedures. The combination of modern surgical techniques, such as vestibuloplasty with PRGF, and the use of advanced implant designs, ensures a successful and efficient outcome for patients with severe bone resorption. Immediate placement of prosthetic components further enhances patient comfort and reduces the overall treatment time.

CONCLUSION: This approach is particularly beneficial for patients with limited bone volume, offering a less invasive solution with high success rates.

Keywords: Atrophic jaw, vestibuloplasty, short implants

PP-040 Conservative restoration of endodontically treated posterior teeth: a comparative clinical approach between endocrowns and overlays

Amani Djebbi, Zeineb Riahi, Nadia Ben Younes, Dalenda Hadyaoui, Belhassen Harzallah

(Department of Fixed Prosthodontics, Faculty of Dental Medicine of Monastir, Monastir, Tunisia)

INTRODUCTION: The restoration of endodontically treated teeth with significant loss of tooth structure poses a considerable clinical challenge. This structural loss compromises mechanical properties and fracture resistance, adversely affecting long-term prognosis. Traditionally, full-coverage crowns supported by post-and-core systems have been used, with well-documented survival rates. However, post space preparation weakens the root and increases fracture risk. Advances in adhesive dentistry and high-performance restorative materials have enabled more conservative alternatives. Among these, endocrowns and overlays have emerged as reliable solutions for posterior teeth, offering minimally invasive approaches that preserve remaining tissues while ensuring functional and esthetic outcomes. This work compares endocrowns and overlays through two clinical cases, highlighting their respective indications and clinical outcomes.

Case Description: Two endodontically treated posterior teeth with significant tissue loss were restored using lithium disilicate ceramic. -Case 1: A lower first molar with preservation of half of all axial walls, except for the distal wall, which exhibited subgingival extension. A deep margin elevation was performed before restoring the tooth with an endocrown. - Case 2: An upper first molar with an old amalgam restoration and preserved peripheral walls. Due to the inadequate pulp chamber geometry, an overlay with composite core build-up was chosen to ensure a conservative yet functional restoration.

Discussion: Endocrowns and overlays are both conservative options for restoring endodontically treated posterior teeth. Endocrowns provide macromechanical retention via the pulp chamber, making them suitable for teeth with extensive coronal loss. Overlays, particularly when combined with a biobase, preserve axial walls and enamel, enhancing adhesion and mimicking natural tooth biomechanics. This comparison highlights the importance of evaluating residual structure, occlusion, and biomechanical demands to guide technique selection. Long-term comparative data remain limited, emphasizing the need for further studies to refine clinical guidelines.

Keywords: Endodontically treated teeth, Adhesive dentistry, Endocrown, Overlay, Core build-up, Biomimetic dentistry

PP-041 Conversion of a Failing Implant-Supported Fixed Prosthesis to a Bar-Retained, Implant-Supported Overdenture: A Case Report

Fatma Başyiğit, Ahmet Altuğ Çilingir

(Department of Prosthodontics, Trakya University, Edirne,Turkey)

Implant-supported fixed prostheses provide high patient satisfaction in terms of function and esthetics in fully edentulous cases. However, biological or mechanical complications such as peri-implantitis or bruxism may lead to

implant failure, compromising the functionality of the existing prosthesis and requiring alternative prosthetic approaches. In such cases, evaluation of the remaining implants—particularly in the mandible—may allow the use of bar-retained implant-supported overdentures, which optimize biomechanical load distribution, facilitate hygiene through their removability, and preserve patient comfort.

A 68 year old male patient maintained functional and prosthetic stability for four years with a complete denture in the maxilla and a fixed implant-supported prosthesis on four mandibular implants. Over the past year, the patient developed pain, mobility, and signs of infection around the right posterior mandibular implants. Upon clinical and radiographic evaluation, a fracture was detected in one of the implants, and the periodontally compromised implants were surgically removed. Two implants in the left posterior region were found to be stable, and an implant-supported overdenture with a Hader bar and clip attachment system was planned over these implants. An abutment-level impression was taken using a custom tray and polyether impression material. The titanium bar fabricated using CAD/CAM systems was designed to provide passive fit, and a bar-retained implant-supported overdenture was subsequently fabricated.

In cases where the number of implants is reduced, the use of an implant-supported Hader bar provides sufficient biomechanical stability and retention for mandibular overdenture prostheses. While the bar optimizes force distribution between implants, the removable nature of the overdenture facilitates oral hygiene and simplifies maintenance for the patient. This case shows that bar-retained overdentures offer an effective solution after implant loss in fixed cases. Current literature supports this conversion as a viable long-term treatment strategy in managing complications associated with failing implant-supported fixed prostheses.

Keywords: Implant-supported prosthesis, Overdenture, Hader bar

PP-042 Creating a Gingival Emergence Profile with PEEK Abutments: A Clinical Application Series

Enes Korkmaz[1], Sıla Sevim[2], GAYE SAĞLAM[1], Şükriye Ece Geduk[1]

([1]Department of Prosthodontics, Zonguldak Bülent Ecevit University Faculty of Dentistry, Zonguldak, Turkiye; [2]Department of Prosthodontics, Zonguldak Bülent Ecevit University Graduate School of Health Sciences, Zonguldak, Turkiye)

INTRODUCTION: The peri-implant gingival emergence profile is vital for aesthetics, gingival contour, and margin positioning. While titanium abutments are commonly used, they may cause gingival discoloration, especially in patients with thin soft tissues. To overcome this, polyetheretherketone (PEEK) abutments, offering biocompatibility, aesthetic advantages, and chemical and mechanical stability, have been developed.

Case Description: In the first case, a 49-year-old male patient who lost his maxillary central incisors due to trauma underwent implant treatment. Following osseointegration, PEEK abutments were placed, and provisional crowns were fabricated with composite resin. The emergence profile was shaped directly on the PEEK abutments using a Natural Emergence Profiler, and temporary restorations was screwed onto the implant. Following three weeks of soft tissue healing, final impressions were obtained using a closed tray technique with polyvinyl siloxane. In the second case, a 27-year-old male patient received an implant following the extraction of upper right santral incisor due to an abscess. An initial model was prepared using the closed impression technique. The gingival profile of temporary crown were created using composite on a PEEK abutment screwed onto the analog, and then transferred into the implant. After healing, the gingival profile was transferred to an open-tray impression post using Hind's technique, and the final impression was taken using an individual impression post. In the third case, a 44-year-old female patient with a missing maxillary left canine received an implant A PEEK abutment was placed, and a provisional crown was fabricated using polymethyl methacrylate (PMMA). After a three-week healing period, a final impression was obtained using the closed tray technique with polyvinyl siloxane.

Discussion: At 1- and 3-month follow-ups, no clinical or radiographic complications were observed. All patients reported high satisfaction with the aesthetic and functional outcomes. PEEK abutments demonstrated reliable soft tissue integration and favorable results in anterior implant restorations.

Keywords: Polyetheretherketone, Gingiva, Temporary Dental Materials, Implant-Supported Dental Prosthesis, Abutments

PP-043 Crown Fabrication in the Maxillary Anterior Region Using the Mirror Image Tool: A Case Report

Ömer Karadeniz, Mustafa Ata Çakaloğlu, Sabire Işler

(İstanbul University, Faculty of Dentistry, İstanbul, Turkey)

INTRODUCTION: The rapid advancement of digital technologies in dentistry has significantly enhanced the fabrication of aesthetic and patient-specific prosthetic restorations. However, single crowns in the maxillary anterior region remain a considerable aesthetic challenge. Advanced computer-aided design (CAD) software, such as Exocad, provides effective solutions through its user-friendly interface and comprehensive design tools. This study aims to demonstrate the clinical application of the mirror image tool within a fully digital workflow for the restoration of single crowns in the maxillary anterior region.

Case Description: Patients requiring single crown restorations in the maxillary anterior region, with no existing restorations or aesthetic concerns involving adjacent teeth, were included in this report. At the initial stage, intraoral and extraoral photographs were obtained, and digital impressions were obtained following tooth preparation using an intraoral scanner. The digital scanning data were imported into the Exocad software in STL format. The mirror/copy tool was used to replicate the contralateral tooth morphology, enabling restorations closely resembling natural dentition. Based on the finalized digital design, monolithic ceramic crown were fabricated. After clinical try-ins and adjustments, the restorations were cemented permanently. This case report presents the application of this tool in various clinical cases.

Discussion: Prosthetic restorations in the anterior maxillary region often requires manual replication of the morphology of symmetric teeth—a process that is both time-consuming and technique-sensitive. The mirror/copy tool offers a CAD-based alternative by duplicating the morphology of the contralateral tooth, thereby streamlining the design process. Successful outcomes depend on proper case selection, particularly in patients with intact and aesthetically acceptable contralateral teeth. Precise positioning and dimensional accuracy during the design phase are essential to ensure seamless aesthetic and functional integration. The use of this method improves clinical efficiency, enhances predictability of outcomes, and contributes to increased patient satisfaction.

Keywords: Digital Dentistry, Mirror-image tool, Digital Workflow

PP-044 Dental Students' Perspectives on AI Applications in Dentistry Education

Simge Taşar Faruk[1], Aynil Keskin[2], Çisil Avci[3]

([1]Associate Proffessor, European University of Lefke, Faculty of Dentistry, Department of Prosthodontics, Lefke, TRNC; [2]Assistant Proffessor, European University of Lefke, Faculty of Dentistry, Department of Prosthodontics, Lefke, TRNC; [3]Research Assistant, Associate Proffessor, European University of Lefke, Faculty of Dentistry, Department of Prosthodontics, Lefke, TRNC)

OBJECTIVE: Artificial intelligence (AI) is increasingly integrated into healthcare, including dental education and practice. As future dental professionals, dentistry students, specially final years, are uniquely positioned to offer insights into the evolving role of AI in their training. Understanding their perspectives is essential to effectively incorporate AI into dental curricula and prepare graduates for a technology-driven clinical setting. Objective is, evaluation of a basic understanding of AI principles, attitudes toward its application, integration of AI into their training and clinical practice among dental students.

MATERIAL-METHODS: An anonymous electronic survey about AI was designed for dentistry students to explore. A structured, self-administered questionnaire is developed based on existing literature, covering the domains: Awareness of AI, attitudes towards AI, AI in education and clinical use of AI. The questionnaire includes both closed-ended, open-ended and Likert scale questions. The survey was distributed electronically via institutional mailing. Participation was voluntary. Data was analyzed using descriptive and inferential statistics with SPSS (IBM SPSS V23).

RESULTS: A total of 406 dental students responded to the questionnaire. Of these, about 60.40% had basic knowledge about AI technologies and 11.7% mentioned that they had no information sources about AI. 78.70% stated that dentistry would be revolutionized by AI but 20.60% did not agree that AI could replace themselves in the near future. In addition, 74.80% of indicated on this field about AI to be included in undergraduate and postgraduate dental education, respectively. Majority of students (75.8%, $p<0.05$) believe that AI will lead to significant changes in the profession.

CONCLUSIONS: Although participants have insufficient knowledge of AI, they are desiring to improve their knowledge in this field. Participants shared an positive thoughts and resulted that AI will have a positive impact on dental future practice. Follow-up surveys and studies should be done for further information.

Keywords: Artificial Intelligence, Survey, Dental Students

PP-046 Digital Mandibular Advancement Appliance Therapy for Sleep Bruxism and Obstructive Sleep Apnea: A Case Report

Melisa Özer, Onur Etoz

(Department of Prosthodontics, Mersin University ,Mersin,Turkey)

INTRODUCTION: Sleep-related bruxism is a parafunctional activity characterized by involuntary teeth grinding and jaw clenching during sleep, often associated with arousal responses. Obstructive sleep apnea (OSA), another common sleep disorder, involves repeated breathing interruptions due to upper airway collapse. Treatment options for OSA include continuous positive airway pressure (CPAP), surgical interventions, and pharmacological approaches. Mandibular advancement therapy (MAT) using oral appliances is a non-invasive dental treatment that improves airway patency and nighttime respiration. The integration of digital technologies has enhanced the precision, efficiency, and customization of appliance fabrication.

Case Description: A 42-year-old male presented with complaints of nighttime teeth grinding and breathing difficulties during sleep. He was diagnosed with OSA and laryngopharyngeal reflux. After discussing treatment alternatives, the patient chose mandibular advancement therapy. An intraoral scan was performed using the TRIOS5 scanner (3Shape). The mandible was advanced to 66% of its anteroposterior range with a 10 mm interincisal distance, and this position was digitally recorded. The data were imported into ExoCAD software, and the appliance was designed in splint mode. The appliance was fabricated using a Formlabs 4B 3D printer with LT CLEAR Resin V2. After post-processing and polishing, the device was delivered to the patient. Masseter muscle activity was measured using ultrasonography prior to appliance delivery. Bruxism symptoms were reassessed at 1 and 4 weeks post-insertion.

Discussion: The digital workflow enabled rapid production and precise delivery of a customized MAT device with minimal occlusal adjustment. This case supports the effectiveness of digitally fabricated appliances in managing mild to moderate OSA with coexisting bruxism. Broader studies are recommended to assess long-term clinical outcomes and generalizability.

Keywords: OSA, sleep bruxism, mandibular advancement appliance, digital workflow, ultrasonography

PP-047 Digital Planning of a Severely Worn Dentition to Restore Occlusal Vertical Dimension: A Case Report

Merve Zeybek, Guliz Aktas, Mustafa Baris Guncu

(Department of Prosthodontics, Faculty of Dentistry, Hacettepe University, Ankara, Turkey)

INTRODUCTION: Severely worn dentition often exhibit the loss of occlusal vertical dimension. The rehabilitation process for optimal esthetic and functional results should be planned meticulously. The aim of this case report is to present the digital planning and full mouth rehabilitation in a partially edentulous patient with inadequate interocclusal space.

CASE PRESENTATION: A 55-year-old female patient was referred to our clinic for implant planning in the mandibular right and left posterior areas. After clinical examination, two main challenges were noted; inadequate interocclusal space for restorative material due to severe worn teeth and esthetic displeasure because of gummy smile. Dental photographs, digital impressions and CBCT scan data were taken for digital planning of the case. Crown lengthening procedure was performed according to the digitally designed gingivectomy guide. Temporary crowns were designed and milled according to the determined vertical dimension of occlusion. After healing period, impressions were taken and ceramic restorations were fabricated. The patient attended follow-up appointments regularly and was satisfied with the esthetic and functional outcomes of the treatment.

Discussion: In cases of severely worn dentition, increasing the occlusal vertical dimension should be carried out in a controlled manner using provisional restorations to allow the patient to gradually adapt to the new vertical dimension. Although there is no clear consensus on the ideal duration for the use of provisional restorations, a minimum follow-up period of 3 months is recommended. The use of a digital workflow in esthetic treatment planning allows for a more controlled process and predictable outcomes. Superimposing CBCT data, patient photographs, and intraoral scanning data enables accurate planning of surgical guides.

Keywords: Digital planning, vertical dimension, zirconia, crown lengthening, gingival guide

PP-049 Digital Workflow for Endocrown Restorations in an Adult Patient with Pierre Robin Sequence: A Case Report

Deniz Saeidi, Selen Erkul, Yigit Sengor, Ender Kazazoglu

(Department of Prosthodontics, Yeditepe University, Istanbul, Turkey)

INTRODUCTION: Pierre Robin Sequence (PRS) is a congenital condition characterized by mandibular retrognathia, glossoptosis, and frequently cleft palate. Although commonly seen in pediatric patients, adults with PRS may present craniofacial and intraoral challenges that complicate dental treatments, such as restricted mouth opening and altered anatomy. Recent advances in digital dentistry, including intraoral scanning and 3D printing, offer minimally invasive and predictable solutions. This case report presents a fully digital workflow for the restoration of severely damaged teeth in a young adult patient with PRS.

Case Description: A 23-year-old female patient with Pierre Robin Sequence (PRS) presented with extensive structural loss in the mandibular molars (#36 and #46). Clinical examination revealed pronounced mandibular retrognathia and a shallow floor of mouth, which hindered the use of conventional impression trays. Due to limited interocclusal space and anatomical constraints, endocrown restorations were selected as a conservative treatment option. Following endodontic treatment, cavity preparation was carried out, including deep margin elevation and immediate dentin sealing (IDS). Intraoral scanning was performed using a DEXIS IOS, and the restorations were digitally designed with Exocad software. The endocrowns were fabricated from permanent resin (Crowntec, Saremco) using a 3D printer (Asiga MAX UV, Asiga), post cured with a Form Cure unit and subsequently cemented with dual-cure resin cement (Variolink DC). The treatment aimed to restore function while accommodating future orthodontic therapy. **Discussion:** This case highlights the advantages of a fully digital workflow in syndromic patients with limited intraoral access. The use of 3D printed endocrowns provided a conservative, functional, and reversible solution prior to orthodontic treatment.

Keywords: Pierre Robin Sequence, endocrown, 3D printing, digital workflow, intraoral scanning.

PP-050 Digital Workflow for Implant-Supported Overdenture Using a Dolder Bar System: A Clinical Case Report

Yüksel Gilol, Ammar Kayssoun

(Department of Prosthodontics, Near East University, Nicosia, T.R.N.C).

INTRODUCTION: Edentulous patients present ongoing clinical challenges, particularly in the retention and stabilization of traditional complete dentures. Implant-supported prosthetic rehabilitations, especially when enhanced by digital workflows, offer improved functional and esthetic outcomes.

Case Description: A 68-year-old female presented with complaints regarding the poor retention and stability of her existing maxillary and mandibular complete dentures. Clinical and radiographic evaluations revealed significant alveolar bone resorption in both arches. Despite the resorption, cone-beam computed tomography confirmed adequate bone volume and inter-arch space in the anterior regions, allowing for an initial treatment plan of implant-supported fixed prostheses. A total of eight implants were placed, four in the anterior maxilla and four in the anterior mandible. The patient's existing dentures were adapted for immediate loading. However, one maxillary implant failed due to inadequate primary stability. Following a comprehensive reassessment considering oral hygiene, esthetic demands, and risk profile, the treatment plan was revised to an implant-supported overdenture with a Dolder bar system to achieve enhanced support. After the healing period, a digital workflow was implemented. Intraoral scanning with scan bodies was performed, and the digital design was completed using Exocad software. Additively manufactured trial bases were utilized to verify vertical dimension and occlusion. A milled Dolder bar was fabricated via CAD/CAM, and a try-in of the denture teeth was conducted. The final prosthesis provided adequate lip support, enhanced facial esthetics, and met the patient's functional and esthetic expectations.

Discussion: This case illustrates the flexibility of digital workflows in complex prosthetic rehabilitation and underscores the importance of individualized and adaptable treatment planning in response to clinical complications.

Keywords: overdentures, dental implants, computer-aided design, intraoral scanning, edentulous

PP-051 Digital workflow in endocrowns: 3 case reports

Ilayda Tatlıpınar[1], Sibel Dikicier[2]

([1]İlayda Tatlıpınar, Department of Prosthodontics, University of Health Sciences Hamidiye Health Sciences Intitute, Istanbul, Turkey; [2]Sibel Dikicier, Department of Prosthodontics, University of Health Sciences Hamidiye Faculty of Dentistry, Istanbul, Turkey)

INTRODUCTION: The restoration of endodontically treated teeth with severely damaged crowns remains a challenging process. Nowadays, treatment approach for the restoration of endodontically treated teeth with extensive coronal destruction is the use of monoblock endocrowns, which integrate the post, core, and crown into a single unit. This case report aims to evaluate the clinical applicability of endocrowns prepared with a digital workflow. No pathology was observed during the patients' first, second, and third-month clinical follow-ups.

CASE: A 70-year-old male patient left maxillary premolar teeth, a 19-year-old male patient left mandibulary molar teeth, and a 38-year-old female patient left mandibulary molar teeth, all previously endodontically treated and presenting with extensive coronal destruction, applied for restoration. The patients were clinically and radiographically examined, and no contraindications to treatment were found. Following endocrown preparation principles, digital impressions were taken using an intraoral scanner, and endocrown restorations were designed using the CAD/CAM system (CEREC). These restorations were milled and sintered using zirconia-reinforced lithium silicate ceramic blocks (Celtra Duo ZLS). During the clinical try-in stage, marginal fit was checked, occlusion was adjusted, and the restorations were cemented with dual-cure resin cement (Panavia F 2.0, Kuraray Medical Inc.).

Discussion: Endocrown restorations are an effective alternative to post-core applications in endodontically treated teeth with significant substance loss, as they reduce invasiveness and increase fracture resistance. In this case, lithium silicate endocrowns prepared using a digital workflow were found to be successful in terms of aesthetics and function. CAD/CAM systems and adhesive cementation enhance fit and durability; however, further studies are needed to evaluate the long-term success of the method.

CONCLUSION: Endocrown restorations can be successfully applied as an alternative to post-core and crown restorations in premolar and molar teeth that have undergone root canal treatment and have extensive coronal damage, provided that adequate bonding surface is available.

Keywords: Endocrown, digital workflow, CAD/CAM, lithium silicate

PP-052 Digital Workflow in Implant-Supported Anterior Single Tooth Restoration

Melis Topaloglu, Irem Buyukates, Selim Erkut

(Department of Prosthodontics, Baskent University, Ankara, Turkey)

INTRODUCTION: Digital technology has significantly transformed implant prosthodontics by enhancing accuracy, efficiency, and overall patient comfort. Traditional workflow involving manual impressions and analog techniques are increasingly being replaced by fully digital systems. These include intraoral scanning, CAD/CAM technology, and guided implant surgery. Such advancements contribute to reduced chair time, improved predictability, and restorations that meet both functional and esthetic demands. The integration of digital tools has made complex procedures more manageable and outcomes more consistent.

Case Description: A 19-year-old male patient presented with congenital absence of tooth #21 and no systemic health issues. Following successful implant placement and a standard 3-month osseointegration period, a healing abutment was positioned. After one week, a digital impression was captured using a 3Shape TRIOS 3 scanner with a scan body. Shade selection was performed with a digital spectrophotometer for enhanced accuracy. The initial treatment plan involved a screw-retained crown on a titanium base. However, due to unfavorable screw access location affecting esthetics, the plan was modified to a cement-retained monolithic zirconia crown. The final restoration was tried in for fit and esthetics, glazed for a lifelike appearance, and cemented using adhesive resin cement.

Discussion: This case highlights the flexibility and precision of a fully digital workflow in the prosthetic rehabilitation of a single anterior tooth with an implant-supported restoration. Utilizing a digital approach in such cases is particularly valuable, as it enhances both the accuracy of treatment planning and time efficiency, critical factors in the esthetic zone. Intraoral scanning and digital shade matching contributed to highly precise clinical outcomes and increased patient satisfaction. Notably, the ability to seamlessly transition from a screw-retained to a cement-retained crown without repeating prior steps demonstrates the adaptability of digital workflow. Overall, this approach enabled a streamlined, patient-centered process and resulted in a functionally and esthetically successful outcome.

Keywords: Digital workflow, Intraoral scanning, Anterior tooth, Esthetic zone, Dental implant

PP-053 Digitally Guided Aesthetic Rehabilitation of Generalized Anterior Diastemas

Mehmet Tuğrul Şekkeli[1], Nurullah Türker[2]

([1]Mehmet Tuğrul Şekkeli, Department of Prosthodontics, Akdeniz University Faculty of Dentistry, Antalya, Turkiye; [2]Nurullah Türker, Department of Prosthodontics, Akdeniz University Faculty of Dentistry, Antalya, Turkiye)

INTRODUCTION: The aim of this case report is to present the smile aesthetic and functional outcomes of lithium disilicate porcelain laminate veneers completed through a fully digital workflow in a young adult male patient with multiple diastemas.

Case Description: A 25-year-old male patient applied with unaesthetic appearance and multiple anterior diastemas affecting both the maxillary and mandibular arches. Following clinical and radiographic evaluations, porcelain laminate veneers were indicated. Diagnostic models were obtained using the intraoral scanner (Primescan, Dentsply Sirona). A digital wax-up was designed to visualize the final result intraorally and guide the treatment plan. The diagnostic mock-up was transferred intraorally and assessed in terms of aesthetic parameters; upon clinical approval, it served as a guide for the subsequent treatment. Guided by the diagnostic mock-up, minimally invasive preparations were performed on twelve anterior teeth, comprising the maxillary and mandibular central and lateral incisors as well as canines. Gingival retraction paste was applied to ensure clear scanning of the gingival margins. Final impressions were taken digitally using the intraoral scanner. The restorations were prepared using all-ceramic (IPS e.max Press) material. During the try-in session, marginal fit, shade selection, and aesthetic parameters were carefully evaluated. Following clinical approval, the veneers were bonded using a light-cured adhesive resin cement.

Discussion: Digitally guided workflows combined with minimally invasive preparation techniques have become increasingly favored in the esthetic treatment of anterior diastemas, due to their ability to enhance precision and preserve tooth structure. This case demonstrates that lithium disilicate veneers, when supported by a fully digital workflow and mock-up guided preparation, offer a conservative, predictable, and smile aesthetically successful treatment option for the management of multiple diastemas.

Keywords: Multiple diastemas, Digital workflow, IPS e.max Press, Mock-up guided preparation

PP-054 Digitally Guided Hybrid Workflow for Full-Arch Rehabilitation with Combined PFM and PFZ Restorations

Mustafa Caner Akgül, Eyyüp Altıntaş

(Department of Prosthodontics, Faculty of Dentistry, Fırat University, Elazığ, Turkey)

INTRODUCTION: Full-arch rehabilitations often require a balance between functional longevity and esthetic demands, as determined by patient-specific clinical and financial considerations. Porcelain-fused-to-zirconia (PFZ) and porcelain-fused-to-metal (PFM) restorations offer reliable performance in different regions of the oral cavity. This clinical case describes the combined use of both materials in a digitally supported, and analog-integrated treatment workflow aimed at optimizing esthetic and functional outcomes.

Case Description: 41-year-old female patient presented for full-arch prosthetic rehabilitation due to failing metal-ceramic bridges in the 22–28 and 33–38 regions, along with multiple missing teeth (16, 23, 26, 27, 34, 35, 37). Tooth 38, which was previously included in a posterior bridge, was extracted due to poor prognosis. Periodontal and radiographic evaluations confirmed adequate support for full-arch fixed rehabilitation. Following bridge removal, teeth 14–24 were prepared with chamfer margins and restored using PFZ crowns. The posterior abutments (25–28 and 33–36) retained their original knife-edge preparations, and teeth 15–17 were prepared with chamfer margins and restored with PFM crowns. To preserve the existing occlusal relationship, maxillary and mandibular intraoral scans were obtained prior to preparation. After retraction cord placement, final impressions were made using addition-cured silicone material and subsequently digitized. The pre- and post-preparation datasets were superimposed, and occlusal mounting was performed using a resin articulator to ensure accurate functional alignment. Provisional restorations were milled from PMMA and delivered to the patient in the same session following tooth preparation. Final restorations were luted with dual-cured resin cement according to manufacturer instructions.

Discussion: This case illustrates that PFZ and PFM restorations can be effectively integrated within the same full-arch prosthetic plan when guided by a digital–analog hybrid workflow. Material selection balanced esthetic requirements and financial feasibility. Integration of the conventional impression with digitally captured occlusal data allowed preservation of the patient's vertical dimension and functional relationships, minimizing clinical adjustments.

Keywords: Full-arch rehabilitation, Porcelain-fused-to-zirconia, Porcelain-fused-to-metal, Digital workflow, Fixed dental prosthesis

PP-055 Digitally Planned Prosthetic Rehabilitation of a Patient with Inadequate Interocclusal Space

Abdullah Yaşar Olkun[1], Abdullah Yaşar Olkun[2], Yiğit Alp Özkan[1], Yiğit Alp Özkan[2], Berkman Albayrak[1]

([1]Department of Prosthodontics,Bahcesehir University,Istanbul,Turkey; [2]Department of Prosthodontics,Istanbul Health and Technology University, Istanbul, Turkey)

INTRODUCTION: In cases where missing teeth are not replaced for a long time, the opposing teeth may come into supra-occlusion and this can make the prosthetic rehabilitation to be applied quite difficult. Digital wax-up enables planning a predictable treatment for patients and to perform rehabilitation in the appropriate vertical dimension.

Case Description: A 46-year-old male patient with moderate periodontal health who had lost his centric stop due to posterior tooth loss applied to our clinic for prosthetic treatment. During the clinical examination, it was noticed that the antagonist teeth had erupted over time and deep-bite had occurred because the missing teeth was not replaced. Both digital and conventional impressions were made and the diagnostic casts with face-bow registration were transferred to a semi-adjustable articulator. Then, it was planned to increase the vertical dimension by 3 mm and to provide sufficient interocclusal distance by extracting the right maxillary second molar and the left mandibular first and second molars. Accordingly, digital wax-up was prepared on the anterior teeth and a 3D-printed wax-up with denture bases was prepared for the posterior teeth. After the aesthetic and functional analyses were performed, anterior teeth were prepared in the guidance of mock-up and silicone indexes to ensure obtaining sufficient clearance. The maxillary arch was rehabilitated with 3 separate metal-ceramic fixed partial denture and the mandibular jaw was rehabilitated with a single 9-unit fixed partial denture. By increasing the vertical dimension and obtaining sufficient interocclusal distance, posterior edentulous areas were also rehabilitated with removable partial dentures.

Discussion: In cases where prosthetic planning and predict both aesthetics and function after treatment are difficult, more precise treatment plans can be offered to patients by performing digital design prior to any intervention. In this case, a predictable rehabilitation was achieved by increasing the vertical dimension thanks to digital wax-up.

Keywords: 3D printing, Digital wax-up,Prosthetic rehabilitation, Vertical dimension increase, Deep bite

PP-056 Dimensional Accuracy Comparison of A-Type Silicone Impressions with Extraoral Scanning Methods in Digital Environments: A Pilot Study

Şeyma Nur Şahan

(Department of Prosthodontics, Faculty of Dentistry, Çanakkale Onsekiz Mart University, Çanakkale, Turkey)

The aim of this study was to compare the dimensional accuracy of digital models obtained using two different extraoral scanning techniques of an A-type silicone impression material within a conventional digital workflow in fixed prosthodontic treatment. This research was designed as a preliminary study to evaluate the feasibility and initial outcomes of different scanning methods prior to a larger-scale investigation.

A digitally designed prepared tooth model was fabricated using temporary resin material. A custom impression tray was produced for the model, and an impression was taken using an A-type silicone material. In the first technique of the conventional digital workflow, the impression surface was directly scanned using an extraoral model scanner, and Standard Triangle Language-Standard Tessellation Language (STL) data were obtained. In the second technique, type IV dental stone was poured into the same impression to produce a stone model, which was then scanned using the same extraoral scanner to generate a second STL file. Both STL datasets were compared using 3d Point cloud processing software(CloudCompare), and volumetric data differences were evaluated through point cloud analysis.

The digital model obtained from the direct scanning of the silicone impression showed less volumetric data loss. In contrast, the digital model acquired from the stone cast exhibited dimensional deviations, likely due to the casting process.

Within the conventional digital workflow, direct scanning of the silicone impression provided higher dimensional accuracy compared to scanning of stone models. As a pilot study, the findings offer preliminary insight into workflow optimization and highlight the need for further research with larger sample sizes. Reducing intermediate steps, such as model casting, is recommended to improve the accuracy of digital workflows in fixed prosthodontics.

Keywords: Impression Materials, Dental Models, Three-Dimensional Imaging, Dental Impression Technique, Prosthodontics

PP-057 Does Living Environment Influence Oral and Prosthodontic Health in Older Adults?

Marija Pavić[1], Ariana Pakušić[1], Krešimir Tomas[1], Petra Zovko[1], Larisa Musić[2], Amir Ćatić[3]

([1]Students, School of Dental Medicine, University of Zagreb, Croatia; [2]DMD, PhD, Department of Periodontology School of Dental Medicine, University of Zagreb, Croatia; [3]DMD, PhD, full time professor, Department of Fixed Prosthodontics, School of Dental Medicine, University of Zagreb, Croatia)

OBJECTIVE: This study aimed to investigate the influence of living environment on oral health and prosthodontics status among elderly individuals in Zagreb Croatia, by comparing institutionalised and non-institutionalised elderly groups in Zagreb, Croatia using DMFT, PSR, CDA, and Nevalainen indices.

MATERIALS-METHODS: This cross-sectional study was conducted at the School of Dental Medicine in Zagreb. Examinations were performed by dental students under supervision. Fifty-eight participants aged 65 – 89 were examined: 17 were nursing home residents (NHR), and 43 were non-institutionalised patients (NIP). Dental status was assessed using the Decayed, Missing, Filled Teeth (DMFT) index, and periodontal status using the Periodontal and Screening (PSR) index. Prosthodontic status was scored using the California Dental Association Index (CDA) for fixed prosthodontic appliances and the Nevalainen index (NVA) for removable dentures.

RESULTS: NHR exhibited higher median DMFT index (32) and lower PSR max (median 2) than NIP (DMFT 29, PSR max. 3). Regarding dentures, 60% of NHR had excellent upper denture stabilization and retention, while lower denture retention was frequently poor or very poor (60%). NIP showed better lower denture retention (40% excellent) and stabilization (40% excellent). For fixed prostheses, NIP had more optimal (R) CDA scores for color (59.4%) and surface texture (53.1%), than NHR (33.3%, 22.2%, respectively). NHR also had more unsatisfactory (V) scores, especially for margins (44.4%) and contacts (33.3%), while these were lower in NIP (12.5%, 9.4%, respectively).

CONCLUSION: Institutionalised older individuals demonstrated poorer oral and prosthodontic health scores than those living independently. These findings suggest disparities in access to dental care and dental hygiene and highlight the need for improved dental services and support in institutional settings.

Keywords: long-term care, dental care access, prosthodontic status, institutionalised elderly, health disparities

PP-059 Effect of Commonly Used Beverages on Color Change of Zirconia Samples Produced with CAD/CAM and 3D Printers: An in Vitro Study

Çağla Yeşil[1], Zeynep Yeşil[2]

([1]Department of Prosthodontics, Faculty of Dentistry, Recep Tayyip Erdoğan University, Rize, Turkey; [2]Department of Prosthodontics, Faculty of Dentistry, Ataturk University, Erzurum, Turkey)

OBJECTIVE: The aim of this study is to investigate the effects of commonly used beverages on the color change of zirconium samples prepared using Computer Aided Design/ Computer Aided Manufacturing (CAD/CAM) and 3D printers. MATERIAL-METHODS: In the study, a total of 50 samples were prepared in the form of a disk with a diameter of 15 mm and a thickness of 1.2 mm using CAD/CAM (25 sample) and a 3D printer (25 sample) in accordance with the International Organization for Standardization (ISO 6872) 89. Glazing was applied to only one surface of the samples in accordance with the manufacturer's recommendations. Color changes were then determined after the samples were immersed in five different beverages (cola, coffee, tea, fruit juice, and distilled water) for 24 and 48 hours. Color was evaluated using the CIEDE2000 color difference (ΔE_{00}) formula ($\Delta E_{00} = [(\Delta L´/KLSL) 2 + (\Delta C´/KCSC) 2 + (\Delta H´/KHSH) 2 + RT(\Delta C´/KCSC)(\Delta H´/KHSH)]1/2$). The data obtained were analyzed by variance analysis and Tukey's multiple comparison tests using the SPSS-22 program.

RESULTS: As a result of the variance analysis used to evaluate the data; it was determined that the production method, the solution used, the waiting time, the production method and solution and production method time interactions were very significant ($p<0.001$), and the production method-solution-time interaction was insignificant ($p> 0.05$).

Discussion: The highest color change was detected in the samples kept in coffee prepared with a 3D printer.

Keywords: Zirconia samples, CAD/CAM, 3D printers, beverages, color change

PP-060 Effect of Different Surface Finishing Processes on the Color Stability of Zirconia Produced with CAD/CAM and 3D Printers

Zeynep Yesil[1], Mohammad ABO HAORAN[1], Cagla Yesil[2]

([1]Department of Prosthodontics, Faculty of Dentistry, Ataturk University, Erzurum, Turkey; [2]Department of Prosthodontics, Faculty of Dentistry, Recep Tayyip Erdoğan University, Rize, Turkey)

OBJECTIVE: The aim of this study is to investigate the effect of different surface finishes on the color stability of zirconia prepared by CAD/CAM and 3D printers.

MATERIAL-METHODS: In the study, a total of 40 samples in the form of discs with a diameter of 15 mm and a thickness of 1.2 mm were prepared with CAD/CAM and 3D printer in accordance with the International Organization for Standardization (ISO 6872) 89. Only one surface of the specimens was glazed according to the manufacturer's recommendations. The first color measurements of the numbered samples were made using a spectrophotometer. Half of the samples from each group were etched with a high-speed power tool and a fine-grained diamond bur for 15 seconds in a unidirectional manner by the same researcher, after which the samples were washed with distilled water and air-dried. The abraded specimens were surface finished with OptraGloss ceramic polishing restoration kit according to the manufacturer's recommendations and color measurements were repeated. Half of the specimens in all groups were subjected to 5000 cycles of aging and color measurements were repeated. Color changes were determined using the CIEDE2000 color difference (ΔE00). The data obtained were analyzed by analysis of variance and Tukey multiple comparison tests using SPSS-22 software.

RESULTS: As a result of the analysis of variance used to evaluate the data; it was determined that the production method, surface finishing process was very significant ($p<0.001$), aging process was insignificant ($p>0.05$), and the interaction of production method and surface finishing process was significant ($p<0.005$).

CONCLUSION: In this study, it was determined that the most color change was observed in the samples prepared with the 3D printer polish kit and aging process, and it was concluded that the samples prepared in the 3D printer should be improved.

Keywords: CAD/CAM, 3D printer, surface finishing process, aging process, color change

PP-061 Effect of Disinfection Protocols on the Shear Bond Strength of Adhesive Resin to CAD/CAM Materials

Elçin Sağırkaya

(Department of Prosthodontics, Ordu University, Ordu, Turkey)

OBJECTIVES: Disinfection of dental restorations is a great necessity before clinical practice. This study aimed to evaluate the effect of disinfection protocols on the shear bond strength (SBS) of CAD/CAM materials, namely IPS e.max CAD (E), Vita Suprinity (VS), Vita Mark II (VM), Vita Enamic (VE) ve GC Cerasmart (C).

MATERIALS-METHODS: Thirty specimens were prepared (5x5x1.5mm) from each CAD/CAM material (N=150). The specimens were divided into three subgroups, disinfected with 1% sodium hypochlorite solution or with 70% ethanol solution for 10 min and control group surface was not cleaned. The prepeared composite cylinders were bonded with a resin luting cement (Variolink Esthetic DC) after applying the silane primer (Monobond Plus). SBS tests were performed in a universal testing machine (0.5 mm/min). The data were statistically analyzed with two-way ANOVA and Tukey HSD ($p<0.05$).

RESULTS: SBS test results were significantly affected by the CAD/CAM materials, disinfection methods and their interaction ($p<0.05$). The highest SBS values were determined for the Control groups (E=14,0±1.59; VM=12.29 ±1.74; VE=11.54±2.49; C=6.77±2.23) except VS in the Ethanol group (17.07±2.63). Ethanol treatment showed significantly lower SBS values in E=10.60±1.02 and C=4.63±1.03 groups, compared to the control groups (E=14.0±1.59 and C=6.77±2.23 MPa). Sodium hypochlorite treated groups showed the lowest SBS values for all materials. Regardless of the disinfection method, VS showed the highest SBS values (Control=15.27±1.71; Ethanol=17.07±2.63; Sodium hipocloride=13.42±2.35). The mean SBS values of all groups, except for material C, were found to be higher than the optimal clinical limits of 10 Mpa.

CONCLUSIONS: Within the limitations of this study, ethanol disinfection application significantly decreased the bond strength values in the E and C groups. Sodium hypochlorite application decreased the bond strength, although not significant,values in all groups. It is recommended to carefully select the disinfection procedure according to the restorative material to be used in clinical applications.

Keywords: Disinfection, bond-strength, CAD/CAM, resin cement

PP-062 Effect of kinematic and average facebow transfer on precision of prosthetic restorations

Samir Cimic[1], Sonja Kraljevic Simunkovic[1], Niksa Dulcic[1], Vladimir Prpic[2], Amir Catic[2]

([1]Department of Removable Prosthodontics, School of Dental Medicine, University of Zagreb, Croatia; [2]Department of Fixed Prosthodontics, School of Dental Medicine, University of Zagreb, Croatia)

OBJECTIVES: The purpose of this study was to determine the use of kinematic and average facebow on precision of static occlusion.

MATERIALS-METHODS: Study involved 15 participants (25,7±3,5 years) who received two stabilization splints. For one splint jaw tracking device with six degrees of freedom (ArcusDigmaII, Kavo) was used for upper cast articulation (M1), and for the other was used average facebow transfer (M2). Articulator adjustment was also made using same device (patient performed three protrusion and three laterotrusion movements on each side for calculation of adjustment values; M1), while for the other splint (M2) average values of the articulator settings were used. Occlusal splints were made in articulator using conventional method with cold curing acrylic over press formed foil. After polymerization, splints were rearticulated and occlusal equilibration of every splint was made. Occlusal adjustment was the same for every splint – each splint in maximum intercuspation (MI) had 24 contacts. Contacts were adjusted in articulator and checked with articulating foil of 8 µm. Precision of these two methods was tested with measuring occlusal contacts using same foil in mouth during insertion of splints. These contacts were measured before any occlusal adjustment of splint. The number of contacts, and the number of supernumerary contacts found in the mouth of the subject between two methods were measured. F test was used for statistical analysis.

RESULTS: The number of contacts in MI were 15,87±4,63 (M1) and 17,93±6,34 (M2). Number of supernumerary contacts were 0,2±0,56 (M1) and 0,27±0,59 (M2). There wasn't determined statistically significant difference between two methods within selected parameters ($p>0.05$).

CONCLUSIONS: There is no difference in the static occlusion accuracy of the prosthetic restorations fabrication procedure between the kinematic facebow (KTS system) and classic transfer of the upper jaw position with an average facebow.

Keywords: occlusal splints, occlusion, facebow

PP-063 Effect of the Aging Process on Volumetric Changes in Different 3D Resins

Esra Tsakir Emin[1], Merve Özarslan[1], Burcu Yağmur[2], Dilber Bilgili Can[3]

([1]Department of Prosthodontics, Akdeniz University, Antalya, Turkey; [2]Department of Pediatric Dentistry, Akdeniz University, Antalya, Turkey; [3]Department of Restorative Dental Treatment, Antalya Bilim University, Antalya, Turkey)

OBJECTIVE: The aim of this study is to evaluate the volumetric changes that occur as a result of a one-year aging process in four different 3D printing resins.

MATERIALS-METHODS: Samples (n = 10 per group) were prepared according to the manufacturer's instructions from four different 3D resins—Saremco print CROWNTEC (SR), Custom Resin Solutions Composite Resin (CRS-CAM), Prototype Resin (PR), and Detax Freeprint Crown Composite (DX)—with standardized dimensions of 6×6×1 mm. Samples were scanned using a laboratory scanner before and after 10,000 thermal cycles (5°C–55°C). Volumetric measurements were performed using the ANSYS program with the body splitting and mass properties commands. The data were analyzed with one-way ANOVA ($p<0.05$).

RESULTS: When the average values of the first and second measurements were evaluated, the CRS-CAM and PR groups did not show any statistically significant differences, whereas all other groups exhibited significant differences in volume changes. The SR group showed the highest statistically significant values. When the volume differences between the first and second measurements were assessed, the values in the SR group (10.11) differed statistically from those in the CRS-CAM (6.92) and PR (7.64) groups. The values in the DX (8.82) did not show any statistically significant difference compared to the other groups.

CONCLUSION: The results show that the aging process applied caused a volumetric loss in all materials, and the degree of this loss may vary depending on the properties of the resin used.

Keywords: 3D printing resins, volumetric change, aging, ANSYS

PP-064 Effect of the cleaning tablets on the bond strength of 3D splints and different repair materials

SELIN ÇELIK ÖGE, ŞEVKET CAN AŞCI, Nazlı Aydın, Koray Soygun

(Department of Prosthodontics, Cukurova University, Adana, Turkey)

Objectives: To evaluate the effect of cleaning tablets on the shear bond strength of 3D-printed occlusal devices and two different repair materials: polymethyl methacrylate (PMMA) and 3D printer resin. Material and methods. A total of 60 specimens (10x10x2 mm) were manufactured using 3D-printer occlusal device resin (PowerResins Nıght Guard, DentaFab) with a digital light processing (DLP) 3D-printer(Sega 3D-printer, DentaFab). Surfaces were polished with abrasive papers with grits #1000 and #1200 for 1 min for each grit, and then PMMA (Dentalon Plus, Heraeus Kulzer) and 3D printer resin were applied using a standardized apparatus with the cylindrical cavity 3 mm in diameter in the center, without any surface pretreatment. All specimens were kept in artificial saliva at 37°C for 7 days in an incubator. Then, half of the specimens for each repair material (n=15) were immersed in a cleaning tablet solution (Proguard&Retainer, Haleon) for 90 minutes to simulate one month of clinical use (PMMA-T and 3D-T groups). Meanwhile, the other specimens were preserved in distilled water (PMMA-DW and 3D-DW groups). The shear bond test was conducted using universal testing equipment with a crosshead speed of 5 mm/min. The data were statistically analyzed using one-way ANOVA (α=.05).

RESULTS: The highest bond strength value was observed in 3D-DW group (6.03 ± 2.28 MPa), whereas the lowest was observed in PMMA-T group (3.70 ± 1.95 MPa). No statistically significant differences were found between the groups (P=.149).

CONCLUSIONS: Although the differences were not statistically significant, 3D printer resin repair material showed higher bond strength, probably due to similar chemical composition, and cleaning tablets reduced the bond strength of both repair materials.

Keywords: 3D-printed splints, additive manifacturing, cleaning tablet, occlusal device, repair material, shear bond strength

PP-065 Effectiveness of different scanning methods for a complete acrylic denture

Aneta Wieczorek, Maria Rog, Wiktor Wujek

(Jagiellonian University Medical College, Faculty of Medicine, Institute of Dentistry, Department of Prosthodontics and Orthodontics, Chair of Prosthodontics, Krakow, Poland)

The aim of this study was to evaluate the effectiveness of different scanning methods for a complete acrylic denture using a 3Shape scanner in terms of surface reproduction accuracy and process ergonomics. Four approaches were analyzed:

1. Direct scanning after air-drying.

2. Scanning after the application of talc.

3. Scanning after coating the denture with a scanning spray (Finoscan).

4. Scanning using the dedicated "Full Denture" mode in the 3Shape software. Method I (air-drying) was characterized by the highest number of artifacts and interruptions in the model mesh. Light reflections and the translucency of the acrylic caused difficulties in data acquisition, particularly on polished external surfaces. Method II (talc) improved the contrast of the scanned surface; however, its effectiveness depended on the uniformity of application – excess led to a decrease in dimensional accuracy, and after the scanning procedure, it was necessary to remove the residue. Method III (Finoscan) provided a uniform, thin coating, facilitating scanning with minimal impact on the geometry. However, the residue was difficult to remove, especially in the denture's indentations. Method IV, utilizing a dedicated denture scanning algorithm, enabled data registration without prior surface treatment. The system automatically corrected reflections and translucency, allowing for rapid and accurate acquisition of the digital model.

CONCLUSIONS: The highest accuracy and repeatability were achieved using the dedicated 3Shape mode (Method IV). While Finoscan (III) represents a good alternative for older software versions, only Method IV met all scan quality criteria without the need for intervention on the denture surface.

Keywords: denture, scanning, accuracy.

PP-066 Endocrown-Based Restoration of a Structurally Compromised Tooth Using Additive Manufacturing in a Fully Digital Workflow: A Case Report

Muhammed Furkan Keskin, Zeynep Tuğçe Altaş, Esra Ayşe Dilaverler Yardım

(Department of Prosthodontics, Faculty of Dentistry, Istanbul Health and Technology University, Istanbul, Turkey)

INTRODUCTION: The rapid advancement of digital technologies in dentistry has facilitated the effective integration of CAD/CAM systems into restorative treatment protocols. These systems enable both subtractive and additive manufacturing methods to be incorporated into clinical workflows. Endocrowns, preferred for restoring endodontically treated teeth with compromised structural integrity, offer significant advantages in terms of precision and time efficiency when digitally planned and fabricated.

Case Description: A 33-year-old male patient presented to the clinic with complaints of acute dental pain. Clinical and radiographic evaluations revealed deep dentinal caries and extensive coronal substance loss in the affected tooth, for which endodontic treatment was indicated. Following root canal therapy, an endocrown restoration was selected to preserve the remaining tooth structure and restore functional integrity. The treatment was carried out entirely using a digital workflow. An intraoral scanner (TRIOS® 3 Color, 3Shape, Denmark) was used to capture the digital impression. The restoration was designed using CAD software (Exocad, Germany) and subsequently fabricated using additive manufacturing technology with a 3D printer (Asiga MAX, Australia) and high-precision dental resin. The restoration was cemented using adhesive techniques in a clinical setting.

Discussion: Endocrowns fabricated through a fully digital workflow demonstrate superior accuracy, workflow standardization, and time efficiency compared to conventional methods. Additive manufacturing enables the precise production of complex morphologies, eliminates the need for physical models, reduces material waste, and enhances cost-effectiveness. These restorations exhibit high clinical compatibility and improve patient comfort while reducing operator dependency during production. However, limitations such as high system acquisition costs, the need for technical proficiency, and limited long-term clinical data must be considered for widespread adoption.

Keywords: Endocrown, Digital Dentistry, Additive Manufacturing, CAD/CAM, Minimally Invasive Restoration

PP-067 Esthetic rehabilitation of a traumatized anterior tooth: from porcelain laminate veneer to screw-retained implant crown

nuray capa[1], Noyan Başal[2], Elif Delve Başer Can[3], ayse Iengerli efe[4], Birsu Muntaş[5]

([1]Prof., Department of Prosthodontics, Faculty of Dentistry, Yeditepe University, Istanbul, Turkey; [2]Dr., Oral and Maxillofacial Surgeon, Private Practice, Istanbul, Turkey; [3]Assoc. Prof., Department of Endodontics, Faculty of Dentistry, Yeditepe University, Istanbul, Turkey; [4]Dr., Department of Prosthodontics, Faculty of Dentistry, Yeditepe University, Istanbul, Turkey; [5]PhD Student, Department of Prosthodontics, Faculty of Dentistry, Yeditepe University, Istanbul, Turkey)

INTRODUCTION: Ideal pink and white esthetics in the anterior maxilla following the extraction of a central incisor is a complex and technique-sensitive process. In cases where root canal treatment has complications tooth extraction, implant placement and prosthetic procedures require an interdisciplinary treatment approach.

Case Description: A 28-year-old female patient underwent orthognathic surgery following the completion of her orthodontic treatment. In 2020, she experienced a traumatic injury that caused the avulsion of tooth 11, which was immediately repositioned. Tooth 12 presented with a crown fracture and teeth 12–22 were splinted on the same day. During the 10-day splinting period, root canal treatment was initiated on tooth 11 and calcium hydroxide was placed in the root-canal. Three weeks later, the treatment was completed. After 1-year, due to a negative vitality test and the development of a periapical lesion, tooth 12 underwent endodontic treatment then porcelain laminate veneers were placed on teeth 14–24. One year later, tooth 11 showed significant discoloration, negatively affecting the esthetics, internal root resorption was observed and retreatment was performed. The porcelain laminate veneer on tooth 11 was repeated to improve color harmony. Although masking effect was limited compared to a crown, this conservative approach preserved tooth structure and achieved acceptable esthetics. Dramatically, due to cervical root resorption and perforations, extraction of tooth 11 was required two years later. An immediate implant(4×15 mm;Nobel TiUltra Active) was placed and a temporary composite crown was fabricated. After 3-months, a screw-retained zirconia crown was delivered for tooth 11 and porcelain laminate veneers on teeth 12, 21 and 22 were repeated to re-establish esthetics in the anterior zone.

Discussion: Immediate implant placement with provisionalization contributed to soft tissue preservation. Combined with adjacent porcelain laminate veneer replacement, a successful esthetic outcome was achieved despite the challenges associated with prior trauma and resorption.

Keywords: Dental implant, Esthetics, Dental trauma

PP-068 Esthetic Rehabilitation of Anterior Teeth Using Laminate Veneers: A Case Report

ELİF YILMAZ BİÇER, MERVE BANKOĞLU GÜNGÖR

(Department of Prosthodontics, Gazi University, Faculty of Dentistry, Ankara, Türkiye)

Esthetic concerns involving the anterior teeth can profoundly affect the self-confidence and overall quality of life of a patient. This case report describes the esthetic restoration of a 28-year-old woman who presented with discolored and partially fractured composite fillings on her maxillary six anterior teeth. Additionally, small diastemas were present between the canines and adjacent lateral incisors. The patient expressed dissatisfaction with her smile and requested a conservative treatment approach that would restore harmony and brightness to her appearance. During the treatment planning phase, digital intraoral photographs were taken. A gingivectomy was planned to enhance the pink esthetics, which is an essential component of a harmonious smile. In the same session, following the gingival contouring procedure, minimal tooth preparations were performed. A definitive impression was then obtained using an additional type of silicone impression material. Lithium disilicate ceramic veneers were chosen for their high translucency, strength, and natural optical properties. After a trial fitting to verify marginal adaptation and esthetics, the veneers were cemented using a light-cured resin cement. The final restorations exhibited excellent marginal integrity, proper contour, and shade match. The patient was recalled for control sessions at 1 week, 1 month, and 4 months postoperatively. No complications such as debonding, sensitivity, or marginal discoloration were noted. The veneers maintained excellent esthetics and function throughout the follow-up period. The gingival tissues appeared healthy, and the patient expressed high satisfaction with the treatment outcome. This case highlights the effectiveness of laminate veneer restorations in managing anterior esthetic challenges while offering a conservative, durable, and highly esthetic result.

Keywords: Laminate veneers, Smile design, Gingivectomy, Esthetic dentistry, Anterior restoration

PP-069 Esthetic Rehabilitation of Congenitally Missing Lateral Incisor with Lithium Disilicate Adhesive Bridge

Hasan Ancın Aktuğ, Tezcan Muslu, Semih Arkoy

(Department of Prosthodontics, Near East University, Nicosia, T.R.N.C.)

INTRODUCTION: Anterior tooth loss can result from a variety of causes, with the most common being congenital absence, trauma, impaction, periodontitis, and dental caries. Advancements in ceramic materials and adhesive cements have led to the emergence of adhesive bridges as a more conservative treatment option, offering excellent aesthetics and high long-term survival rates.

Case Description: A 22-year-old female patient presented to the Department of Prosthetic Dentistry at Near East University with a chief complaint of a dislodged adhesive bridge. Clinical examination revealed a congenitally missing left lateral incisor. Cone-beam computed tomography (CBCT) analysis indicated that implant placement wasn't feasible due to the unfavorable root angulations of the adjacent teeth. Although orthodontic intervention would have been necessary to create adequate mesiodistal space for implant placement, the patient opted against this approach. Instead, a more conservative treatment modality—an adhesive bridge— was selected in accordance with the patient's preferences. After minimally invasive tooth preparation, an intraoral scanner (CEREC Omnicam; Dentsply Sirona) was used to digitally capture the prepared abutments. The definitive restoration was fabricated from lithium disilicate glass-ceramic (IPS e.max CAD; Ivoclar Vivadent) using a subtractive manufacturing technique. Following appropriate mechano-chemical surface conditioning, the restoration was luted with a translucent dual-cure resin cement (Variolink N; Ivoclar Vivadent).

Discussion: Management of anterior tooth loss involves options, such as autotransplantation, orthodontic treatment, adhesive bridges, implants and conventional fixed prostheses. The most appropriate treatment should be selected based on various parameters including tooth position, periodontal status, inter-abutment space, occlusion, patient's expectations and financial considerations. While metal-ceramic restorations have been widely used, their metal frameworks often present aesthetic limitations due to their inherent opacity and limited translucency. Given these considerations and the high aesthetic demands of the case, an IPS e.max CAD adhesive bridge was chosen as the treatment option.

Keywords: Glass Ceramic, Maryland Bridge, Minimal Invasive, Digital Workflow, Conservative, CAD/CAM

PP-071 Esthetic Rehabilitation of the Anterior Maxilla Using Implant-Supported Prosthesis and Papilla Reconstruction: A Case Report

Irem Sarkaya[1], Nagehan Baki[1], Cüneyt Asım Aral[2]

([1]Department of Prosthetic Dentistry, Inonu University, Malatya, Turkey; [2]Department of Periodontology, Inonu University, Malatya, Turkey)

INTRODUCTION: The use of dental implants for replacing missing teeth in the esthetic zone is a preferred treatment option, aiming to provide patients with both functional and aesthetic restoration. Achieving optimal esthetic results, especially in the maxillary anterior region, can be challenging due to the importance of gingival esthetics. Periodontal plastic surgery procedures, such as interdental papilla reconstruction, are commonly employed to enhance soft tissue esthetics in this area.

Case Description: A 44-year-old female patient in good general health presented with concerns regarding the unesthetic appearance of the anterior maxillary region, caused by an old restoration. After removal of the restoration, caries and periodontal disease were detected in teeth 11 and 23. These teeth were extracted, and dental implants were placed in their respective sites. Three months later, papilla reconstruction surgery was performed, and a provisional restoration was delivered to facilitate papilla formation. Once satisfactory papillary development was achieved, a permanent cement-retained implant-supported prosthesis was placed.

Discussion: Implant rehabilitation in the anterior maxilla involves complex planning due to high esthetic demands and the need for precise soft tissue management. In this case, after implant placement and a healing period for osseointegration, papilla reconstruction was carried out to address soft tissue contours and papilla loss. The provisional restoration effectively supported papilla formation, ultimately leading to a favorable final outcome. The success of this treatment underscores the importance of a multidisciplinary approach, including careful soft tissue management, in achieving esthetic success with implant-supported restorations.

Keywords: Esthetic rehabilitation, implant-supported restoration, cement-retained, dental papilla

PP-072 Esthetic Rehabilitation using Digital Systems in a Patient with Maxillary Lateral Tooth Deficiency

ŞEYMA NUR BALİ, MEHMET UĞUR, Ahmet Bilal Sağlam

(Department of Prosthodontics, Karadeniz Technical University, Trabzon, Turkey)

INTRODUCTION: Lateral tooth deficiencies present significant functional and esthetic challenges. Especially in the anterior region, tooth loss can negatively impact smile esthetics and psychosocial well-being. Esthetic rehabilitation aims not only to replace missing teeth but also to restore facial esthetics and enhance quality of life. This case report presents an esthetic rehabilitation performed entirely with digital systems in a patient with lateral tooth deficiency who declined orthodontic treatment.

Case Description: A 46-year-old female patient presented with bilateral maxillary lateral incisor agenesis. Clinical and radiographic exams confirmed the congenital absence of both lateral incisors, while adjacent teeth showed healthy periodontal status. The patient declined orthodontic treatment, leading to a restorative approach. The patient's intraoral pre-scan and bite registration were obtained using the 3Shape intraoral scanner. During tooth preparation, minimally invasive principles were followed to avoid unnecessary loss of adjacent tooth material. The preparations were then rescanned with the 3Shape scanner. Using the Exocad system, monolithic zirconia crowns were designed based on detailed 3D images of the maxillary anterior region to fit the bilateral gaps. The restorations were milled, sintered, and adhesively bonded using Panavia V5 resin cement.

Discussion: Digital workflows enhance precision and efficiency in restorative dentistry, as demonstrated by the use of 3Shape and Exocad in this case. Detailed 3D imaging allowed accurate design and fabrication of restorations. Monolithic zirconia was chosen for its strength and esthetic qualities, reducing chipping risks common in layered ceramics. Managing bilateral lateral incisor agenesis without orthodontics is challenging, but a minimally invasive prosthetic approach preserved adjacent teeth and achieved satisfactory esthetic and functional outcomes. This case highlights the effectiveness of combining digital technology with durable materials for anterior tooth rehabilitation.

Keywords: Digital Dentistry, Maxillary Lateral Deficiencies, Esthetic Rehabilitation

PP-073 Esthetic Rehabilitation with E-Max Full Crowns and Laminate Veneers in Discolored Anterior Teeth: A Case Report

Gülce Gökalp, Şafak Külünk

(Prosthodontics Department, Ondokuz Mayıs University Dentistry Faculty, Samsun, Turkey)

INTRODUCTION: Discoloration and aesthetic deficiencies in endodontically treated anterior teeth present significant challenges in restorative dentistry. This case report describes the aesthetic rehabilitation of a male patient with severely discolored and structurally compromised anterior maxillary teeth using E-max full crowns and laminate veneers.

Case Presentation: A male patient presented to our clinic with aesthetic concerns regarding his maxillary anterior teeth. Clinical and radiographic examination revealed that tooth #12 (maxillary right lateral incisor) had undergone previous root canal treatment and was restored with an old, discolored crown. Tooth #21 (maxillary left central incisor) was also endodontically treated, exhibiting significant intrinsic discoloration. Additionally, teeth #11 (right central incisor) and #22 (left lateral incisor) showed moderate discoloration associated with old composite restorations.

Treatment Plan: Following a thorough evaluation, a minimally invasive yet esthetically driven treatment plan was designed. Teeth #12 and #21 were restored with E-max full ceramic crowns to address both structural and color deficiencies. For teeth #11 and #22, laminate veneers were chosen to correct discoloration while preserving natural tooth structure. Tooth preparation was carried out with maximum preservation of enamel. Shade selection was performed using a digital shade guide to ensure optimal color harmony. All restorations were fabricated using lithium disilicate (E-max) ceramics due to their superior esthetics, translucency, and durability. Cementation was done with light-cured resin cement under rubber dam isolation.

RESULTS: The patient expressed high satisfaction with the final esthetic outcome. The restorations demonstrated excellent integration with adjacent teeth in terms of color, form, and surface texture. At the one-month follow-up, the gingival tissues were healthy and patient comfort was optimal.

CONCLUSION: This case highlights the importance of individualized treatment planning in anterior esthetic rehabilitation. The use of E-max restorations offers a highly aesthetic and conservative approach for managing discolored, endodontically treated teeth.

Keywords: E-max crown, laminate veneer, anterior tooth discoloration, endodontically treated teeth, esthetic rehabilitation

PP-074 Esthetic Rehabilitation with Zirconium-Based Restorations in a Patient with Extensive Composite Restorations: A Case Report

Gamze Mutlu[1], Aysenur Kara[2], Nurten Baysal[3]

([1]Department of Prosthetic Dentistry, Faculty of Dentistry, Karatekin University, Çankırı, Turkey; [2]Department of Prosthetic Dentistry, Faculty of Dentistry, Medipol University, Ankara, Turkey; [3]Department of Prosthodontics, University of Health Sciences, Ankara, Türkiye)

INTRODUCTION: Repeated composite restorations often cause significant changes in tooth morphology and color, negatively impacting dental aesthetics and oral health–related quality of life. These issues may lead to reduced self-confidence and psychological discomfort. This case report presents a full-arch rehabilitation using fixed full-contour zirconia restorations to restore function and improve esthetics.

Case Presentation: A 44-year-old female presented with pain and dissatisfaction regarding esthetics. Clinical and radiographic evaluations showed carious lesions on teeth 24, 25, 26, and 45, along with extensive composite restorations throughout the maxilla (except tooth 27). A metal–ceramic fixed partial denture was noted between teeth 35–37, and composite fillings were present on 34, 44, 45, and 46. All carious lesions were treated, and root canal therapy was performed on tooth 45. Due to persistent discoloration, marginal degradation, and esthetic concerns, full-contour zirconia rehabilitation was planned for both arches. Existing metal–ceramic restorations were removed, and conservative preparations were performed, emphasizing smooth margins and rounded internal angles. Provisional restorations were assessed for occlusion, phonetics, and esthetics. Final zirconia restorations were fabricated using CAD/CAM technology and cemented with polycarboxylate cement after verifying occlusion and marginal fit.

Discussion: Zirconia crowns and bridges are preferred for their excellent biocompatibility, high fracture resistance (850–1,200 MPa), and superior esthetic outcomes. This case highlights the importance of individualized planning, careful provisionalization, and digital workflows in complex prosthodontic treatments. Full-arch zirconia restorations can effectively address functional and esthetic demands, especially in cases with extensive prior restorations. The patient reported significant satisfaction in comfort, chewing efficiency, and appearance.

Keywords: zirconia restorations, full-arch rehabilitation, composite replacement, CAD/CAM dentistry, prosthodontics

PP-075 Evaluating the impact of polymerisation methods of polymethyl methacrylate (PMMA) on the release of residual monomers and their cytotoxic potential: a review

Adillah Radhiah Roney[1], Nadiyah Abdullah Zawawi[1], Nor Wati @ Nur Atikah Mustafa[1], Nik Noor Idayu Nik Ibrahim[2], Raja Azman Raja Awang[3], Hazlina Abdul Ghani[1]

([1]Department of Prosthodontics, Faculty of Dentistry, Universiti Teknologi MARA, Malaysia; [2]Centre of Chemical Synthesis and Polymer Technology, Institute of Science, Universiti Teknologi MARA, Malaysia; [3]School of Dental Sciences, Health Campus, University of Science, Malaysia)

OBJECTIVE: This review is to evaluate the current published literatures on the impact of polymerization methods of polymethyl methacrylate (PMMA) on the release of residual monomers and their cytotoxic potential.

MATERIALS-METHODS: A search was conducted for studies published from January 1986 to December 2022 on the leaching and cytotoxicity of PMMA dentures, using the PubMed, Scopus, Web of Science, and EBSCO databases and following PRISMA guidelines. The search terms included "denture acrylic resin and cytotoxicity" and "denture acrylic resin and leaching." Eligible studies were original in vivo or in vitro research utilizing PMMA as a denture base, while review articles, incomplete studies, those with additional fillers, and studies on PMMA in provisional materials were excluded.

RESULTS: 34 papers were selected following the inclusion criteria. Heat-polymerisation method was found to achieve the highest degree of monomer conversion, resulting in the lowest residual monomer content. Microwave polymerization may achieve a high degree of polymerization in a shorter time, however it is dependent on various factors like exposure time and the power setting. Auto-polymerisation method leads to the highest residual monomer content due to incomplete polymerization.

The degree of cytotoxicity correlates with the concentration of residual monomer, which consequently may inhibit cell proliferation and promote the release of inflammatory cytokines, ultimately leading to cellular apoptosis and necrosis.

CONCLUSION: The methods of polymerization have a profound impact on the amount of residual monomers which correlates closely with the degree of cytotoxicity. Heat-polymerisation method shows the highest degree of monomer conversion while auto-polymerisation method shows the highest residual monomer content and therefore should be avoided in patients with allergies or mucosal sensitivity. However, if such method is to be applied, crucial steps should be taken to enhance the safety of its use.

Keywords: denture acrylic resin, PMMA leaching, PMMA cytotoxicity

PP-076 Evaluation of association between bruxism and sleeping positions: a survey-based pilot study

Bilun Karataş, Sezer Müşöl, Seniha Kısakürek

(Department of Prosthodontics, Muğla Sıtkı Kocman University, Muğla, Turkey)

OBJECTIVES: Bruxism is a parafunctional oral addiction that is characterized by repeated muscle function and involuntary activity of chewing muscles. The pathogenesis of bruxism is multifactorial. This survey-based pilot assessment study aims to raise clinical awareness by addressing the multifactorial nature of bruxism in conjunction with sleeping positions.

MATERIALS-METHODS: A survey consisting of 12 multiple-choice, close-ended questions was administered to 40 patients (20 bruxist, 20 non-bruxist) who consulted the Department of Prosthodontics, Faculty of Dentistry, Muğla Sıtkı Koçman University, The survey collected data on bruxism-related symptoms, sleep positions, pillow usage, and morning complaints. Associations between bruxism diagnosis and each variable were assessed using chi-square tests. Multivariate logistic regression was performed to identify independent predictors.

RESULTS: Statistical analyses were conducted to examine the relationship between bruxism diagnosis, various sleep habits, morning symptoms, and pillow preferences. Univariate chi-square analysis revealed that only the item regarding morning jaw muscle pain was significantly associated with bruxism diagnosis ($\chi^2 = 8.50$, $p = 0.004$). Other sleep- and pillow-related variables—including habitual sleep position, pillow thickness, pillow type, and pillow change history—were not significantly associated with bruxism (all $p>0.05$). A multivariate logistic regression analysis, including age, gender, and the significant symptom variable, confirmed that morning jaw pain was an independent predictor of bruxism (OR = 8.37; 95% CI: 2.24–31.24; $p = 0.0016$). Age ($p = 0.403$) and gender ($p = 0.500$) were not statistically significant in the model.

CONCLUSION: According to the findings of this preliminary study, morning jaw muscle pain appears to be a strong clinical indicator of bruxism. No significant associations were found with sleep position or pillow characteristics. Symptom-based assessment may be more effective than modifying sleep-related behaviors

Keywords: Bruxism, Sleeping Position, Temporomandibular Joint Disorders

PP-077 Evaluation of changes in bone trabecular structure in patients using implant overdenture prosthesis with different attachment types by fractal analysis method

meryem altunkalem, zelal Seyfioglu Polat, yalçın emre kaya, Seray Çapar

(Department of Prosthodontics, Dicle University, Diyarbakır, Turkey)

INTRODUCTION: Implant-supported overdentures are a type of prosthesis developed to eliminate retention and stabilization deficiencies, which are one of the important problems of traditional total prostheses.

Purpose: The aim of this study was to comparatively evaluate the changes in trabecular bone density during the follow-up period in patients using implant-supported overdenture prostheses with different attachment types.

MATERIALS AND METHODS: The records of 20 different patients who applied to Dicle University, Faculty of Dentistry, Department of Prosthetic Dentistry with a request for implant-supported overdenture prosthesis were retrospectively examined. Patients who used overdenture prosthesis with different attachment types for a minimum of 1 year and a maximum of 15 years were evaluated. The evaluation was made on panoramic radiographs of the post-implant surgery, post-prosthetic application and control periods.

Result: Comparative evaluation of bone trabecular structure during follow-up is of great importance for early diagnosis and timely treatment of possible bone loss. Although our study emphasizes the importance of panoramic radiographs in patient follow-up, the adequacy of this method is open to discussion. More comprehensive studies on the subject are needed.

Keywords: cover denture, trabecular bone density, fractal bone analysis

PP-079 Evaluation of mechanical and surface properties of indirect occlusal veneer materials under thermomechanical loading

Aleyna Dilekçi[1], Merve Özarslan[1], Dilber Bilgili Can[2], Mehmet Esad Güven[3], Ikbal Esra Pehlivan[4]

([1]Department of Prosthodontics, Akdeniz University, Antalya, Turkey; [2]Department of Restorative Dentistry, Antalya Bilim University, Antalya, Turkey; [3]Department of Prosthodontics, Necmettin Erbakan University, Konya, Turkey; [4]Department of Restorative Dentistry, Yüzüncü Yıl University, Van, Turkey)

OBJECTIVE: The aim of this study is to evaluate and compare the surface roughness, micro hardness, wear, and fracture resistance of different indirect occlusal veneer materials under thermomechanical loading conditions.

MATERIALS-METHODS: Flat specimens were prepared from five CAD/CAM materials and one indirect composite. The tested materials included lithium disilicate (LDS), zirconia-reinforced lithium disilicate (ZR-LDS), composite resin block (CRB), indirect composite resin (ICR), and monolithic zirconia (MZ), alongside sound enamel as the control. Microhardness and surface roughness were measured before and after thermomechanical loading (TML) of 240,000 cycles, 50 N, between 5°C and 55°C. Occlusal veneers (1.5 mm thickness) were fabricated and bonded to 45 extracted maxillary premolars. Volume loss was evaluated using 3D metrology software. Fracture resistance was tested with a universal testing machine, and surface morphology was observed through scanning electron microscopy (SEM). Statistical analyses were performed using one-way ANOVA and Kruskal-Wallis tests (α=0.05).

RESULTS: All materials showed an increase in surface roughness after TML, with LDS showing a significant difference ($p<0.05$). Microhardness decreased significantly in ZR-LDS and MZ groups, while CRB and ICR had the lowest values both before and after loading. LDS exhibited the least volume loss; ICR had the highest, but differences were not statistically significant. The highest fracture resistance was found in LDS and CRB, while the control group showed the lowest resistance. SEM images revealed more visible wear in the ICR, CRB, and enamel specimens.

CONCLUSION: All tested materials appear suitable for occlusal veneer restorations, but surface properties and antagonist wear must be considered when selecting restorative materials for long-term clinical use.

Keywords: Cad-cam, occlusal veneer, wear, microhardness, fracture strength, thermomechanical loading

PP-080 Evaluation of Oral Health–Related Quality of Life in Geriatric Patients Using Removable Partial Dentures

Mustafa Yiğit Elmas, Muhammed Abdullah Kiki, FUNDA BAYINDIR

(Departmant of Prosthodontics, Ataturk University, Erzurum, Turkey)

OBJECTIVES: The primary aim is to emphasize the significance of adopting an interdisciplinary approach to geriatric care in light of global demographic changes. The importance of addressing the multifaceted nature of aging-related conditions is highlighted, alongside the necessity for personalized, function-oriented interventions that extend beyond mere disease management.

MATERIALS-METHODS: The study involved 100 patients from the Prosthodontics Department of Atatürk University with a minimum of 3 months of denture use. Participants were classified based on prosthetic types (Upper/Lower RemovableDentures). The GOHAI index, assessed physical, psychosocial, and pain-reduction factors. GOHAI scores ranged from 12 to 60, with '<50' indicating low, '51-56' medium, and '57-60' high quality of life. Higher GOHAI scores correlate with better quality of life.

RESULTS: The study's demographic analysis revealed that 64% of participants were aged 65-72, with 36% over 72. The gender distribution favored males (61%) over females (39%). In terms of marital status, 49% were married and 51% single. Educationally, 43% had primary, 41% secondary, 10% university, and 6% postgraduate education. Significant correlations were found between demographic factors and responses to certain questions, particularly gender and marital status affecting specific responses. Notably, education level positively influenced responses to questions 1, 2, 6, 8, 9, and 10, with higher education correlating with more positive responses.($p<0.05$)

CONCLUSIONS: The results of the study show that the functional problems (such as eating, speaking, and pain) that patients experience due to prosthesis use directly affect their quality of life. In addition, the aesthetic appearance of the prosthesis was found to have a significant impact on the social life and psychosocial status of individuals.

Keywords: Geriatrics, Removable Partial Dentures, Oral Health, Quality of Life, Prosthodontics

PP-081 Evaluation of Plaque Accumulation on Denture Surfaces by Dental Students and Postgraduate Residents

Habibe Öztürk Ulusoy[1], Kaan Dursunoğlu[2], Yasemin Şevval Baysal[2], Ece Devrez[2], Şeyma Yücebaş[2], Raif Alan[3]

([1]Department of Prosthodontics, Çanakkale Onsekiz Mart University, Çanakkale,Türkiye; [2]Undergraduate Student, Çanakkale Onsekiz Mart University, Çanakkale,Türkiye; [3]Department of Periodontogy, Çanakkale Onsekiz Mart University, Çanakkale, Türkiye)

OBJECTIVES: This study aimed to evaluate the distribution of plaque accumulation on different denture and tooth surfaces in complete denture wearers and to investigate the effect of examiner experience on plaque scoring.

MATERIALS-METHODS: The intaglio and tooth surfaces of both maxillary and mandibular complete dentures were assessed using a modified plaque index by two distinct examiner groups: final-year undergraduate dental students and postgraduate prosthodontic residents. Statistical tests used included the Mann-Whitney U test to compare the two groups, the Friedman test to compare the surfaces within the same subjects, and the Intraclass Correlation Coefficient (ICC, model 2.1) to check how consistent the examiners were with each other.

RESULTS: Results revealed that the mandibular denture tooth surfaces exhibited the highest mean plaque scores. However, the Friedman test indicated no statistically significant differences in plaque accumulation among the evaluated surfaces ($p = 0.27$). In contrast, significant differences were observed between students and residents on certain surfaces ($p < 0.05$), suggesting that clinical experience may enhance scoring sensitivity. Notably, inter-rater reliability across all examiners was found to be very low, with an ICC(2,1) value of 0.035. This result highlights a lack of consistency among raters, particularly within the undergraduate group, and emphasizes the need for calibration training.

CONCLUSION: Clinical experience appears to play a crucial role in the reliability of plaque assessment. The findings suggest that uncalibrated visual scoring methods may lead to significant variability among inexperienced evaluators. Therefore, structured calibration protocols should be incorporated into dental education to ensure reliable and reproducible clinical assessments of denture hygiene.

Keywords: Complete denture, plaque index, observer agreement, dental education, oral hygiene

PP-082 Evaluation of Surface Treatments and Metal Fabrication Techniques on Repair Material Bond Strength to Fractured Porcelain

Ulviye Şebnem Büyükkaplan, Emre Kaygusuz, Muhammed Kodak

(Department of Prosthodontics, Akdeniz University, Antalya, Turkey)

OBJECTIVE: Porcelain fused to-metal restorations are commonly used in dental treatments. In cases of intraoral porcelain fractures, it is not always possible to remove the existing restoration without damaging its integrity. However, recent advancements in material technology have made the intraoral repair of minor fractures a safe and effective treatment option. The aim of this study is to examine how the bond between porcelain repair materials and metal substructures produced using different techniques is influenced by different type of surface treatment applied.

MATERIALS-METHOD: The same dental ceramic was applied to a total of 160 metal specimens fabricated using three different techniques (laser sintering, casting, and CAD/CAM). In each specimen, a 2 mm diameter area of the ceramic surface was removed. Four different surface treatments (hydrofluoric acid etching, laser irradiation, air-particle abrasion, and silica coating) were applied to the metal surfaces. After the repair procedures, the bond strengths between the ceramic and the repair material were measured. Additionally, the surface of one specimen from each group was examined using a scanning electron microscope (SEM). The obtained data were analyzed using Two-Way ANOVA and One-Way ANOVA tests.

RESULTS: The metal substructures produced by casting were found to be statistically different from those produced by EOS, CAD-CAM, and Concept Laser ($p<0.05$). No significant difference was observed among the other three methods ($p>0.05$). The highest bond strength was observed in the group in which silica coating was applied to the cast substructure. (34.31±3.31 MPa), while the lowest bond strength was observed in the group which laser treatment was applied on the Concept Laser substructure (18.55±2.86 MPa).

CONCLUSION: Within the limitations of the present study, silica coating could be recommended as a surface treatment for the repair of porcelain fractures where the metal surface is exposed.

Keywords: Porcelain repair, Bond strength, Silica coating, Metal substructure, Laser sintering

PP-084 Evaluation of the Effectiveness of Different Intraoral Scanners in Shade Selection

Funda Bayindir[1], Onur Taşdemir[2]

([1]Atatürk University; [2]Kafkas University)

AIM: The aim of this study was to investigate the efficacy and repeatability of different intraoral scanners for in vitro shade selection.

MATERIALS-METHODS: Three intraoral scanners (Trios 5, Primescan, Medit i700) and two shade guides (Vita Classic, Vita 3D Master) were used in this study. Measurements from the intraoral scanners were compared with those from a spectrophotometer. The Vita Classic shade guide contains 16 samples, while the Vita 3D Master shade guide contains 26 samples, giving a total of 42 samples. Analyses of the accuracy, precision and trueness of the values obtained were carried out. Statistical analyses of the data were performed using independent samples T-test and parametric one-way ANOVA tests.

RESULTS: As a result of the analyses performed, it was determined that the Trios 5 device had the highest accuracy rate (%75) in the Vita Classic color guide, while the Primescan device had the highest accuracy rate (%84.62) in the Vita 3D Master color guide. The Trios 5 also performed best on the Vita Classic color guide, with the lowest trueness value (0.25). In contrast, the Primescan device performed best on the Vita 3D Master color gamut with the lowest trueness value (0.15). Standard deviation analyses showed that the Trios 5 device provided higher trueness for some measurements, while the Primescan and Medit i700 devices showed similar levels of trueness.

CONCLUSION: When comparing the devices, the Primescan device can be considered the best scanner overall due to its high accuracy (%84.62) and low trueness value (0.15) in the Vita 3D Master, as well as its consistency in terms of repeatability. The Trios 5, on the other hand, is the scanner with the best performance (%75) in the Vita Classic color scale.

Keywords: Intraoral scanner, tooth color, color selection

PP-086 Finite Element Analysis of Stress Distribution in Endodontically Treated Abutment Teeth with Periapical Lesions

Mümine Bozan[1], Ömer Kırmalı[1], Ayten Zeynallı[1], Türker Akar[2], Hüseyin Kürşat Çelik[3]

([1]Department of Prosthodontics, Akdeniz University, Antalya, Turkey; [2]Department of Prosthodontics, Erzincan Binali Yıldırım University, Erzincan, Turkey; [3]Department of Agricultural Machinery and Technologies Engineering, Akdeniz University, Antalya, Turkey)

OBJECTIVES: Endodontically treated teeth with periapical lesions may show variable biomechanical responses during the healing process, and their compromised structural integrity may influence the success of restorations when used as abutments. This study aims to evaluate stress distribution in abutment teeth with periapical lesions and surrounding tissues under occlusal forces using finite element analysis (FEA).

MATERIALS-METHODS: Three finite element analysis (FEA) models were created: a healthy mandibular premolar tooth (Model 1), a single-crown mandibular premolar with a periapical lesion, restored with a fiber post (Model 2), and a mandibular premolar with a periapical lesion, restored with a fiber post and used as an abutment in a three-unit fixed partial denture (Model 3). In all models, a static occlusal load of 300 N was applied at a 45° angle to the long axis of the tooth, onto the lingual incline of the buccal cusp. Stress distribution and deformation behavior were analyzed in all components.

RESULTS: Stresses induced by occlusal load were concentrated in similar regions across all models. However, the magnitude and distribution patterns varied among them. In Model 2, stress extended apically along the root, and the maximum stress value in the lesion area was 0.061 MPa, higher than in Model 3 (0.054 MPa). Model 2 also showed the highest deformation. In all models, the highest stress values were found in the buccocervical areas.

CONCLUSIONS: Teeth with periapical lesions used as abutments in fixed prostheses exhibit distinct stress patterns, which may influence the success of the restoration. A thorough evaluation of stress distribution and deformation is essential in clinical decision-making regarding their use as abutments.

Keywords: Finite element analysis, fixed partial denture, periapical lesion, fiber post

PP-088 Formation, maintenance, and transfer of the peri-implant soft tissue emergence profile in the esthetic zone for final prosthetic rehabilitation

Merve Nihan Kartal, Orhun Ekren

(Department of Prosthodontics, Cukurova University Faculty Of Dentistry, Adana, Turkey)

INTRODUCTION: This case report describes the prosthetic treatment of a maxillary right central incisor with external root resorption using a single-tooth implant-supported restoration.

Case Description: A 52-year-old female patient was referred to the Department of Prosthodontics at Çukurova University, presenting with external root resorption in the maxillary right central incisor (Fig. 1). The tooth had previously undergone a root canal treatment. The presence of a high smile line necessitated a focus on aesthetic concerns. Immediate implantation was planned after extraction.After implant placement, a three-month healing period was allowed for osseointegration, during which time the patient used a temporary prosthesis consisting of an acrylic tooth placed in an occlusal splint. A second-stage surgery was then performed, and a healing cap was placed (Fig. 2). A closed-tray impression was taken to shape the gingiva, and a model was fabricated (Figs. 3–4). The plaster model was sculpted to shape the emergence profile (Figs. 5–10), and soft tissue was allowed to adapt for a period of three weeks (Fig. 11). Following the achievement of optimal gingival contour, an impression was taken over the temporary crown using additionaly silicone. The crown was then inserted into the impression to transfer the tissue shape to the laboratory (Figs. 12–13). A zirconia-based custom abutment was fabricated, and an Empress crown was designed and placed (Fig. 14).

Discussion: Soft tissue shaping and precise transfer of gingival contour are essential for anterior implant restorations.. When the temporary prosthesis is removed and the model is obtained, it is essential to ensure that the gingiva does not collapse during the waiting period (Fig 15). A Ti-base abutment was preferred because of it is aesthetic advantages compared to the all-titanium milled option, and zirconia was preferred because of it is better compatibility with the gingiva.

Keywords: prosthetic rehabilitation, emergence profile, immediate loading, soft tissue contour, single-tooth dental implant

PP-089 Fracture strength of CAD-CAM resin-based crowns on different framework materials

doğu ömür dede, mustafa barış pomay

(Department of Prosthodontics, Faculty of Dentistry, Ordu University, Ordu, Turkey)

Objectives: The aim of this study was to evaluate the fracture strength (FS) of resin-based crowns on different frameworks fabricated with different Computer Aided Design-Computer Aided Manufacturing (CAD-CAM) techniques and materials. Material and methods. Seventy-two maxillary premolar framework (die) specimens were fabricated using subtractive manufacturing (SM) CAD-CAM techniques with polyetheretherketone (SM_PEEK), titanium (SM_TI) and additive manufacturing (AM) with cobalt chrome (AM_CoCr) materials. Also 72 maxillary premolar crowns were fabricated using SM with polymethylmethacrylate (SM_PMMA), AM with temporary crown-bridge resin (AM_CB), and permanent crown resin (AM_CT) materials. The crown and frameworks were sandblasted with 50 and 110 µm Al_2O_3 and connected with a dual cure resin cement. Specimens were stored in 37ºC distilled water for 24 hours and the FS test was performed at a crosshead speed of 1 mm/min using a universal testing machine. FS data were statistically analyzed with two-way analysis of variance (ANOVA) and Tukey HSD test (α=.05). **RESULTS:** Different manufacturing techniques and materials, and their interactions were significant on the FS values (P<.001). While the highest FS value was determined for AM_CB crowns on SM_TI framework group (1352.62 ± 120.94 N), highest pooled FS values determined for SM_PEEK framework (1250.1 ± 87.8 N) and SM_PMMA crown (1237 ± 96.6 N) material groups (P<.05).

CONCLUSIONS: The manufacturing techniques and material types are effective on the clinical performance of resin-based crowns. The AM resin-based crowns on the SM titanium framework will be the more durable resin-based fixed partial denture combination.

Keywords: CAD-CAM, additive manufacturing, subtractive manufacturing, resin-based crowns, fracture strength.

PP-090 From completely edentulous to implant-supported full arch restorations with digital workflow despite anatomical limitations

Melike Yalçıntaş Ardıç

(Department of Prosthodontics, Çankırı Karatekin University Faculty of Dentistry, Çankırı, Turkey)

INTRODUCTION: In cases of long-term edentulism, implant placement becomes difficult as alveolar crest resorption progresses. Anatomical limitations are avoided with the developments in different implant techniques and types. All-on-four concept enables the fabrication of full-arch fixed restorations supported by four implants placed axially in the anterior region and two implants placed tilted in the posterior region. In cases of severe maxillary atrophy, if conventional implants cannot be used, zygomatic implants that are longer and anchored in the zygomatic bone can be used. In this case, implant-supported fixed prosthesis rehabilitation was aimed in a edentulous patient despite various limitations.

CASE: A 58-year-old edentulous female patient applied to our clinic with a request for a fixed prosthesis. As a result of clinical and radiographic examination, advanced maxillary atrophy and vertical bone loss in the posterior mandible were detected. In order to avoid sinus surgery, preserve anatomical structures, and eliminate the need for grafting, it was decided to apply the all-on-four concept and perform a zygomatic implant in the maxilla. It was observed that the distance between the crests of the patient was more than 15 mm, which allows the fabrication of a hybrid prosthesis. Four zygomatic implants were placed in the maxilla, and four implants were placed in the mandible, with the posterior implants angled. After waiting for the completion of osseointegration, the prosthesis phase was started. Angled multi-unit abutments were used to ensure parallelism and correct access path. Digital impressions were taken from the patient using an intraoral scanner. The measurements taken were transferred to the laboratory in the virtual environment. The screw-retained hybrid prosthesis made on a metal framework was delivered to the patient.

Discussion: The prosthetic rehabilitation of the patient with severe bone destruction was completed with full digital workflow, zygoma implants and all-on-four concept.

Keywords: Hybrid prosthesis, Digital dentistry, All-on-four, Zygomatic implant

PP-091 Full Mouth Rehabilitation of a Partially Edentulous Epileptic Patient using Graphene Reinforced PMMA

İrem Öztürk, Sedanur Turgut, Nesim Şahin

(Department of Prosthodontics, Karadeniz Technical University, Trabzon, Turkey)

INTRODUCTION: Epilepsy is a neurological disorder characterized by recurring seizures. Antiepileptic drugs, such as carbamazepine, which are commonly used for treatment, can cause various systemic and oral side effects and may lead to early tooth loss. This study presents fixed full-mouth rehabilitation for an epileptic patient with multiple missing teeth.

Case Description: A 19-year-old male patient visited the clinic with complaints of missing teeth, aesthetic and functional problems. His medical history revealed that he has epilepsy and is using carbamazepine (Tegretol 200 mg). Teeth 11, 21, 31, 32, 33, 34, 41 and 44 were missing. Worn teeth and loss of the vertical dimension were observed. Gingivectomy was performed between teeth 13 and 23. Fiber posts were applied to teeth 12, 22 and 45. All teeth were prepared, and for impressions were performed. Graphene-reinforced polymer-based restorations (G-CAM) were chosen for the upper jaw due to the lower transmission of occlusal forces to the opposing jaw and their satisfactory aesthetics. Metal-porcelain restorations were chosen for the lower jaw. Temporary teeth were made before the final restoration to raise the occlusal vertical dimension by approximately 2 mm, and the patient used them for two months to adapt. Cementation was performed with self-adhesive resin cement for graphene-reinforced polymer and polycarboxylate cement for metal-porcelain restoration. At the 12-month follow-up after rehabilitation, no prosthetic complication was observed.

Discussion: Fixed prostheses are recommended for epileptic patients due to the risk of injuries and aspiration during seizures. In this case, although the length of the edentulous space is at the limit for the fixed prosthesis, removable prosthesis was not considered for this reason. Graphene-reinforced polymer-based restorations were preferred due to their aesthetic advantages. Graphene-based polymer increases hardness and elastic modulus, reducing the risk of cracks and fractures. Additionally, graphene is lightweight, so it allows the production of lighter restorations.

Keywords: Graphene-reinforced polymer, Esthetic, Epilepsy

PP-092 Full mouth rehabilitation with multi unit abutment supported fixed prosthesis: case report

Damla Uyar, OĞUZHAN Yilmaz

(Department of Prosthetic Dentistry, Sivas Cumhuriyet University, Sivas, Turkey)

INTRODUCTION: Total tooth loss causes phonetic, aesthetic, functional and psychological problems in patients and significantly reduces the quality of life. In the past, traditional complete dentures were routinely preferred in these patients, but today, with the widespread use of implants, dental implants have shown an effect on stabilization and retention in fixed restorations and removable prostheses. Implant-supported fixed or removable prostheses can offer more satisfactory results in terms of aesthetics, function and phonation.

Case Description: A 55-year-old female patient was admitted to our clinic with the complaint of total edentulism. As a result of intraoral examination and radiologic evaluations, it was decided to plan an implant-supported fixed prosthesis in line with the patient's expectations. After radiographic and clinical controls performed 6 months after implant placement, a multi-unit abutment-supported fixed prosthesis was planned for both jaws and the impression stage was started. The impressions taken with the open impression technique were sent to the laboratory and the metal substructure designed in the digital environment was produced by laser sinterization method. The metal substructure was rehearsed in the mouth, necessary corrections were made and color selection was completed with the patient. Afterwards, the porcelain superstructure was processed in the laboratory and the intraoral harmony and occlusal relations were evaluated in a second fitting session. After the aesthetic evaluations, the glazed prostheses were fixed to the implants by screwing with the appropriate torque value. After delivery, the patient was checked every 6 months.

Discussion: Implant-supported fixed restorations in cases of total edentulism offer patients a higher level of functional, aesthetic and psychological satisfaction compared to traditional complete dentures. Screwed restorations offer the advantage of removability, especially in implant-retained prostheses, allowing future complications (e.g. screw loosening) to be easily managed. They also eliminate the risk of peri-implant mucositis and peri-implantitis from cement residue.

Keywords: Dental Implants, Prostheses, Esthetics

PP-093 Full mouth rehabilitation with Toronto prosthesis: Immediate loading to final restoration - A Case Report

Gökberk Koçer

(Department of Prosthodontics, Faculty of Dentistry, Kırıkkale University, Kırıkkale, Turkey)

INTRODUCTION: Severe alveolar atrophy and advanced periodontal destruction often complicate full-mouth rehabilitation and limit prosthetic treatment options. The Toronto prosthesis has emerged as an effective and esthetically superior treatment option in such challenging clinical cases, offering comprehensive restoration of hard and soft tissues through an implant-supported metal framework with individually cemented crowns. This approach provides advantages such as enhanced biomechanical stability, improved esthetics, and high patient satisfaction.

Case Description: A 65-year-old male patient applied to our clinic with significant functional, esthetic, and phonetic concerns due to severe periodontal disease and extensive alveolar bone loss. Clinical and radiographic evaluations led to a treatment plan involving full-mouth extraction and placement of six implants in both the maxilla and mandible. Considering the patient's esthetic expectations, Toronto bridge type implant-supported hybrid prosthesis was initially planned.Because of a Class III occlusion, screw access holes in the anterior region would have caused esthetic compromise; the use of a Toronto bridge effectively addressed this issue. Following surgery, immediate loading was performed using provisional prostheses to promptly restore esthetics and function. After successful osseointegration, final Toronto prostheses were fabricated.

Discussion: In patients with advanced periodontal destruction and resulting atrophic alveolar ridges, treatment with conventional methods can be highly challenging. In immediate loading protocols, delivering a provisional prosthesis at the time of surgery not only restores esthetics, function, and phonetics instantly but also supports the maintenance of the healing site and simplifies the fabrication of the definitive prosthesis. The Toronto prosthesis provides additional advantages in patients with increased interocclusal distance and Class III occlusion, offering superior esthetics and eliminating the issue of visible screw access holes compared to conventional approaches. Its design ensures efficient force distribution, ease of maintenance, and optimal esthetic outcomes, making it a reliable and advanced alternative in complex implant-supported rehabilitations.

Keywords: Dental Implants; Prosthodontics; Dental Prosthesis, Implant-Supported; Esthetics, Dental

PP-094 Full-Arch Implant-Supported Restoration Using Non-Calibrated Scan Bodies: A Case Report

Hüsniye Yıldırım[1], Vafa Azizalizada[1], Eda Gül Kayır[1], mustafa barış güncü[2]

([1]Research Assistant, Department of Prosthodontics, Faculty of Dentistry, Hacettepe University, Ankara; [2]Professor, Department of Prosthodontics, Faculty of Dentistry, Hacettepe University, Ankara, Turkey)

INTRODUCTION: The utilization of digital impression techniques contributes to reduced chair-time in the fabrication of implant-supported restorations. Nevertheless, multiple factors such as the length of the edentulous span can negatively affect the accuracy of digital implant scans. Various techniques have been proposed to improve the accuracy of complete-arch implant scans obtained using intraoral scanners (IOSs). Among these techniques, non-calibrated scan body systems offer a simplified scanning process, particularly in cases involving long edentulous spans with multiple implants. The purpose of this clinical report is to present a complete digital workflow for the fabrication of complete arch fixed implant restorations utilizing non- calibrated scan bodies.

Case Description: A 44-years-old male patient with six previously placed maxillary implants was referred to our clinic for definitive prosthetic treatment. Non-calibrated scan bodies were placed on each implant, and a complete digital scan of the maxilla was performed. The data were transferred to CAD/CAM software, where a monolithic zirconia prosthesis supported by a titanium bar was designed and fabricated entirely in a digital workflow. During clinical try-in, passive fit was confirmed. The patient expressed satisfaction with both the treatment process and the final prosthesis

Discussion: This case shows that full-arch implant-supported restorations in a fully edentulous maxilla can be successfully completed using non-calibrated scan bodies. Despite calibrated systems offering higher accuracy, their complex workflows and limited accessibility can be challenging. In contrast, the non-calibrated approach proved simpler, faster, and seamlessly compatible with the CAD/CAM process. Despite the potential for minor deviations in accuracy with non-calibrated systems, a clinically acceptable passive fit was achieved. The procedure was well-tolerated by the patient and yielded a functional and esthetically pleasing result in a short period.

Keywords: Dental Impression Technic, data Accuracy, dental implant, computer-aided design, computer-aided manufacturing.

PP-095 Full-arch rehabilitation involving vertical dimension increase and bar-supported monolithic zirconia restorations: a case report

Farıda Alıyeva, Kubilay Barutcigil

(Akdeniz University, Faculty of Dentistry, Antalya, Turkey)

INTRODUCTION: This case report presents the clinical procedure and outcomes of bar-supported, cement-retained monolithic zirconia restorations used to restore the vertical occlusal dimension in a patient with a completely edentulous maxilla and partially edentulous mandible.

Case Description: A 53-year-old male patient with no systemic diseases presented to our clinic seeking rehabilitation of missing teeth and improvement in function and esthetics. Clinical and radiographic evaluations revealed complete edentulism in the maxilla and presence of natural teeth in the mandibular anterior region (teeth 31–33 and 41–43), with partial edentulism in the posterior segments. In the maxilla, six implants were placed, and due to the increased occlusal vertical dimension, a bar-supported, cement-retained monolithic zirconia fixed prosthesis was planned. In the mandible, the existing anterior teeth were conservatively prepared and restored with a monolithic zirconia bridge. For the posterior edentulous regions, implants were placed and connected with narrow bar structures, upon which cement-retained monolithic zirconia prostheses were fabricated. A new occlusal plane was established alongside the increased vertical dimension to ensure both functional efficiency and esthetic harmony.

Discussion: Treatment resulted in a stable and functional occlusion. Esthetic and phonetic improvements were achieved through vertical dimension increase. The integration of tooth- and implant-supported prostheses provided biomechanical balance. The patient regained effective mastication and a harmonious facial profile and expressed satisfaction with both the treatment process and outcomes. This case demonstrates that in complex cases with combined edentulism and vertical dimension loss, bar-supported monolithic zirconia restorations offer reliable functional, esthetic, and biomechanical outcomes. Success is closely tied to accurate diagnosis, appropriate material selection, and well-structured treatment planning.

Keywords: bar-supported prosthesis, cement-retained restoration, full-arch rehabilitation

PP-096 Full-arch rehabilitation on multi-unit abutments with composite jig based ıntermaxillary record: A clinical case report

Bahar Kavafoğlu Yılmaz[1], Evşen Tamam[2]

([1]Bahar Kavafoğlu Yılmaz; [2]Evşen Tamam, Department of Prosthodontics, Gazi University, Ankara, Turkey)

INTRODUCTION: Full-arch implant-supported fixed prostheses are a reliable treatment option for edentulous patients, offering long-term success and improved quality of life. Proper abutment selection, passive fit, and functional occlusal planning are key factors for a predictable outcome.

Case Description: A 53-year-old male patient was referred to the Department of Prosthodontics at Gazi University with complaints of compromised esthetics, functional limitations, and the need for definitive prosthetic rehabilitation. The patient had six NucleOSSÒ implants previously placed in each of the maxillary and mandibular arches. Following clinical and radiographic examination, the patient's facial profile and interarch relationship were assessed. Initial impressions were taken using the closed tray impression technique. Record bases and occlusion rims were fabricated, and the definitive casts were mounted on a semi-adjustable articulator. After evaluating implant angulations and positions, the treatment plan included screw-retained metal-ceramic prostheses over multi-unit abutments for both arches. Definitive impressions were obtained using the open custom tray technique after placement of multi-unit abutments. A resin verification bar was tried in to assess passive fit and alignment. Subsequently, the vertical dimension, maxillomandibular relationship, and midline were verified using a 'composite jig' manually fabricated on the metal bar. Using the anterior composite jig allowed for a more accurate and reproducible recording of the maxillomandibular relationship. The definitive interocclusal record was obtained using silicone material and transferred to the articulator. Following the metal framework try-in, a ceramic try-in was performed. The case was finalized with a canine-guided occlusion. The patient was instructed on hygiene protocols, and long-term follow-up was scheduled.

Discussion: This case highlights the integration of conventional and digital techniques in full-arch restorations, emphasizing the significance of abutment selection, passive fit verification, and occlusal precision. Proper registration and verification steps significantly enhance clinical accuracy and patient satisfaction in full-mouth implant-supported prosthodontics.

Keywords: Dental Prosthesis, Implant-Supported Prosthesis

PP-097 Full-arch rehabilitation with milled titanium bars and monolithic zirconia prostheses: a case series

Irem Sözen Yanık, Dilara Şahin Hazır, M. Barış Güncü, Duygu Ipek Sedef Arpacı

(Department of Prosthodontics, Hacettepe University, Ankara, Turkey)

INTRODUCTION: The All-on-Four concept has proven to be a successful treatment option. However, the search for the ideal prosthetic material is still ongoing. Reported complications associated with acrylic, metal-ceramic, and zirconia prostheses have led to the pursuit of alternative solutions. One of these is the hybrid use of monolithic zirconia crowns on a titanium framework manufactured by reverse engineering. Milled titanium bars provide mechanical strength, while monolithic zirconia offers improved esthetics and wear resistance. Clinical follow-up is needed to evaluate the long-term performance of these prostheses. This case series presents the clinical workflow and short-term outcomes of three edentulous patients rehabilitated with full-arch implant-supported prostheses fabricated using CAD/CAM-milled titanium bars and monolithic zirconia crowns following the All-on-Four concept.

Case Description: Three patients with edentulous mandibles or maxillae were treated using the All-on-Four concept. Following the placement and osseointegration of bone level implants (Straumann, Basel, Switzerland), multi-unit abutments were connected. Digital impressions were obtained using a intraoral scanner (3Shape, Copenhagen, Denmark) with compatible Straumann multi-unit scan bodies in place. The virtual models were imported into Exocad software (Exocad GmbH, Darmstadt, Germany) for prosthetic design. Provisional restorations were initially fabricated to assess esthetics, and occlusion. After intraoral adjustments and patient approval, definitive prostheses were fabricated using CAD/CAM-milled titanium bars layered with monolithic zirconia crowns. Titanium base copings were cemented in the mouth for a better passive fit. Clinical fit, occlusion, and phonetics were assessed at delivery, with follow-up at 6 months.

Discussion: All restorations showed excellent passive fit and stability, with no technical or biological complications observed during follow-up. Patients reported high satisfaction in comfort, function, and appearance. This case series confirms that digitally fabricated, screw-retained full-arch prostheses supported by titanium bars and zirconia crowns offer a reliable and esthetically favorable solution in All-on-Four treatments

Keywords: titanium bar, monolithic zirconia, all-on-four

PP-098 Full Mouth Rehabilitation in a Patient with Tooth Wear and Vertical Dimension Loss

Sabe Nur Seçir, Meral Arslan Malkoç

(Department of Prosthodontics, Faculty of Dentistry, Akdeniz University, Antalya, Turkey)

INTRODUCTION: Bruxism is a parafunctional habit that may lead to severe tooth wear and loss of vertical dimension over time. This case report presents a full-mouth rehabilitation of a patient with bruxism-induced tooth wear.

CASE PRESENTATİON: A 50-year-old male patient presented to the clinic with complaints of tooth wear, inadequate masticatory function, and esthetic concerns. Clinical examination revealed generalized tooth wear, edge-to-edge occlusal relationship, tooth loss, and a decreased vertical dimension. Gingivectomy was performed on the upper anterior teeth to increase the clinical crown height. All remaining teeth, except for the four lower anterior incisors, were prepared. A new vertical dimension was established and recorded with an occlusal registration. PMMA restorations were fabricated to assess function and esthetics. Occlusion and vertical dimension were adjusted according to ideal functional and esthetic principles. Final restorations were fabricated from monolithic zirconia using CAD/CAM technology. At 3 and 6 month follow-ups, the patient reported satisfaction with the restorations, and the newly established vertical dimension and esthetic improvements positively affected the facial and soft tissue profile, including masticatory function.

Discussion: Although the etiology of occlusal wear is not fully understood, it is generally considered to be associated with parafunctional habits. Excessive occlusal forces generated during bruxism may exceed the adaptive capacity of the masticatory system and result in damage. Therefore, careful treatment planning is essential. In this case, monolithic zirconia restorations provided a durable and esthetic solution for long-term rehabilitation.

Keywords: Bruxism, Vertical Dimension Loss, Tooth Wear, Full-Mouth Rehabilitation, Monolithic Zirconia, Crown Lengthening

PP-099 Full-Mouth Rehabilitation of Vertical Dimension Loss Using Monolithic Zirconia: A Case Report

Tabia Sena Yılmaz[1], Nurullah Türker[1], Büşra Sirkeci[2], Nezahat Arzu Kayar[2]

([1]Akdeniz University Faculty of Dentistry, Department of Prosthodontics; [2]Akdeniz University Faculty of Dentistry, Department of Periodontology)

INTRODUCTION: Tooth wear is the progressive loss of dental hard tissues caused by factors such as abrasion, attrition, erosion, and parafunctional habits. Bruxism, characterized by involuntary clenching and grinding of the teeth, is a major etiologic factor that may result in structural damage to the dentition and temporomandibular joint. It often leads to occlusal surface loss, vertical dimension reduction, impaired esthetics and function, and decreased longevity of teeth.

Case Description: This case report presents the full-mouth prosthetic rehabilitation of a forty-seven-year-old female patient with a history of severe bruxism and significant loss of occlusal vertical dimension. Clinical and radiographic examination revealed generalized tooth wear, failed restorations, and reduced vertical dimension. A treatment plan was established involving removal of existing restorations, gingivectomy on anterior teeth, and full-mouth tooth preparations. Ideal vertical dimension was re-established using provisional restorations, followed by definitive treatment with monolithic zirconia crowns. During the follow-up period after treatment, no signs of fracture, crack, or wear were observed in the restorations. The patient reported high levels of functional and aesthetic satisfaction, with achieved occlusal stability. A reduction in bruxism symptoms and an improvement in masticatory efficiency were observed.

Discussion: Restoring decreased vertical dimension in bruxism patients presents a clinical challenge. In this case, monolithic zirconia restorations were chosen due to their high strength, wear resistance, and satisfactory esthetic results. Current literature supports their long-term clinical success in bruxism cases. This report highlights monolithic zirconia as a reliable and effective restorative solution in managing tooth wear and vertical dimension loss due to bruxism.

Keywords: Bruxism, Reduced Occlusal Vertical Dimension, Monolithic Zirconia, Full-Mouth Rehabilitation, Fixed Prosthodontics

PP-100 Full-mouth rehabilitation with implant-supported screw-retained fixed and hybrid prostheses

Nuray Çapa Yıldırım[1], Ediz Deniz[2], Ebru Özkan Karaca[3], Elifnaz Özen Sütüven[4], Aslı Çavuşoğlu[5]

([1]Professor, Department of Prosthodontics, Yeditepe University, Istanbul, Turkiye; [2]Associate Professor, Department of Oral and Maxillofacial Surgery, Yeditepe University, Istanbul, Turkiye; [3]Associate Professor, Department of Periodontology, Yeditepe University, Istanbul, Turkiye; [4]Assistant Professor, Department of Prosthodontics, Yeditepe University, Istanbul, Turkiye; [5]PhD Student, Department of Prosthodontics, Yeditepe University, Istanbul, Turkiye)

INTRODUCTION: Implant-supported fixed prostheses are increasingly preferred for the rehabilitation of complete and partial edentulism. Selection of prosthesis type should be based on individual anatomical and clinical conditions.

Case Description: A 62-year-old male patient presented with advanced periodontal disease. Extraction of all maxillary teeth and all mandibular teeth except #43, #33, #34, and #35 was planned. Initial and advanced periodontal treatments were applied to remaining teeth. Following maxillary extractions, an immediate complete denture was fabricated, and temporary acrylic bridge was made for mandibular teeth. After 3-months healing period, implants were placed in maxilla (#12,#13, #15, #22, #23, #25) and mandible (#44, #46, #36). During the osseointegration period, the maxillary denture was relined with soft acrylic. After the osseointegration period, implant and prepared teeth impressions were taken. Angled multi-unit abutments for the maxilla and straight multi-unit abutments for #44 and #46 were selected and torqued. Screw-retained single implant-supported crown was planned for #36. A hybrid prosthesis was fabricated for the maxilla with acrylic layered over metal bar. Screw-retained metal-porcelain prostheses were delivered on mandibular implants (#44–#46, #36), and metal-porcelain restorations on teeth #43-#35. A maxillary occlusal splint was provided for protection against any nocturnal parafunctional activity, and the patient was scheduled for monthly follow-up.

Discussion: Immediate loading of maxillary implants was not possible due to insufficient primary stability; thus, a temporary complete denture was used during the osseointegration phase. Hybrid prosthesis was preferred in the maxilla due to sufficient interarch space, soft tissue and anatomical limitations. Screw-retained restorations were chosen for their reduced biological complications compared to cemented restorations. The treatment provided functional and esthetic full-arch rehabilitation.

Keywords: Implant, Hybrid prosthesis, Screw-retained restorations

PP-101 Fully Digital Multidisciplinary Prosthodontic Rehabilitation Involving Crown-Lengthening, Implant-Supported Prostheses and Laminate Veneers

Sevilay Horoz, Sevda Deniz, Betül Arslan Acicbe, Mustafa Yılmaz, Mustafa Cenk Durmuşlar

(Department of Prosthodontics, Faculty of Dentistry, Biruni University, Istanbul, Turkey)

INTRODUCTION: Patients with short clinical crowns, anterior diastemata, and posterior edentulism often require a multidisciplinary approach for optimal functional and esthetic outcomes. This case report outlines a fully digital prosthodontic rehabilitation process involving smile design, crown-lengthening surgery, increasing vertical dimension, implant-supported prostheses, and laminate veneers.

Case Description: A 44-year-old male patient presented with anterior diastemata, generalized tooth wear, and posterior tooth loss. A fully digital workflow was utilized throughout all prosthetic stages using an intraoral scanner (TRIOS 5, 3Shape, Copenhagen, Denmark), including smile design, impression taking and restorative planning. Crown-lengthening surgery was performed anterior maxilla, and a periodontal guide was digitally designed and fabricated using CAD software and 3D in the printed (Formlabs Inc., Somerville, MA, USA). Dental implants were placed in the posterior edentulous areas. After osseointegration, digital impressions were obtained using scan bodies, and implant-supported full-mouth prostheses were delivered to restore and increase the vertical dimension and reestablish proper occlusion. In the same session, lithium disilicate laminate veneers (IPS e.max, Ivoclar Vivadent) were manufactured and cemented to the anterior teeth to close diastemata and enhance esthetics, while zirconia-based restorations (Amann Girrbach, Austria) were used in the posterior regions for implant-supported prostheses.

Discussion: This case demonstrates the advantages of a fully digital workflow in comprehensive prosthodontic rehabilitation. From smile design and periodontal guide fabrication to prosthetic planning and final restorations, digital technologies contributed to clinical accuracy, efficiency, and patient satisfaction. Increasing vertical dimension was successfully achieved through implant-supported full-mouth rehabilitation, while minimally invasive laminate veneers restored anterior esthetics.

Keywords: Dijital workflow, Crown-lengthening, Implant-supported prosthesis, Laminate veneer

PP-102 Fully Digital Workflow in the Prosthetic Rehabilitation of Single Anterior Teeth: A Report of Three Cases

Melik Fatih Karagöz, Sinem Vural, Buket Evren

(Department of Prosthodontics, Marmara University, Istanbul, Turkey)

Introduction: Prosthetic rehabilitation of a single anterior tooth represents a significant clinical challenge for dental practitioners due to the high esthetic demands and the need for precise shade matching, contour, and alignment with adjacent teeth. Due to the developments in digital scanning technologies, clinicians can improve accuracy, efficiency and predictability in the management of anterior single-tooth restoration. The aim of this study is to demonstrate how a fully digital workflow -from digital impression to final restoration- can simplify and enhance this complex process.

Case Description: Three patients of varying ages are presented with different clinical indications requiring prosthetic rehabilitation of a single anterior tooth. All three cases were managed using a complete digital workflow. Initial digital impressions were obtained using an intraoral scanner, ensuring high accuracy and patient comfort. Each case included digital shade selection utilizing a calibrated shade-matching device.

The definitive restorations were designed using CAD software and fabricated from lithium disilicate blocks via CAM milling. No conventional impressions or physical models were used throughout the process. Final adjustments and characterizations (staining and glazing) were performed to achieve natural esthetics. Each crown was cemented with appropriate adhesive protocols.

Discussions: The fully digital workflow enabled a streamlined, precise and esthetically predictable process. The use of a digital scanner provided highly accurate digital impressions, while digital shade selection improved color matching reliability. Lithium disilicate crowns demonstrated excellent marginal fit, translucency and shade integration with the adjacent teeth.

The patients expressed high satisfaction with both functional and esthetic outcomes. The results of this case series report support the clinical viability of a fully digital workflow in managing single anterior restorations in the critical esthetic zone.

Keywords: Digital Dental Workflow, Single Tooth Restoration, Intraoral Scanners, Lithium Disilicate Ceramics, CAD-CAM

PP-103 Functional and Aesthetic Restoration in Advanced Periodontal Bone Loss: A Digital Workflow Approach

Büşra Bozdoğan[1], Pınar Yıldız[2], Esra Talay Çevlik[1], Veli Özgen Öztürk[3], Utkucan Budak[3]

([1]Aydın Adnan Menderes University, Faculty of Dentistry, Department of Prosthodontics, Aydın, Turkiye; [2]Nimet Bayraktar Oral and Dental Health Hospital, Kayseri, Turkiye; [3]Aydın Adnan Menderes University, Faculty of Dentistry, Department of Periodontology, Aydın, Turkiye)

INTRODUCTION: A 48-year-old female patient presented to our clinic with aesthetic and functional concerns. Clinical and radiographic evaluations revealed advanced alveolar bone resorption in the maxillary anterior region, accompanied by pathological migration of the teeth due to periodontal disease. Given the patient's high aesthetic expectations, a multidisciplinary treatment approach was planned following periodontal therapy.

Case Description: After completion of periodontal treatment, it was decided to proceed with zirconia-supported restorations to address both aesthetic and functional demands. All teeth were prepared with a chamfer finish line. Intraoral scanning was performed for digital impressions. In the mandibular posterior region, missing teeth were restored using non-hex Ti-base abutment-supported fixed partial dentures.

Discussion: Through the use of chamfer-prepared restorations, both aesthetic and functional rehabilitation were achieved in teeth affected by periodontal destruction. Additionally, the restorations contributed to the maintenance of periodontal health by ensuring proper contour and hygiene accessibility. This case highlights the importance of an interdisciplinary approach in managing patients with severe periodontal involvement and high aesthetic demands.

Keywords: Periodontal Diseases, Digital Dentistry, Zirconium, Interdisciplinary Communication

PP-104 Functional and Esthetic Outcomes of Full-Mouth Rehabilitation Following Vertical Dimension Reestablishment Using Posterior Composite Build-Ups: A Case Report

Zeynep Papatya, Edanur Güler, Dicle Karabulut, Umut Özdal

(Department of Prosthodontics, Faculty of Dentistry, Istanbul Health and Technology University, Istanbul, Turkey)

INTRODUCTION: Loss of vertical dimension of occlusion (VDO) is a clinical condition that can significantly impact both function and esthetics. It may lead to impaired mastication, temporomandibular joint (TMJ) discomfort, facial disharmony, and reduced quality of life. Restoring VDO requires a systematic approach involving proper evaluation, neuromuscular adaptation, and establishment of a stable occlusal and TMJ relationship. This case report presents the functional and esthetic outcomes of full-mouth rehabilitation following VDO reestablishment using posterior composite build-ups and a gradual increase in occlusal height to promote TMJ stabilization.

Case Description: A patient with reduced VDO was treated with posterior composite resin build-ups. The vertical dimension was increased by 1 mm per week over five weeks, allowing neuromuscular adaptation and TMJ repositioning.

After successful adaptation, definitive restorations were completed. Pressable ceramic (e.max) laminate veneers were placed from first premolar to first premolar (5–5) in both arches. Zirconia crowns were used on the first and second molars (6 and 7). Throughout the procedure, esthetic, functional, and occlusal parameters were carefully monitored to ensure optimal outcomes.

The patient adapted well to the new VDO, showing marked improvement in facial esthetics and occlusal function. High patient satisfaction was reported at the conclusion of treatment.

Discussion: This case highlights the effectiveness of a controlled, stepwise approach to VDO restoration. Using composite build-ups allowed reversible testing of neuromuscular tolerance before final restorations.

The combination of e.max veneers and zirconia crowns restored function and esthetics while preserving TMJ stability. No complications were observed during the one-month follow-up, supporting the short-term success of the approach. Long-term monitoring is essential to confirm the durability of results.

Keywords: Vertical dimension of occlusion (VDO), full-mouth rehabilitation, composite build-up, neuromuscular adaptation, TMJ stability, esthetic dentistry.

PP-106 Hybrid Impression Technique in a Limited Mouth Opening Maxillofacial Defect Case

Onur Okbaz, Orhun Ekren

(Department of Prosthodontics, Cukurova University, Adana, Turkey)

INTRODUCTION: This case report presents the prosthetic rehabilitation of a 42-year-old female patient with hemimaxillectomy and limited mouth opening, using a combined digital and conventional workflow.

Case Description: The patient was referred to the Department of Prosthodontics, Çukurova University, for rehabilitation following surgical resection of the right maxilla and left premaxilla due to squamous cell carcinoma. Clinical examination showed a large oral-antral defect and a restricted interincisal opening of 11 mm (Fig. 1). An intraoral scan was used to capture the remaining dentition and stable hard tissues, and a 3D model was printed based on the scan data (Fig. 2). A metal framework was fabricated on this model (Fig. 3). To register the defect area, an additional silicone impression was taken intraorally over the framework (Fig. 4).This impression was repositioned onto the printed 3D model with the framework in place, and new dental stone was poured to create a final cast combining both impressions—digital for hard tissues, conventional for the defect (Fig. 5). Based on this unified model, the obturator prosthesis was fabricated and clinically evaluated (Fig. 6). After necessary adjustments, it was delivered to the patient (Fig. 7).

Discussion: Conventional impressions can be difficult in patients with restricted access. Digital scans may also lack accuracy in capturing highly mobile soft tissues. This combined approach allowed precise integration of both techniques, resulting in a stable and functional prosthesis with good retention and patient comfort.

Keywords: Maxillofacial Prosthesis, Dental Impression Technique, Palatal Obturators, Computer-Aided Design

PP-107 Hybrid Prosthetic Design in All-on-six Implant Rehabilitation

Bedia Sert[1], Yaprak Aksöyek[1], Sibel Dikicier[2]

([1]Department of Prosthodontics, University of Health Sciences, Hamidiye Institute of Health Sciences, Istanbul, Turkey; [2]Department of Prosthodontics, Hamidiye Faculty of Dentistry,University of Health Sciences, Istanbul, Turkey)

INTRODUCTION: Implant supported prostheses have become predictable treatment for edentulous patients. However, screw access holes in the aesthetic zone present significant challenges for optimal esthetic outcomes. The Toronto bridge concept with cemented anterior segments offers a viable solution while maintaining advantages of implant supported rehabilitation. This case presentation aims to demonstrate the effectiveness of hybrid prosthetic design in resolving aesthetic challenges in al on six implant rehabilitation.

Case Description: A 58 year old male patient presented with complete edentulism requiring rehabilitation. Six implants were placed in both maxilla and mandible using standard protocols. In the maxilla, implant angulation resulted in screw access holes emerging through incisal edges of anterior teeth, compromising aesthetics. A hybrid design was implemented combining Toronto bridge concept with selective cementation. The maxillary prosthesis featured screw retention in posterior regions and cementation in anterior segments. The mandibular arch received conventional screw retention. Both prostheses incorporated cast metal frameworks veneered with porcelain. Prostheses were delivered following standard healing protocols.

Discussion: The hybrid approach successfully addressed aesthetic challenges posed by unfavorably positioned screw access holes while preserving clinical advantages. Contemporary literature demonstrates hybrid prostheses achieve excellent aesthetics and function compared to conventional prostheses. The cement-retained anterior segment eliminated visible screw access holes in the aesthetic zone, achieving optimal esthetic integration. The Toronto Bridge concept combines advantages of screw- and cement-retained prostheses through a screw-retained metal framework for cementation of suprastructures. Posterior screw retention maintained retrievability for maintenance procedures. Studies show all-on-six provides improved clinical outcomes with reduced stress distribution compared to all-on-four designs. At 12 month follow up, the patient demonstrated excellent functional outcomes with stable tissues and high satisfaction. This modified Toronto bridge design represents an effective solution where conventional screw-retained prostheses compromise aesthetic outcomes in the anterior maxilla.

Keywords: All-on-six, hybrid prosthesis, Toronto bridge, implant aesthetics, implant-supported prosthesis

PP-109 Immediate Implant Placement with Provisionalization Using the Natural Tooth in Vertical Root Fracture: A Case Report

Erhan Dilber[1], Yusuf Atalay[2], Yağmur Dilber[3]

([1]Department of Prosthodontics, Alanya Alaaddin Keykubat University, Antalya, Türkiye; [2]Ozel Vefa Special Clinic, Afyon, Türkiye; [3]Department of Medical Biochemistry, Akdeniz University, Antalya, Türkiye)

In cases where the crown remains intact, but a vertical root fracture is present, immediate implant placement with provisional loading of the natural tooth can be performed if clinical conditions permit. This approach offers critical advantages: rapid aesthetic restoration, preservation of gingival architecture, and psychological benefits for the patient. This case report describes the management of a maxillary left central incisor with a vertical root fracture requiring extraction. Treatment involved immediate implant placement, followed by provisionalization using the patient's natural tooth, and subsequent definitive prosthetic rehabilitation.

Keywords: Immediate loading, provisionalization with natural teeth, implant, emergency profile

PP-110 Immediate Loading of a Dental Implant Placed Concurrently with Bone Augmentation: Case Report

Olkan Gürbüz[1], irem asya kafadar[2], Mübin Sıtkı Ulusoy[1]

([1]Department of Prosthodontics,Ege University, School of Dentistry, Izmir, Turkey; [2]Department of Oral and Maxillofacial Surgery, Ege University, School of Dentistry,Izmir, Turkey)

INTRODUCTION: Dental implants in the anterior maxilla present unique challenges due to the thin bone and gingival biotype in this region, coupled with patients' high esthetic demands. Minimizing the period of edentulism is essential for patient satisfaction, which has led to the growing popularity of immediate loading protocols in the esthetic zone.

Case Description: A 37-year-old female patient presented two months after extraction of tooth #11, which had been removed because of an endo-periodontal infection. During healing, a temporary Maryland bridge was fabricated but proved uncomfortable for the patient. Under local anesthesia, a full-thickness mucoperiosteal flap was elevated to expose the bony defect. After thorough debridement, the osteotomy was prepared, and a dental implant was placed with an insertion torque of 50 N·cm, achieving primary stability. A 15° angled multi-unit abutment was seated and torqued to 15 N·cm. The peri-implant defect was grafted with allogeneic bone and covered by a collagen membrane stabilized with membrane pins. A prefabricated temporary coping was adapted to a PEEK abutment intraorally, cemented extraorally with self-adhesive resin cement, and secured to the multi-unit abutment. The screw access channel was sealed with PTFE tape and composite resin, and occlusal contacts were relieved to protect the provisional restoration from lateral forces. The patient received oral hygiene instructions and was scheduled for monthly follow-up visits. Definitive prosthetic restoration is planned for six months post-operatively.

Discussion: Clinical studies indicate that immediately loaded implants in the maxillary esthetic zone demonstrate survival rates around 95 %. In one prospective study of 30 patients with single anterior maxillary implants, immediate loading resulted in a 93 % esthetic satisfaction rate at one year. These outcomes underscore that, with careful case selection and meticulous surgical and prosthetic protocols, immediate loading combined with simultaneous bone augmentation can yield predictable functional and esthetic results.

Keywords: immediate loading, bone augmentation, anterior maxilla, dental implant, case report.

PP-111 Immediate Loading with Digital Impression and CAD/CAM PMMA Restoration in the Anterior Maxilla: A Clinical Case Report

Tuğba Kaya, Bora Akat, Semih Karataş

(Department of Prosthodontics, Ankara Unıversty, Ankara, Turkey)

INTRODUCTION: Using digital workflows in implant-supported fixed prostheses is gaining increasing importance due to reduced treatment times, improved patient comfort, and enhanced clinical success. This case report presents the step-by-step procedure of immediate loading using a digitally designed screw-retained provisional restoration, fabricated via CAD/CAM technology, delivered the day after implant placement in anterior maxilla. The aim is evaluating the integration of digital impression and manufacturing techniques into clinical

practice and demonstrating the efficacy of immediate loading protocols when primary stability is achieved.

Case Description: A 42-year-old systemically healthy male patient presented to our clinic with missing teeth in the anterior maxilla, requesting an implant-supported fixed prosthesis. Intraoral and radiographic evaluations (panoramic radiograph and computed tomography) were performed. The maxillary central and lateral incisors were extracted. Three implants (İ-linq), each diameter of 4 mm and length of 12 mm, were immediately placed in teeth 12, 21, and 22. All implants achieved an insertion torque above 40 Ncm, confirming primary stability. After surgery, immediately digitally impression was taken using the TRIOS-5 intraoral scanner (3Shape). Based on the obtained digital data, a screw-retained provisional restoration was designed and milled from a PMMA block using CAD/CAM technology. The temporary prosthesis, including 6 teeth, was delivered the next day to enhance esthetic outcome in a patient with 4 missing anterior teeth and a wide diastema. No biomechanical complications were observed during the follow-up period.

Discussion: This case demonstrates that immediate loading with a fully digital workflow provides a reliable and predictable treatment option in edentulist anterior maxillary.Digital impression and CAD/CAM provisional fabrication save clinical time and provide a comfortable, esthetic temporary solution. The digital workflow also allows visualization and assessment of tooth design before fabrication. When primary stability is achieved, immediate loading with digital protocols proves to be an effective clinical approach.

Keywords: Digital Workflow, Immediate Loading, Edentulism

PP-112 Impact of removable partial dentures on the oral health-related quality of life of older adults

Manushaqe Selmani Bukleta

(Privat Clinic, Mdent Family Dentistry, Rr.Eqrem Qabej 74, 10000, Pristina, Kosovo)

INTRODUCTION: Patient satisfaction with removable partial denture (RPD) treatment is an increasingly important criterion in prosthodontic treatment. This study aimed to determine the effect of metal base removable partial dentures (MRPDs) and acrylic base removable partial dentures (ARPDs) on oral health-related quality of life. METHODS: The study was conducted on 40 patients. Twenty received ARPDs (nine in the maxilla and eleven in the mandible), and twenty received MRPDs (nine in the maxilla and eleven in the mandible). The patients were 45–65 years old. The impact of RPDs on the patient's quality of life was analysed with the Oral Health Impact Profile (OHIP-ALB14) questionnaire. The differences in OHIP-14 between the two dentures at three different time points were estimated. All statistical analyses were performed using SPSS software, version 22 (IBM), and a p-value<0.05 was considered statistically significant.

RESULTS: The OHIP-ALB14 score for both denture types was high at T1 and then remarkably decreased at T2 ($p<0.05$) and T3 ($p<0.05$), with no significant differences between MRPDs and ARPDs users. For ARPD users, the satisfaction level significantly increased (<0.001) after one year for the dimensions of Physical Pain, Functional limitation, and Psychological Discomfort. Whereas, for MRPD users, satisfaction level significantly increased (<0.001) in the dimensions of Functional limitation, Psychological Discomfort, and Psychological Disability after a year of denture use.

CONCLUSION: In the aspects of Functional limitation, Psychological Discomfort, and Physical Pain, the satisfaction levels of both ARPD and MRPD patients improved over time, giving credit to the duration of time to let patients acknowledge the use of RPD in their daily lives. The clinical implication of this conclusion is that RPD wearers must be allowed time to adjust to the complicated process of being accustomed to a removable denture.

Keywords: Removable partial dentures, Oral health impact profile, Oral health-related quality of life, Patient satisfaction, Quality of life

PP-113 Implant Failure Associated with Disregard of Biomechanical Principle in the Region of an Impacted Tooth Undergoing Coronectomy: A Case Report

fulya karaduman, Funda Bayındır

(Department of Prosthodontics, Faculty of Dentistry, Atatürk University, Erzurum, Türkiye)

INTRODUCTION: Impacted maxillary canines are frequently encountered and can cause to significant esthetic, functional, and periodontal complications in the anterior maxilla. Coronectomy is a conservative surgical technique aimed at preventing trauma to adjacent tissues during the removal of impacted teeth. In addition, in the anterior region where it is highly esthetic demanded area, adherence to biomechanical principles in both surgical and prosthetic planning is critical to treatment success. This case report presents a failed implant

following coronectomy of impacted maxillary canine due to biomechanical factors.

Case Presentation: A 55-year-old male patient with no systemic disease presented with an impacted tooth 13, radiographically shown in close proximity to the roots of teeth 14 and 15. A coronectomy was performed to avoid injury to the adjacent roots, and the defect was filled with Gen-Os bone graft. Seven months later, due to inadequate bone volume, a 4 mm diameter, 8.5 mm length implant (OSSTEM TSIII SA Fixture) was placed, positioned 6 mm apical to the cemento-enamel junction of adjacent teeth. The prosthetic restoration featured a 12 mm crown height, which resulted in compromised biomechanical load distribution. The patient reported mobility in the implant one year after delivery but did not seek clinical evaluation until five years later. Clinical examination revealed suppuration, horizontal mobility, and absence of attached gingiva. The implant was surgically removed under general anesthesia, and an iliac bone graft was placed. A lateral pedicle flap was used to achieve soft tissue closure. A vestibuloplasty was planned after bone healing. In the meantime, a temporary polyamide prosthesis was supplied to meet the patient's esthetic requirements.

Discussion: This case highlights the importance of not only evaluating bone quantity but also ensuring biomechanical compatibility during implant planning. Successful long-term outcome results depends on comprehensive surgical and prosthetic planning in accordance with biomechanical principles.

Keywords: Coronectomy, Dental implant failure, Impacted maxillary canine, Biomechanical complications.

PP-114 Implant supported bar retained overdenture prosthesis in edentulous mandible: case report

Orhun Türkyilmaz[1], Faik Tugut[1], ilker ozec[2], Fatma Canan Güven[1]

([1]Protetik Diş Tedavisi Anabilim Dalı, Sivas Cumhuriyet Üniversitesi Diş Hekimliği Fakültesi, Sivas, Türkiye; [2]Ağız Diş ve Çene Cerrahisi Anabilim Dalı, Sivas Cumhuriyet Üniversitesi Diş Hekimliği Fakültesi, Sivas, Türkiye)

INTRODUCTION: The use of complete dentures becomes increasingly challenging over time due to significant alveolar bone resorption, which leads to a reduction in retention and stability. To enhance insufficient retention and stabilization, fixed or removable prostheses supported by dental implants can be fabricated for patients This case report aims to present the prosthetic rehabilitation of a completely edentulous mandible using three implants and a bar-retained overdenture.

CASE: A 63-year-old female patient presented to our clinic with complaints of mobility in the anterior mandibular teeth and instability of her existing denture. Intraoral examination and radiographic evaluations indicated the need for extraction of all remaining mandibular teeth, followed by the placement of implants in the anterior region and fabrication of a bar-retained removable prosthesis. After the treatment planning, the teeth were extracted, and implants were placed in the regions corresponding to teeth 33, 31, and 43. A healing period was allowed for osseointegration Subsequently, appropriate multi-unit abutments were selected and secured intraorally. An individualized acrylic impression tray was fabricated over the abutments, followed by an open-tray impression. The resulting master model was scanned in the laboratory, and a bar structure with ball attachments was designed. After the bar and ball attachment framework were fabricated using the laser sintering technique, a try-in was performed intraorally." A skeletal framework was fabricated on the bar structure, trial-fitted in the mouth, and tooth arrangement was completed. After occlusal and esthetic verification, the prosthesis was finalized. The occlusal adjustments of the prosthesis were made, the patient was informed and the prosthesis was delivered.

CONCLUSION: Based on follow-up examinations and patient feedback, the fabrication of a bar-retained removable prosthesis supported by implants in completely edentulous cases with resorbed posterior ridges provides a successful treatment option that meets patients' functional and esthetic expectations.

Keywords: Overdenture, Dental implant, Attachment system, Mandible

PP-115 Implant Supported Prosthetic Rehabilitation of Maxilla and Mandible Following Oral Squamous Cell Carcinoma Surgery: Case Report

Özgül Alver, Ayşegül Kurt

(Department of Prosthodontics, Trakya University, Edirne, Turkey)

Oral squamous cell carcinoma (OSCC) frequently requires extensive surgical resection, leading to significant loss of both hard and soft tissues. These defects can negatively affect aesthetics, speech, and mastication. Prosthetic rehabilitation plays a critical role in restoring function and improving the patient's quality of life. This case report presents the prosthetic treatment of a maxillary defect in a patient with a history of OSCC. A 73-year-old male patient had undergone tumor resection in the left posterior maxilla six years prior due to OSCC. The surgery resulted in a large defect and complete loss of

attached gingiva in the region. The patient had previously used a conventional maxillary complete denture, but reported dissatisfaction due to poor retention, compromised aesthetics, impaired speech, and chewing difficulties. The treatment plan included placement of four implants in the maxilla and two in the mandible. An implant-supported overdenture with a bar attachment was planned for the maxilla, and a locator-retained overdenture was planned for the mandible. Appropriate multi-unit abutments were placed in the maxilla, and open-tray impressions were taken. In the mandible, impressions were obtained using a custom tray and zinc-oxide eugenol paste. After try-in of the CAD/CAM-manufactured titanium Dolder bar and metal framework, the vertical dimension was determined, and the final prostheses were delivered. The patient reported high satisfaction following treatment, with successful restoration of aesthetics, speech, and masticatory function. Despite the absence of attached gingiva, the bar-retained design provided excellent retention and ease of hygiene, contributing to long-term implant success. The locator-retained mandibular overdenture offered sufficient support and chewing efficiency. This case highlights that complex maxillofacial defects secondary to OSCC can be successfully rehabilitated through careful planning and precise prosthetic intervention.

Keywords: Oral squamous cell carcinoma, Maxillary defect, Bar retained overdenture, Implant rehabilitation

PP-116 Implant Surgery with Surgical Guide and Immediate Loading in the Maxillary Anterior Region: Case Reports

Gizem Çapa, Kubilay Barutcigil

(Department of Prosthodontics, Akdeniz University, Antalya, Turkey)

INTRODUCTION: The maxillary anterior region is of great importance both aesthetically and functionally, and presents challenges in terms of surgical and prosthetic procedures. In this area, the treatment of tooth loss has become more predictable with the use of implant placement supported by digital planning and surgical guides. Immediate loading protocols offer significant advantages in meeting patients' aesthetic expectations. This report presents two clinical cases involving guided implant placement and immediate provisional restoration in the maxillary anterior region.

Case Description: Case 1

The patient had lost teeth numbered 12, 11, 21, and 22. Based on clinical and radiographic evaluations, two implants were planned for the 12 and 22 regions. Alveolar bone volume was assessed using CBCT, and digital planning was performed. Implants were placed using a surgical guide. Primary stability was achieved at 45 Ncm, and provisional crowns were placed immediately during the same session.

Case 2

Following the extraction of tooth 21, the patient who had lost teeth numbered 11, 21, 22, 23, and 24, was planned to receive three implants in the regions of 12, 22, and 14. A surgical guide was designed by combining intraoral scan and CBCT data. During implant placement, primary stability of 40 Ncm was achieved. Provisional crowns were delivered immediately in the same session.

Discussion: Implant placement in the maxillary anterior region requires meticulous planning due to both aesthetic demands and biological challenges. The use of surgical guides enhances the accuracy of implant positioning and reduces the risk of complications. In cases where primary stability is achieved, the immediate loading protocol is an effective approach to meet patients' aesthetic expectations.

Keywords: immediate, surgial guide, implant

PP-117 Implant-supported bar overdenture in a mandibula with resorption and soft tissue hyperplasia:case report

İrem Al, Ilkay Baltacı, Giray Bolayır

(Department of Prosthetic Dentistry,Sivas Cumhuriyet University,Sivas,Turkey)

Introduction: In completely edentulous patients, alveolar bone resorption leads to decreased stability of total dentures and difficulty in using dentures. Implant-supported overdenture prostheses can be used to increase stability. In this case presentation, the treatment of a completely edentulous patient with an implant-supported bar-retained removable prosthesis is presented.

Case Description: A 64-year-old female patient presented to our clinic complaining of complete edentulism. Radiographic and intraoral examination revealed severe resorption of the upper and lower alveolar ridges and hyperplastic soft tissue growth on the floor of the mouth. Taking into account the patient's expectations from treatment, an implant-supported bar-retained overdenture prosthesis was planned for the

lower jaw, and a traditional total prosthesis for the upper jaw. The hyperplastic tissue on the patient's oral floor was surgically excised, but due to anatomical limitations, it was not possible to remove it completely. After healing, two implants were placed in the mandibular interforaminal region. After osseointegration, multi-unit abutments were placed on the implants, and impressions were taken using the open tray impression technique. The designed dolder bar was tried in, and the produced skeleton and traditional tooth arrangement stages were tried in. A traditional acrylic-based total prosthesis was produced for the upper jaw. The bar was fixed to the lower jaw, and the final occlusal adjustments were made to the prostheses. The patient was informed about the use of the prostheses, and the prostheses were delivered.

Discussion: This case demonstrates that bar-supported overdenture prostheses significantly improve stability, retention, and patient satisfaction in situations where traditional total prostheses are insufficient. In line with clinical studies showing that two implants provide sufficient stability, a bar-supported overdenture prosthesis design with two implants was created for the patient's lower jaw. The patient was called in for follow-up visits at regular intervals, and no problems were observed.

Keywords: Dental Implants, Mandibular Resorption, Implant-Supported Prosthesis, Overdentures, Soft Tissue Hyperplasia

PP-118 Implant-Supported Bar Overdentures Fabricated onto the Titanium Base Abutments: A Case Series

Vafa Azizalizada, Aslıhan Öztürk, Mustafa Barış Güncü

(Departmant of Prosthodontics, Hacettepe University, Ankara, Turkey)

INTRODUCTION: In edentulous patients with severe ridge resorption, implant-supported overdentures offer enhanced stability, retention, and comfort compared to conventional dentures. Bar-retained overdentures provide implant splinting and improved load distribution, contributing to long-term success. The integration of digital technologies, such as CAD/CAM, allows for the fabrication of precise, passive-fitting bars with reduced laboratory time compared to conventional casting. In this case report, a one-year clinical follow-up of a bar-retained overdentures, which was cemented onto Ti-base abutments and directly screwed to the implants, is presented.

Case Description: In these case series, three implants were placed in the mandibular interforaminal region in all patients. After osseointegration, a functional impression was made using the splinted open-tray technique and the master cast was scanned using a lab scanner and STL data was imported to CAD design software. Bar was designed onto the non-engaged ti-base abutments and milled from titanium block. APC protocol was used for cementation of bar onto the ti-base abutments. An overdenture prosthesis with a metal framework was fabricated after try-in appointments. Clinical and technical results were recorded.

Discussion: All patients were satisfied with the overdentures. During the one-year follow-up period, no screw loosening or decementation was observed. Peri-implant mucositis was observed around one implant, and the patient was advised and encouraged to improve oral hygiene. In cases where implant angulation allows the use of non-engaged Ti-base abutments, directly screw-retained bars at the implant level may be considered as an alternative to bars on multi-unit abutments. Easy laboratory procedures and no need for a secondary prosthetic occlusal screw are the main advantages of this approach. Long-term follow-up studies are necessary.

Keywords: Dental Prosthesis, Dental Implants, Computer-Aided Design

PP-119 Implant-Supported Bar-Retained Prosthesis Application After Tongue and Mandibular Resection

Sercan Aydoğan, Ömer Kırmalı, Mümine Bozan

(Department of Prosthodontics, Akdeniz University, Antalya, Turkey)

INTRODUCTION: This study aims to present the clinical procedures in the design and application of an implant-supported bar-retained prosthesis in a patient who went through tongue and mandibular resection due to tongue cancer.

Case Description: A 47-year-old male patient who underwent total glossectomy and mandibular resection due to tongue cancer consulted to our clinic for prosthetic rehabilitation and implant planning for the mandible. Four dental implants were placed in the lower jaw. After a three-month osseointegration period, the patient was redirected to our department for prosthesis treatment.

Patient had limited mouth opening, for this reason impression was taken using an intraoral digital scanner; however, the existing limitation prevented adequate scanning. Due to the angular differences of the implants and limited mouth opening conventional bar design was not possible. Therefore the bar

was cast in two main parts. Afterwards, a temporary prosthesis rehearsal was performed using PMMA material. At the final stage, the superstructure was completed with a monolithic zirconia restoration over the bar, successfully concluding the patient's treatment.

Discussion: Although implant placement angles in patients who have undergone complex surgical interventions pose challenges for prosthetic planning, functional and aesthetic outcomes can be achieved through proper bar design and accurate laboratory protocols. This case demonstrates the success of implant-supported bar-retained monolithic zircona prosthesis application under challenging anatomical conditions.

Keywords: Tongue cancer, mandibular resection, implant, bar prosthesis, monolithic zirconia restoration

PP-120 Implant-Supported Fixed Prosthesis for Maxillary Anterior Tooth Loss Following Orthodontic Treatment

Nafia Ebru Polat Aydoğdu, Rüştü Ersoy Sakarya

(Department Of Prosthodontics,Faculty Of Dentistry, University Of Atatürk, Erzurum, Turkey)

INTRODUCTION: In patients who have undergone orthodontic treatment, complications such as bone loss and tooth mobility can occur. These issues may lead to functional loss and aesthetic concerns, necessitating prosthetic rehabilitation. Following orthodontic treatment, tooth extractions due to bone loss and mobility can be restored with implants to achieve functional and aesthetic outcomes.

CASE DESCRİPTİON: A 29-year-old female patient presented to our clinic with significant bone loss and mobility in her upper incisors, which were a result of previous orthodontic treatment. Due to these issues, extraction of the upper incisors was necessary. Immediately after extraction, implants were placed in the lateral incisor positions. A removable temporary prosthesis was provided to maintain function and aesthetics during the healing phase. The patient used the provisional prosthesis for approximately four months until osseointegration was achieved. Once osseointegration was complete, the definitive prosthetic restoration was performed using implant-supported zirconia-based porcelain crowns.

Discussion: Bone loss and tooth mobility following orthodontic treatment may require early prosthetic intervention. In this case, implant placement immediately after extraction effectively addressed the aesthetic and functional needs of the patient. The use of a temporary prosthesis ensured comfort and functionality during the healing phase, while the final restoration with zirconia-supported porcelain crowns provided a durable and aesthetically pleasing result. A multidisciplinary approach and careful treatment planning played a critical role in achieving successful outcomes in this case.

Keywords: Orthodontic Appliances, Dental Implants, Prosthodontics

PP-121 Implant-Supported Fixed Prosthetic Rehabilitation in Cases with Anterior Alveolar Bone Loss: A Report of Two Cases

Esin Özel, Esra Kul

(Department of Prosthodontics, Faculty Of Dentistry, Atatürk University, Erzurum, Turkey)

INTRODUCTION: Anterior tooth loss, especially when associated with alveolar bone resorption, presents considerable challenges in both aesthetic and functional rehabilitation. Implant placement in the anterior maxilla requires precise treatment planning due to anatomical limitations and high patient expectations. In cases with ridge defects, prosthetic modifications such as restoring adjacent teeth may be necessary to achieve optimal results.

CASE REPORTS: Case 1: A 48-year-old systemically healthy male presented with aesthetic dissatisfaction concerning implants placed in regions 11 and 21 after extractions five years prior. Although peri-implant bone levels were stable, moderate alveolar ridge resorption was evident. To enhance aesthetic integration, full crowns were planned for adjacent teeth 12 and 22. Diagnostic impressions and mock-up evaluations were performed, followed by tooth preparations and temporary prothesis. Zirconia-based porcelain restorations were fabricated after preparation and impression procedures.Final implant- and tooth-supported prostheses were delivered after framework try-in. At the 6-month follow-up, no complications were reported. Case 2: A 27-year-old healthy male, who had received implants in regions 11 and 21 after trauma-related tooth loss, presented with aesthetic concerns. Clinical evaluation revealed excessive gingival display of teeth 12 and 22 and significant anterior ridge resorption. Full crowns were planned for these teeth to optimize soft tissue contours. Zirconia-based porcelain restorations were fabricated after preparation and impression procedures. Definitive prostheses were successfully placed following occlusal adjustments.

DISCUSSION: These cases highlight the importance of comprehensive prosthetic planning in managing anterior implant restorations, particularly when alveolar bone loss is present. Restoration of adjacent teeth with full crowns allowed

for improved pink-white aesthetic balance. Zirconia ceramics offered favorable outcomes in terms of biocompatibility and translucency. Both patients achieved satisfactory functional and aesthetic results, maintained through routine follow-up.

Keywords: Dental Implant, Alveolar Bone Loss, Dental Prosthesis

PP-122 Implant-Supported Full-Arch Prosthetic Rehabilitation Following Mandibular Resection in a Squamous Cell Carcinoma Patient

Aslı Gökçe, Caglar Bilmenoglu

(Department of Prosthodontics, Trakya University, Edirne, Turkey)

Squamous cell carcinoma (SCC) is one of the most common malignant neoplasms affecting the oral cavity and often requires extensive surgical interventions, including mandibular resection. Such procedures can result in significant impairments in mastication, speech, and facial esthetics. The prosthetic rehabilitation of these patients presents both surgical and prosthodontic challenges due to the complexity of anatomical defects and functional limitations. This case report describes a full-arch implant-supported prosthetic rehabilitation in a patient who underwent resection of the mandibular symphysis region due to oral SCC.

The patient had previously undergone mandibular symphysis resection. Three reconstruction plates were placed, and a skin graft was applied by the plastic surgery team. Six months later, six implants were inserted in the mandible, followed by a three-month healing period. At the prosthodontic evaluation, the patient demonstrated insufficient vertical dimension and lip incompetence. A fixed full-arch prosthesis supported by multi-unit abutments was planned. An open-tray impression was made using polyether, and the framework was tried in two stages due to a misfit in the region of tooth 43. After sectioning and soldering, a passive fit was achieved. Occlusal adjustments were completed during the dentin try-in, and after final glazing, the prosthesis was torqued and delivered. The patient was referred back to plastic surgery for further evaluation of lip function.

Mandibular defects following oncologic resection often impair both function and appearance. Fixed implant-supported prostheses can effectively restore vertical dimension, occlusion, and esthetics in such cases. A multidisciplinary approach is essential, and the use of multi-unit abutments facilitates maintenance and prosthetic adaptation. This case illustrates how detailed planning and collaboration can improve quality of life in patients with complex maxillofacial defects.

Keywords: Mandibular Resection, Squamous Cell Carcinoma, Full-Arch Rehabilitation

PP-123 Implant-supported full-arch rehabilitation with hybrid acrylic: a case report with 1-year follow-up

Selcan Göçmel Bakırhan, Bora Akat

(Department of Prosthodontics, Ankara University, Ankara, Turkey)

INTRODUCTION: Implant-supported fixed prostheses are an effective and long-lasting treatment option for restoring function and aesthetics in completely edentulous patients. In such cases, the condition of the remaining teeth, bone volume, implant positioning, and long-term maintenance play a critical role in overall treatment success. This case report presents the one-year clinical follow-up of a patient with limited bone loss and residual teeth, in whom tooth extraction and implant placement were performed in the same session.

CASE REPORT: A 57-year-old female patient with no systemic diseases presented to the Faculty of Dentistry at Ankara University with complaints of aesthetic and functional deficiencies. Intraoral examination revealed that several residual teeth were periodontally compromised. Following tooth extractions, five implants were placed in the maxilla and six in the mandible during the same surgical session. After the healing and osseointegration phases were completed, bar-supported, acrylic-based hybrid fixed prostheses were fabricated and delivered for both arches. The patient was recalled for regular follow-up appointments every six months for a total period of one year. During these visits, the prostheses were removed to evaluate food accumulation, peri-implant soft tissue health, and oral hygiene status.

CONCLUSION: The patient reported a high level of satisfaction in terms of both function and aesthetics. No biological or mechanical complications were observed during the one-year follow-up period. This case demonstrates that in patients with limited bone loss, immediate implant placement following tooth extraction, combined with proper surgical-prosthetic planning and regular maintenance, can lead to clinically successful and satisfactory outcomes.

Keywords: acrylic, full arch, hybrid prostheses, implant

PP-124 Implant-Supported Obturator Prosthesis for a Maxillary Defect Following Tumor Resection: Case Report

Hibanur Dağlı, Nurullah Türker

(Department of Prosthodontics, Akdeniz Üniversitesi, Antalya, Turkey)

INTRODUCTION: Maxillary defects following tumor resections can negatively affect essential functions such as mastication, speech, and esthetics. In complex maxillary defect cases, implant-supported obturator prostheses represent a successful treatment approach by addressing both esthetic and functional needs. In this case report, maxillary rehabilitation with a prosthesis supported by natural teeth and implants is discussed.

Case Description: A 53-year-old male patient was admitted to the Department of Prosthodontics, Faculty of Dentistry, Akdeniz University for rehabilitation of a maxillary defect following resection of a benign tumor. The only remaining teeth in the upper jaw were teeth #13 to #17; all other maxillary teeth had been extracted during the surgical procedure. Clinical and radiographic evaluations revealed sufficient bone volume in the posterior left maxilla, allowing the placement of two dental implants in that region. The existing natural teeth in the mouth were restored with veneer ceramic crowns to provide support for the prosthesis and to improve aesthetics. Locator abutments were selected on the implants to enhance the retention of the prosthesis. The definitive obturator prosthesis was planned to be supported by natural teeth and retained with locator abutments and delivered to the patient.

Discussion: This case demonstrates the successful use of a hybrid support system—comprising both remaining teeth and implants—in the rehabilitation of a post-resection maxillary defect. Implant-assisted obturator prostheses can provide improved retention, stability, and patient satisfaction in cases with limited anatomical support. Proper planning and prosthetic design are essential to achieve optimal outcomes in such complex rehabilitations.

Keywords: Maxillary defect,,Bening tümör, Obturator prosthesis, Implant-supported prosthesis, Locator abutment

PP-125 ımplant-supported restoratıon of the rıght maxılla

Irem Özkul

(Gazi University)

Introductıon: Dental implants are a widely accepted treatment option for the rehabilitation of tooth loss, providing both functional and aesthetic benefits. The aim of this case report is to present the successful rehabilitation of a partially edentulous patient with implant-supported prostheses in the right maxilla, based on clinical and radiological evaluations using monolithic zirconia restorations.

Case Descrıptıon: A patient presenting with missing teeth was referred to our clinic and underwent surgical placement of four immediate implants in the maxillary region. Following comprehensive prosthetic and radiological assessment, a treatment plan was formulated. Considering the patient's aesthetic concerns, monolithic zirconia was selected as the restorative material.

A single-piece implant-supported restoration was planned, and a crown was also indicated for tooth number 21, which had a post-core system. Due to the angular discrepancies between the implants, multi-unit abutments were selected to ensure parallelism and proper emergence profile, and the patient was referred to the surgical department for soft tissue contouring.

After the healing phase, impressions were taken and a digital prototype was fabricated for the initial trial. The final restoration was subsequently prepared and delivered with temporary cementation.

Dıscussıon: In this case, angular differences between implants were effectively managed using multi-unit abutments, allowing for proper prosthetic alignment and improved fit. Although the vertical dimension in the maxilla was greater than average, the conditions were not suitable for a hybrid prosthesis. Instead, a monolithic zirconia restoration was chosen to provide adequate aesthetics and durability.

Since the restoration involved the anterior maxillary region, the high aesthetic performance of zirconia made it the ideal material. The final outcome successfully addressed both functional and aesthetic needs, resulting in high patient satisfaction.

Keywords: Dental implants, Tooth Loss, Implant-Supported Prostheses, Maxilla, Zirconium

PP-126 Improve the Mechanical And Physical Properties Of Hybrid (Poly Ether Etherketon) Reinforced With Carbon Fibers And Glass Fibers

Reem Nsaif[1], Funda Bayndir[2]

([1]Department of Prosthodontics, Al Esraa University, Baghdad, Iraq; [2]Department of Prosthodontics, Ataturk University, Erzurum, Turkey)

PURPOSE: Polyether ether ketone material is considered as an important thermoplastic material due to its properties.. The purpose of this study is to improve some mechanical and physical properties of dental (polyether ether ketone) PEEK. Two types of fibers reinforced material were used; carbon fibers and glass fibers. Different mechanical properties will be measured at different time intervals.

MATERIALS-METHODS: 160 samples were produced. 4 groups of different PEEK materials were used; extrusion PEEK, compression PEEK, carbon fibers PEEK and glass fibers PEEK (PPE, PPC, CFP and GFP). All specimens were tested in dry storage and then retested after incubation in Ringer's solution for 1 day, 1 week and 3 weeks at 37°C. Compression, Bending, tensile, and Vickers Hardness tests were applied.. Optical microscope and FESEM used to investigate the fracture morphology of samples at different test time intervals. ANOVA and post-hoc tests were used for statistical analysis.

RESULTS: compression, tensile, bending and hardness tests; PEEK (CFP and GFP) reinforced with carbon and glass fibers, compared to all other PEEK groups showed higher strength values. Incubation with Ringer's solution at different time intervals affected the one-week and three-week incubation time values for all PEEK sample types. Optical microscope and FESEM examinations showed; Tension and rupture frequency were significantly higher in the reinforcement fibers group (CFP and GFP) than in the other groups No significant difference between the reinforcement fiber groups (CFP and GFP) in terms of fracture and bending patterns.

CONCLUSION: our findings revealed that each PEEK type has its specific meachanical behavior related to each test applied. In the absence of reinforcement fibers, the mechanical test values were observed as pure PEEK material properties. The use of reinforced fiber peek has shown greater stress-strain value and increased the rigidity to a higher level.

Keywords: PEEK, Carbon fibers, Glass fibers, Mechanical properties, PEEK storage

PP-127 Improved patient comfort in maxillofacial prosthetics through digital impression

Melike Nisa Berkiten, Onur Etoz

(Department of Prosthodontics, Mersin University, Mersin, Turkey)

INTRODUCTION: Maxillofacial defects may arise due to congenital anomalies, acquired conditions, or developmental disturbances. Following surgical reconstruction, these defects are typically managed through prosthetic rehabilitation. Conventional treatment modalities in this field often involve extended and multi-stage procedures that are technically sensitive, complex in application, and may impose physical and psychological strain on the patient. With the ongoing advancements in digital technologies, their integration into the field of maxillofacial prosthetics has become increasingly prevalent. Innovations in intraoral scanning and additive manufacturing systems have enabled the acquisition of highly precise and reproducible impressions, particularly beneficial for maxillary defects. Compared to conventional techniques, digital workflows offer advantages such as reduced clinical time, enhanced dimensional fidelity, and improved patient comfort and satisfaction.

Case Report: A 69-year-old male patient who had undergone surgical resection of the hard palate due to squamous cell carcinoma (SCC) was diagnosed with a maxillary defect classified as vertical component Class 2 and horizontal component Class B, according to the Brown classification system. Intraoral scanning of both the maxillary and mandibular arches—including the defect area—was performed using a Trios 5 (3Shape) scanner. The obtained digital models were fabricated using a 3D printing (Formlabs 4B) device. Based on the digitally acquired data, conventional tooth arrangement and final prosthesis fabrication were completed. During the delivery session, a soft relining material was applied to enhance the prosthesis's adaptation. The prosthesis successfully addressed the patient's esthetic, nutritional, phonetic, and functional requirements.

Discussion: Conventional techniques in maxillofacial prosthetics are time-consuming and technique-sensitive, often requiring multiple sessions. Digital workflows, including intraoral scanning and 3D printing, offer faster, more accurate, and patient-friendly alternatives. Although initial costs and training requirements are higher, digital methods enhance comfort and efficiency. A hybrid approach combining both techniques may provide optimal outcomes depending on clinical context and resources.

Keywords: Maxillofacial prostheses, Digital workflow, Facial defects, Intraoral scanner, Obturator

PP-128 In vitro evaluation of effects of mouthwashes on colour stability of hybrid ceramic materials

Betül Balkancı Satılmaz[1], Buket Evren[1], Bahar Burçin Bol Yiğit[2]

([1]Department of Prosthodontics, Marmara University, Istanbul, Turkey; [2]Private Practice, Istanbul, Turkey)

OBJECTIVES: The aim of this study is to evaluate the time-dependent color stability of two different hybrid ceramics and two different lithium disilicate CAD/CAM materials after exposure to various mouthwash solutions.

MATERIALS-METHODS: A total of 160 disc-shaped samples (2 mm thick) were prepared in A1 shade from four CAD/CAM ceramic groups: IPS Emax CAD, GC Initial LiSi Block, Vita Enamic and Cerasmart. Initial color measurements were made using the Vita EasyShade V spectrophotometer. Samples were then subjected to thermal cycling equivalent to 2 years of clinical aging and immersed in four different solutions (Listerine, Klorhex, Batticon and distilled water) in an incubator for 24 hours. After incubation, the final color values were measured using the same device.

RESULTS: Both materials and solutions significantly affected the ΔE_{00} values, but the effect of the materials was more pronounced (η^2 = 0.973). Cerasmart (1.41±0.32) and Vita Enamic (1.43±0.33) exhibited significantly higher color change compared to IPS Emax CAD (1.10±0.19) and GC LiSi Block (1.10±0.19). Differences among solutions were also significant ($p < 0.001$), though their overall impact on color change was lower than that of the materials (η^2 = 0.989). No significant difference was observed between Klorhex (1.35±0.23) and Listerine (1.33±0.21), while Batticon caused significantly more discoloration (1.51±0.19).

CONCLUSIONS: After thermal aging and exposure to various mouthwashes, all four CAD/CAM ceramic materials showed color changes within clinically acceptable limits. However, hybrid ceramics were more susceptible to discoloration than lithium disilicate-containing ceramics.

Keywords: Lithium disilicate, Resin nanoceramic, Mouthwash, Color stability

PP-129 Inter- and Intraobserver Reproducibility of Linear Mucosal Changes Around Implant-Supported Crowns in the Aesthetic Zone: A Comparison of Intraoral Optical Scans and Intraoral Photography

Vincent J. J. Donker[1], Raoul Meijer[2]

([1]Department of Oral and Maxillofacial Surgery & Prosthetics, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands; [2]Dental School, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands)

INTRODUCTION: Changes in the mucosa surrounding implants have a significant impact on the aesthetic outcome. Currently, intraoral photographs are primarily being used to measure these changes. However, intraoral optical scanning is becoming more commonplace as a measurement technique. It is not yet clear if this method is suitable.

OBJECTIVE: To compare the reproducibility and mean values of measurements obtained through intraoral optical scanning compared with those derived from intraoral photographs. The findings of this study aim to provide a recommendation on the most suitable method for future research concerning linear changes in the mucosa.

MATERIALS-METHODS: Intraoral optical scans and photographs from 33 patients previously treated at the University Medical Center Groningen were compared. Two observers conducted measurements twice, with a two-week interval between assessments. The intra- and inter-observer reliability for both methods was determined using intra-class correlation coefficients (ICC). Differences between the mean values of the measurements were analyzed using a paired t-test.

RESULTS: For intraoral optical scans, intra-observer ICC values ranged from 0.72 (95% CI 0.50–0.85) to 0.97 (95% CI 0.93–0.98), while inter-observer ICC values ranged from 0.83 (95% CI 0.65–0.92) to 0.96 (95% CI 0.92–0.98). For intraoral photographs, intra-observer ICC values ranged from 0.65 (95% CI 0.40–0.81) to 0.98 (95% CI 0.97–0.99), whereas inter-observer ICC values ranged from 0.74 (95% CI 0.54–0.86) to 0.89 (95% CI 0.77–0.94). Inter-observer reliability for intraoral scans was higher across all measurements compared with intraoral photographs; in one instance, this difference was statistically significant. No significant differences were found in the mean values for linear mucosal changes between the measurement methods.

CONCLUSION: Both intraoral optical scanning and intraoral photography demonstrated high accuracy in measuring linear mucosal changes, with good to excellent agreement in repeated measurements. However, intraoral scanning exhibited greater reproducibility among different observers.

Keywords: intraoral optical scanning, intraoral photography, linear mucosal changes, implant-supported crowns, reproducibility

PP-130 Interdisciplinary full-arch rehabilitation using legacy and newly placed maxillary implants

Emir Akan, Hooman Hashemzadeh

(Department of Periodontology, Ondokuz Mayıs University, Samsun, Turkey)

Restoration of a fully edentulous maxilla with a fixed prosthesis poses complex challenges, particularly in the presence of preexisting implants and generalized bone atrophy. This case reports an interdisciplinary approach involving surgical augmentation, soft tissue management, and prosthetic adaptation.

A 67-year-old systemically healthy male patient presented with total maxillary edentulism, except for two functioning Zimmer implants placed in the right posterior quadrant 23 years prior. Severe horizontal and vertical bone loss was observed throughout the maxilla. The patient expressed a strong preference for a fixed prosthetic solution. Two additional implants were planned: one in the anterior maxilla, placed simultaneously with a nasal floor elevation, and another in the left posterior region, placed with an internal sinus lift. Following a four-month healing period, a pedicled gingival graft was performed to increase vestibular depth and the width of keratinized mucosa in the anterior region. After two more months, prosthetic rehabilitation was initiated. Due to the unavailability of screw-retained abutments for the legacy Zimmer implants, cement-retained abutments were used on all four implants. A custom-cast metal bar was fabricated and cemented, serving as the framework for the final monolithic zirconia restoration.

This case highlights the importance of interdisciplinary planning in managing patients with a mix of legacy and contemporary implant systems, severe maxillary atrophy, and high prosthetic expectations. The combination of bilateral sinus-related augmentation techniques, soft tissue correction, and prosthetic customization enabled successful delivery of a stable, functional, and esthetic full-arch rehabilitation. Long-term integration of the existing implants, despite their age and prosthetic limitations, contributed to achieving a minimally invasive yet fixed solution for the patient's needs.

Keywords: Full-arch rehabilitation, Dental implants, Maxillary atrophy

PP-131 Investigation of the Effect of Waterpik Use on the Surface Properties of Porcelain and Zirconium Materials

Nuran Yanıkoğlu[1], Başak Topdağı[2], nihan kaya[3], Muhammed Kürüm[4], Mohammad ABO HAORAN[5]

([1]Nuran Yanıkoğlu-Atatürk Unıversty, Faculty of Dentistry Departmant of Prosthetic Dentistry; [2]Başak Topdağı-University of Health Sciences, Faculty of Dentistry, Department of Prosthetic Dentistry; [3]Nihan Kaya-Giresun Unıversty, Faculty of Dentistry, Department of Prosthetic Dentistry; [4]Muhammed Kürüm -Bingöl Unıversty, Faculty of Dentistry, Department of Prosthetic Dentisty; [5]Mohammed Abo Haoran-Atatürk Unıversty, Faculty of Dentistry Departmant of Prosthetic Dentistry)

OBJECTIVE: Oral hygiene practices are among the factors that change surface properties over time. The objective of the current study was to investigate the effect of the use of two different pressure levels of mouthwash on the surface roughness and surface hardness of two different materials that are frequently preferred in current prosthetic restorations.

MATERIALS-METHODS: The study utilized 2 types of materials: monolithic zirconium and feldspathic porcelain with metal cr-co metal substrate. The materials used were shaped as rectangular prisms with dimensions of 10x10x2 mm. For 5 Psi and 10 Psi pressure values, 10 samples of each material were calculated with the G* power program. (n:10) Roughness (Ra) and hardness (Hv) values of the material surfaces were recorded after the mouthwash applications. The normal distribution of continuous variables was examined by Kurtosis and skewness test. For the comparison of surface roughness and hardness values between the groups, the ANOVA test was used when the normal distribution condition was met, and Kruskal Wallis test was used when the normal distribution condition was not met.

RESULTS: The surface roughness value of feldspathic porcelains increased significantly for both 5 Psi and 10 Psi degree pressure values. ($p<0.05$) The surface roughness value for zirconium samples increased significantly for both 5 Psi and 10 Psi degree pressure values ($p<0.05$).

CONCLUSION: The changes observed in the surface properties of feldspathic porcelain and monolithic zirconium restorations produced under appropriate conditions do not affect the clinical success of the material when the restorations are cleaned daily with a mouthwash under 5 psi and 10 psi pressure.

Keywords: Feldspathic porcelain, monolithic zirconium, surface properties, water peak

PP-132 Investigation Of The Effects Of Hybrid Ceramics' Thickness And Translucency On The Microhardness Of Resin Cements

Kubilay Barutcigil, Ulviye Şebnem Büyükkaplan, Berkay Kalkan

(Department of Prosthodontics, Akdeniz University, Antalya, Türkiye)

OBJECTIVE: The aim of this study is to evaluate the microhardness of light-cured and dual-cured resin cements beneath translucent and high-translucent hybrid ceramic materials of varying thicknesses, used in the cementation of all-ceramic restorations.

MATERIALS-METHODS: Samples with thicknesses of 0.5, 1, 1.5, and 2 mm were prepared from translucent (T) and high-translucent (HT) ceramic blocks (n = 80). For the microhardness test, a Teflon mold with a thickness of 2 mm and a diameter of 6 mm was used. The light-cured resin cement was polymerized for 30 seconds, while the dual-cured resin cement was polymerized for 20 seconds. Microhardness measurements were performed using a Vickers microhardness tester. The data were statistically analyzed using the SPSS 18 software package.

RESULTS: The microhardness values were significantly lower for light-cured resin cement when used under 1.5 mm and 2 mm thick T and HT ceramic samples. Similarly, the dual-cured resin cement also exhibited statistically significantly lower microhardness values under T and HT ceramics at thicknesses of 1.5 mm and 2 mm.

CONCLUSION: It is recommended to use dual-cured resin cements for the cementation of restorations made from T and HT hybrid ceramics at thicknesses of 1 mm or more.

Keywords: Hybrid ceramics, Resin Cement, Translucency, Thickness

PP-133 Investigation of water absorption and solubility rate of resin cements

Gamze Bolkan, Aslı Seçilmiş

(Department of Prosthodontics, Gaziantep University, Gaziantep, Turkey)

OBJECTIVES: The aim of this study is to investigate the water absorption, desorption, and solubility of light-cured, dual-cured, and self-cured resin cements.

MATERIALS-METHODS: In the study, Variolink Esthetic LC (VLC), Variolink Esthetic DC (VDC), and Panavia V5 (PSC and PDC) in dual or self-cure modes were used. Resin cement samples with a thickness of 0.1 mm were polymerized under 1 mm thick IPS Empress CAD all-ceramic material in accordance with the manufacturer's instructions. The weight change of the samples due to absorption and desorption was measured using the DVS Intrinsic device at 0%, 90%, and 0% humidity conditions for 5, 10, and 19 days, respectively. Following 1, 5, and 19 days of storage, GC/MS was used to determine the amounts of TEGDMA, HEMA, and DL-CQ released, and HPLC was used to measure the amounts of UDMA and BPA.

RESULTS: When the groups are compared, the ranking of weight loss from low to high is VLC, VDC, PDC, and PSC. The amount of monomer released from the resin cements was highest on days 5 and 19. The monomer released in the lowest amount was DL-CQ, while the monomer released in the highest amount was UDMA.

CONCLUSION: Since weight loss and the amount of residual monomer released in light-cured samples are lower than in dual-cure and self-cure samples, light-cured resin cement should be the first choice in all clinical situations where it is indicated.

This study was supported by Gaziantep University Scientific Research Projects Coordination Unit (DHF.UT.21.02).

Keywords: Absorption, GC/MS, HPLC, Resin Cement, Residual Monomer

PP-134 İmmediate loading and soft tissue remodeling of anterior implant-supported prostheses: case report

Senanur Yıldız, Mustafa Kılıç

(Department of Prosthodontics, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey)

INTRODUCTION: The long-term success of implant-supported prostheses is affected by the amount and morphology of hard and soft tissues. Osseointegration of the implant and planning a restoration that is compatible with the surrounding tissues enables the preservation of aesthetics and function. This is particularly important in cases of tooth loss

in the anterior region, where achieving this harmony is critical for clinical success and patient satisfaction. The immediate loading protocol aims to restore lost aesthetics and function to patients as soon as possible. Temporary restorations are often used to achieve this goal.

CASE: A 39-year-old female patient presented to our clinic with a fractured tooth number 22 due to trauma. Following clinical and radiological examination, it was decided to extract the tooth and perform implant placement and temporary restoration during the same session. The tooth was extracted and replaced with an Implance brand implant. During the same session, a temporary restoration was prepared by layering composite resin onto the PEEK abutment and adapted to the patient's mouth. After 3 months of soft tissue remodelling, the patient was ready for the final restoration.

Discussion: Aesthetic success in implant-supported prostheses requires not only a visually satisfying design, but also ideal soft tissue architecture surrounding the prosthesis. Thanks to its structural properties, the peri-implant mucosa can be manipulated using constant, controlled compression to achieve the desired tissue contour. One of the most widely accepted methods today is the "dynamic compression technique", in which pressure is applied to guide and shape the soft tissue into the desired position. This technique offers a conservative approach, particularly for treating single-tooth deficiencies in the aesthetic area with implants, while providing high patient satisfaction.

Keywords: İmmediate loading, soft tissue remodeling, implant-supported prostheses

PP-135 Load-Bearing Capacity of Occlusal Veneers: Influence of Material Type and Bonding Substrate

Arta Lamallari, Vera Colombo, Angelo Cankja, Alpaslan Sener, Mutlu Özcan

(Clinic for Masticatory Disorders and Dental Biomaterials, Zurich University, Zurich, Switzerland)

OBJECTIVE: This study aimed to evaluate the load-bearing capacity of ultra-thin occlusal veneers made of zirconia, lithium disilicate ceramics, and resin matrix composite, bonded to different substrates: dentin-enamel (DE), dentin (D), and resin composite (C) to simulate conditions of eroded teeth. The null hypothesis was that neither material type nor substrate would affect load-bearing capacity.

MATERIALS-METHODS: Occlusal veneers (1 mm) were milled from zirconia (IPS e.max ZirCAD, Ivoclar), lithium disilicate ceramics (IPS e.max CAD and Initial LiSi Block, Ivoclar), and resin matrix composite (Lava Ultimate, 3M ESPE). They were bonded to DE, D, or C substrates in 12 groups (n=10). Restorations were cemented following manufacturers' protocols, aged (1,200,000 cycles, 5–50 °C), and tested for fracture load (N). Two-way ANOVA and Tukey's post-hoc test (α=0.05) evaluated Fmax; Weibull analysis assessed reliability. Pearson's correlation tested relationships between bonded area and Fmax.

RESULTS: Thirteen specimens failed during aging. ZIR-DE had the highest Fmax (4577 ± 1255), and LDG-D the lowest (1081 ± 684). ZIR-DE also showed the highest reliability (Weibull modulus=3.87), followed by ZIR-C (3.18) and RMC-C (2.63). The lowest moduli were seen in LDE–D (1.08) and LDG–DE (1.17). Occlusal veneers bonded to resin composite (C) generally showed higher reliability across materials compared to bonding on dentin. Pearson's correlations confirmed substrate-dependent trends, with LDE showing positive correlations and ZIR showing negligible or negative associations.

CONCLUSION: Both material and substrate significantly affect the strength and reliability of occlusal veneers. Zirconia showed the highest performance overall. Bonding to resin composite substrates resulted in more reliable outcomes than to dentin, regardless of material type, suggesting a protective role of composite resin layer on dentin in adhesive restorations for eroded teeth.

Keywords: Adhesion, Dental Materials, Prosthodontics, Ceramics, Prosthodontics

PP-136 Long-Term Durability of Hydrophilic and Hydrophobic Coatings on PMMA Surfaces: The Effect of Denture Cleansing Tablets – An Experimental Study

Kevser Karakaya[1], Oğuzhan Evcin[2], Ayşe Aksu[1]

([1]Afyonkarahisar Health Sciences University, Faculty of Dentistry, Department of Prosthodontics, Afyonkarahisar, Turkey; [2]Afyonkarahisar Kocatepe University, Department of Materials Science and Engineering, Afyonkarahisar, Turkey)

OBJECTIVE: This study evaluated the long-term surface wettability and durability of hydrophilic and hydrophobic coatings applied to polymethyl methacrylate (PMMA) surfaces after simulated six-month exposure to a commercial denture cleansing tablet.

MATERIALS-METHODS: 36 PMMA disk specimens were randomly divided into three groups: hydrophilic coating, hydrophobic coating, and uncoated control. Coatings were applied using dental-compatible polymer solutions. The hydrophilic system was based on HEMA (2-hydroxyethyl methacrylate) derivatives, and the hydrophobic system consisted of fluorinated acrylate. After coating, all specimens were stored in distilled water for 24 hours. Initial contact angles were measured using a goniometer to assess surface wettability. Samples were then immersed daily in a denture cleansing solution (Corega®, GlaxoSmithKline, Ireland) according to manufacturer instructions to simulate six months of clinical use. Post-aging contact angles were remeasured. Data were analyzed using SPSS software; one-way ANOVA was used for group comparisons, and Wilcoxon and Mann-Whitney U tests were used for within-group analyses. Tukey's test was applied for post-hoc comparisons ($p<0.05$).

RESULTS: Initially, hydrophilic coatings significantly reduced contact angles, while hydrophobic coatings increased them ($p<0.05$). After aging, hydrophilic coatings lost their effectiveness and became statistically similar to the control group ($p=0.7573$). Hydrophobic coatings also lost their water-repellent properties and became more hydrophilic; the difference from the control group was not statistically significant ($p=0.0752$). However, a significant difference remained between the hydrophilic and hydrophobic groups ($p<0.05$).

CONCLUSION: Although surface coatings effectively altered wettability in the short term, they failed to maintain stability under prolonged chemical exposure. More durable and stable coating systems are needed for long-term clinical applications.

Keywords: PMMA, surface coating, hydrophilic-hydrophobic modification, denture cleansing tablet, contact angle.

PP-137 Making a child laugh: A case report with 5-year follow-up

Abdurrahman Şahinbaş

(Department of Prosthodontics, Bayındır Hospital Dental Clinics Beşiktaş, İstanbul, Türkiye)

Oligodontia is the permanent absence of six or more teeth, excluding the third molars. Oligodontia has been associated with various genetic disorders and some defined syndromes. Isolated oligodontia is the absence of permanent and primary teeth without any other cause. A 13-year-old girl referred to the prosthetic dentistry clinic had only maxillary permanent canine, primary left canine and primary molars; mandibular canine teeth, primary central and primary molars. The patient was treated with a fixed partial denture in the lower and upper jaw in order not to restrict maxillomandibular development but also to provide function and esthetics. As a result of the 5-year follow-up, diastema was observed between the primary molars and canines in both jaws of the patient. It was observed that the patient's maxillary development was not obstructed.

Keywords: Agenesis, fixed prosthesis, dental anomaly, isolated oligodontia

PP-138 Management of a Single Implant Neck Fracture in the Mandibular Posterior Region: A Case Report

Haydar Albayrak[1], Simanur Bayyıldız[1], Emrah Soylu[2]

([1]Department of Prosthodontics, Erciyes University, Kayseri, Turkey; [2]Department of Oral and Maxillofacial Surgery, Erciyes University, Kayseri, Turkey)

INTRODUCTION: A neck fracture of dental implant is a significant complication that threatens the long-term success of treatment. This case report describes the management of a neck fracture in a single implant by performing an additional surgery and using two splinted implant-supported crowns.

CASE PRESENTATION: A 56-year-old male patient presented with complaints of mobility and impaired mastication associated with a single implant-supported crown in the mandibular right first molar region. The patient was missing the mandibular right second molar. The implant-supported crown had no mesial tooth contact. Radiographic examination revealed localized crestal bone loss. The abutment screw was loosened and the crown was removed from the implant body together with the abutment. A fracture at the implant neck was identified during intraoral examination, prompting the decision to remove the implant. Two bone-level dental implants were planned and placed in the right mandibular first and second molar teeth area. Following a three-month osseointegration period, an impression was made using type A silicone and a prefabricated tray. The impression was poured using Type III dental plaster to obtain a working cast with a gingival mask. Following abutment selection, metal-ceramic block crowns were fabricated using a cement-retained design, and intraoral adjustments were performed. Zinc polycarboxylate cement was used for cementation of block crowns. After the six-month follow-up period, the patient reported no symptoms, and no biological or mechanical complications were observed.

DISCUSSION: Interproximal contact loss(ICL) between an implant-supported single-unit crown and the adjacent natural tooth may compromise peri-implant tissue health and negatively affect patient satisfaction with the treatment. ICL between an implant-supported single-unit crown and the

adjacent natural tooth may compromise peri-implant tissue health, screw loosening, and implant neck fracture. These factors may negatively impact the patient's satisfaction with the treatment. The use of an implant-supported splinted crown is recommended to minimize complications.

Keywords: Implant Failure, Implant Planning, Splinted Crown.

PP-139 Management of Newton Type 3 Denture Stomatitis: A Case Report

Haydar Albayrak, Esra Baykuş, Tuğçe Erbaş

(Department of Prosthodontics, Erciyes University Faculty of Dentistry, Kayseri, Turkey)

INTRODUCTION: Denture stomatitis is a chronic inflammatory condition frequently observed in edentulous patients using complete dentures. It is characterized by mucosal inflammation in areas where the prosthesis contacts the tissue. According to Newton's classification, Type 3 denture stomatitis is the most severe form, presenting with inflammatory papillary hyperplasia. This case report outlines the treatment and follow-up of a patient diagnosed with Newton Type 3 denture stomatitis.

Case Presentation: 65-year-old male patient with complete edentulism, using the same complete dentures for approximately 15 years, presented to the Erciyes University Faculty of Dentistry with complaints of dissatisfaction and inadequate mastication. Intraoral examination revealed multiple red, edematous, nodular tissue enlargements, particularly localized in the midline and posterior palatal region. White pseudomembranous plaques, removable with gauze, were also observed. The patient reported wearing his dentures while sleeping and neglecting oral hygiene. Based on clinical and anamnesis findings, a diagnosis of Newton Type 3 denture stomatitis was made. The patient was educated on oral hygiene, prescribed nystatin oral suspension (Mikostatin (Bayer Türk,Turkey)) (applied 4 times daily for 2 weeks), and provided with new dentures. Clinical improvement and lesion regression were observed within 2 weeks. A 6-month follow-up schedule was initiated; however, recurrence occurred due to poor oral hygiene practices, necessitating re-initiation of antifungal therapy.

Discussion: Although topical antifungal agents are effective in treating denture stomatitis, long-term success relies heavily on maintaining proper oral hygiene. Continued use of unclean dentures and neglecting overnight removal significantly increases the risk of recurrence. This case underscores the critical importance of patient education and regular follow-up in the management of advanced denture stomatitis.

Keywords: denture stomatitis, papillary hyperplasia, oral hygiene, recurrence, antifungal treatment

PP-140 Mandibular Overdenture Supported by Two Canines: A Two-Year Clinical Follow-Up Case Report

Bahar Eyidemir[1], Edanur Güler[1], Zeynep Papatya[1], Esra Ayşe Dilaverler Yardım[2]

([1]PhD Candidate, Department of Prosthodontics, Faculty of Dentistry, Istanbul Health ve Technology University, Istanbul, Turkey; [2]Asst. Prof., Department of Prosthodontics, Faculty of Dentistry, Istanbul Health ve Technology University, Istanbul, Turkey)

INTRODUCTION: Mandibular complete dentures often present insufficient retention and stability due to anatomical limitations in edentulous patients. Although implant therapy is commonly used to address these issues, it may not be feasible in patients with systemic conditions that contraindicate surgical interventions. In such cases, preserving and utilizing remaining natural teeth as abutments can enhance prosthetic success while minimizing invasiveness and improving patient comfort. Tooth-supported overdentures are a valuable alternative, particularly when strategic teeth such as canines are available.

Case Description: A 60-year-old male patient with a history of diabetes mellitus presented with complaints of instability in his mandibular complete denture. The patient exhibited a fully edentulous maxilla and retained only two mandibular canines. Implant therapy was contraindicated due to his systemic condition. As an alternative, a tooth-supported mandibular overdenture was planned. Clinical and radiographic evaluations confirmed that both canines were periodontally and structurally suitable for overdenture support. Endodontic treatment was performed, and the clinical crowns were reduced to allow sufficient space for prosthetic components. Cast copings with ball attachments were fabricated and cemented. A mandibular overdenture incorporating matching female housings was constructed and delivered. A conventional complete denture was also fabricated for the maxilla. The patient was recalled every six months for clinical evaluation and maintenance. Over a two-year follow-up period, no complications such as attachment loosening, mucosal irritation, or abutment failure were observed. The patient reported high satisfaction in terms of masticatory function, prosthesis stability.

Discussion: This case demonstrates that, in patients for whom implant therapy is contraindicated, mandibular overdentures supported by two natural canines with ball attachments can offer a stable, functional, and long-term treatment solution. Tooth-supported overdentures provide biomechanical advantages and improve patient satisfaction through a minimally invasive approach. The strategic use of retained natural teeth, particularly canines, remains a clinically effective alternative for managing mandibular edentulism.

Keywords: Overdenture, canine-supported prosthesis, mandibular edentulism, tooth-retained restoration, case report

PP-141 Maxillary and Mandibular Full Mouth Rehabilitation with Multi-Unit Supported Metal-Ceramic Prostheses: A Case Series

Oğuzhan Yalçınkaya, Kübra Değirmenci, Hamiyet Kılınç

(Department of Prosthetic Dentistry, Abant İzzet Baysal University, Bolu, Turkey)

In dentistry, dental implants are a commonly prefered treatment option for the replacement of missing teeth. Although implant therapy is a modern and effective approach, it is not always possible to place implants perpendicular to the occlusal plane due to anatomical limitations. In such cases, when implants must be placed at an angle, prosthetic rehabilitation can be achieved using angled abutments, custom abutments, hybrid (ti-base) systems, or multi-unit abutment solutions. In this case series, 6 implants were placed in the maxilla and mandibula of 2 patients and their prosthetic treatments were completed with multi-unit abutment metal-supported porcelain. The 52-year-old female patient, who has no systemic health issues, completed her implant treatments at a private clinic and then, after approximately 4 months, applied to our university for prosthetic procedures. After the examination, it was decided to make a screw-retained prosthesis using multi-units due to the placement angles of the implants. In another case, a 40-year-old female patient with no systemic health issues had her implants placed in the department of periodontology at our university and then applied to our department for prosthetic procedures. In this case, due to the angles of the implants, multi-units were chosen, and a fixed prosthesis with metal-supported porcelain was delivered.

Keywords: implant, multi unit, full mouth

PP-142 Maximizing Outcomes with Limited Options: Prosthetic Approaches Adapted to Systemic Conditions

Işılay Tekinşen Palaz, Ilgi Tosun

(Department of Prosthodontics, Çanakkale On Sekiz Mart University Faculty of Dentistry, Çanakkale, Turkey)

Implant-supported restorations may be contraindicated or declined due to systemic conditions or patient preference. In such situations, personalized prosthetic solutions are essential to restore function and esthetics while respecting biological limitations.

Case Presentations: Case 1: A 52-year-old female with a history of osteoporosis and prior denosumab (Prolia) use was contraindicated for implant therapy. Despite a deep bite, a minimally invasive Maryland bridge was chosen. After enamel-level preparation and a C-type silicone impression, the restoration was cemented with resin cement. At the 6-month follow-up, the patient reported excellent esthetic and functional satisfaction.

Case 2: A 67-year-old male with no systemic issues refused implant treatment for a missing upper right lateral incisor. Since tooth #11 was severely malpositioned, a three-unit monolithic zirconia bridge (#11–13) was planned. Pulp vitality was assessed on tooth #11 prior to preparation. Tooth #11 was prepared without harming adjacent tooth #21. Impressions were taken with C-type silicone. The final prosthesis was cemented with resin cement. The patient was pleased with the correction of the misalignment and the restored esthetics.

Case 3: A 58-year-old male presented with complete edentulism and severe ridge resorption. Mental foramina were located at the ridge crest. Due to financial and logistical constraints, an immediate complete denture was planned. Alginate preliminary and zinc oxide eugenol final impressions were followed by jaw relation records with wax rims. The denture was delivered successfully, and the patient reported comfort and satisfaction.

CONCLUSION: These cases demonstrate that individualized prosthetic solutions—ranging from conservative fixed prostheses to complete dentures—can effectively address functional and esthetic demands when implant therapy is contraindicated or refused. A careful assessment of systemic health, anatomical limitations, and patient expectations is crucial for successful outcomes in prosthetic rehabilitation.

Keywords: Prosthetic Rehabilitation, Minimally Invasive Dentistry, Tooth Replacement Alternatives, Systemic Risk and Dental Planning,Prosthodontic Treatment Planning, Patient-Centered Care

PP-143 Metal-Ceramic Hybrid Prosthetic Rehabilitation in a Complete Edentulous Patient with Implants Placed in the Maxilla and Mandibula: A Clinical Case Report

İrem Simge Mart[1], Dilara Küçük[1], Bike Altan Çınar[2], Şevki Çınar[2]

([1]department of prosthodontics, university of health science hamidiye health science institue, istanbul, turkey; [2]department of prosthodontics, university of health science hamidiye faculty of dentistry, istanbul, turkey)

INTRODUCTION: Complete edentulism adversely affects chewing, speech, and aesthetics, leading to a significant decline in quality of life. Hybrid prostheses supported by dental implants combine the comfort of fixed prostheses with the soft tissue support of removable dentures, offering a highly satisfactory solution for edentulous patients. This case report presents the clinical rehabilitation of a patient using a metal-ceramic hybrid prosthesis over implants in both jaws.

Case Presentation: A 44-year-old systemically healthy male patient presented to our clinic with complaints of functional and aesthetic deficiencies due to complete edentulism. Clinical and radiographic evaluations indicated the need for implant-supported rehabilitation. Five implants were placed in the maxilla and six in the mandible. After successful osseointegration, multi-unit abutments were selected for prosthetic restoration in both arches. Considering the patient's interarch distance, a metal framework with porcelain layering was planned. Impressions were taken, followed by a passive fit check of the framework using various clinical tests. After the dentin try-in, the prostheses were glazed and screw-retained. Follow-up examinations showed high patient satisfaction, functional success, and healthy peri-implant soft tissues.

Discussion: Hybrid prostheses effectively meet the esthetic and biomechanical needs of edentulous patients. Metal-ceramic superstructures ensure long-term durability and aesthetics, while the use of multi-unit abutments supports passive fit and reduces biological complications.

CONCLUSION: Implant-supported hybrid prostheses are a reliable long-term treatment option for edentulous patients, provided that proper case selection, surgical accuracy, and careful prosthetic planning are ensured.

Keywords: Hybrid prosthesis, dental implant, multi-unit abutment, complete edentulism, metal-ceramic restoration

PP-144 Metal-Free, Minimal-Invasive Smile: A Clinical Case of Full-Mouth Ceramic Rehabilitation

Şevval Takva, Aslı Bengisu Karayel, Ragibe Şenay Canay

Department of Prosthodontics, Faculty of Dentistry, Hacettepe University, Ankara, Türkiye)

INTRODUCTION: With increasing awareness of the potential systemic effects of dental amalgam and growing demand for metal-free, esthetic, and biocompatible restorations, biomimetic dentistry has gained significant importance. This case report presents a comprehensive, minimally invasive full-mouth rehabilitation employing indirect ceramic restorations in place of amalgam fillings, highlighting a digital and biologically respectful workflow

Case Description: A 32-year-old female patient presented with dissatisfaction regarding the appearance of her posterior amalgam restorations and concerns about possible mercury-related health risks. Clinical and radiographic evaluations revealed no active pathology but confirmed suboptimal esthetics and marginal integrity of multiple restorations. A comprehensive treatment plan focusing on biomimetic principles was developed. Eighteen amalgam restorations were removed over four sessions under rubber dam isolation following the IAOMT (International Academy of Oral Medicine and Toxicology) safety protocol, which included high-volume evacuation, water irrigation, air filtration, and appropriate personal protective measures. Minimally invasive cavity preparations were completed, and digital impressions were obtained using the intraoral scanner (TRIOS 5 3Shape, Copenhagen, Denmark). CAD/CAM-fabricated lithium disilicate (IPS e.max) inlays and onlays were adhesively cemented using dual-cure resin cement. Occlusion was adjusted to ensure functional harmony.

Discussion: The restorations demonstrated excellent adaptation, occlusal function, and esthetic integration. The patient expressed high satisfaction with both the appearance and comfort of the final results. This case illustrates how combining safe amalgam removal techniques with digital workflows and biomimetic materials can lead to highly functional, durable, and esthetically pleasing outcomes, aligning with the expectations of today's patients.

Keywords: Dental Amalgams, Dental Inlay, Onlays, Empress ceramic, Dental Esthetics

PP-145 Mini-Implants Retaining Removable Partial Dentures in Kennedy Class I Subjects: A 5-Year Prospective Study

Sanja Peršić Kiršić[1], Asja Čelebić[1], Josip Kranjčić[2], Petra Rajčić[3], Nikola Petričević[1]

([1]Department of Removable Prosthodontics, School of Dental Medicine, University of Zagreb, Zagreb, Croatia; [2]Department of Fixed Prosthodontics, School of Dental Medicine, University of Zagreb, Zagreb, Croatia; [3]Private Dental Clinic, Zagreb, Croatia)

OBJECTIVES: Long-term clinical outcomes of mini-dental implants (MDIs) used to retain removable partial dentures (RPDs) in edentulous posterior regions are not well documented. This study aimed to assess the 5-year clinical outcomes of MDIs placed in first premolar or canine sites for bilateral free-end RPD retention in Kennedy class I patients, comparing the maxilla and mandible.

MATERIALS-METHODS: A total of 92 participants received two mini-dental implants (MDIs) each and a new removable partial denture (RPD). Clinical and radiographic evaluations were conducted at 1, 3, and 5 years post-insertion. At the 5-year follow-up, 71 participants completed the study, comprising 82 MDIs placed in the mandible and 58 in the maxilla. The following parameters were assessed: marginal bone level (MBL) changes, implant success and survival rates, as well as oral hygiene oral hygiene indices (MPI - Modified Plaque Index and MBI - Modified Bleeding Index).

RESULTS: The 5-year success rate was 93.3% and 93.4% ($p > 0.05$), in the mandible and the maxilla, respectively. Mean peri-implant bone loss (MBL) increased significantly over time($p < 0.01$) to 0.50 mm in the mandible and 0.52 mm in the maxilla. Age was the only significant predictor of bone loss, with younger participants showing higher MBL. Gender, jaw type, and antagonist condition had no significant effect. No implant fractures occurred; most prosthodontic maintenance involved "O"-ring replacements. MPI and MBI were not significantly correlated with MBL.

CONCLUSIONS: MDIs inserted in premolar/canine regions to retain RPDs in Kennedy class I patients provided reliable clinical outcomes over five years. This treatment is a viable, minimally invasive, and cost-effective alternative for patients with narrow alveolar ridges who are not candidates for standard implants.

Keywords: mini-implants, removable partial denture, marginal bone loss, implant success rate, implant survival, Kennedy class I

PP-146 Minimal invasive approach: zirconia resin bonded fixed dental prostheses in two different cases

Selda Gökçe Erdal, Aynur Beyza Çavuşculu Güdül, Şükriye Ece Geduk, Ayşegül Köroğlu

(Department of Prosthodontics, Zonguldak Bülent Ecevit University Faculty of Dentistry, Zonguldak, Turkiye)

INTRODUCTION: Single tooth loss in the anterior region can lead to aesthetic, functional, phonetic, and psychological issues. Among the treatment options; minimal invasive approaches preserves natural tooth structure. This case report presents zirconia-based resin bonded fixed restorations in two patients with single anterior tooth loss, using high-strength and aesthetic monolithic zirconia blocks.

Case Description: A 15-year-old female patient underwent extraction of an impacted maxillary left lateral incisor due to external resorption during orthodontic treatment. Due to the patient's incomplete skeletal development, implant placement was postponed. A resin-bonded fixed prosthesis was indicated as a provisional prosthetic solution until skeletal maturity is attained. After minimal preparation on the adjacent teeth (21 and 23), impressions were taken, and a zirconia adhesive bridge was fabricated using CAD/CAM technology (ZirCAD Prime). The intaglio surfaces of the restoration were sandblasted and silanized, while enamel surfaces were etched prior to bonding with dual-cure resin cement. A 34-year-old female patient presented with a missing mandibular anterior tooth. After clinical and radiographic evaluation, a conservative approach was chosen and a monolithic zirconia resin-bonded restoration was planned. Supragingival shoulder type preparations were performed on the lingual surfaces of the abutment teeth. The bridge was milled using CAD/CAM technology. The intaglio surfaces were sandblasted and treated with a silane containing 10-MDP. After enamel etching, resin cement was used for final bonding.

Discussion: ZirCAD Prime was selected in both cases due to its enhanced translucency and its monolithic structure, which eliminates the risk of chipping commonly associated with layered zirconia restorations. At follow-up appointments, both patients expressed satisfaction with the functional and aesthetic outcomes of the treatment and no complications were observed.

Keywords: CAD-CAM, Resin-Bonded Fixed Partial Denture, Zirconium

PP-147 Minimally Invasive Approach to Dental Crowding Using Porcelain Laminate Veneers: A Clinical Case Report

Cansu Varol, Doğaç Can Demirel, Yılmaz Umut Aslan, Yasemin Özkan

(Department of Prosthodontics, Marmara University, Istanbul, Turkey)

INTRODUCTION: Aligner therapy is frequently preferred for the treatment of mild to moderate dental crowding. However, inadequate patient cooperation and high aesthetic expectations can restrict treatment success. In such cases, minimally invasive restorative approaches can offer alternative and functional solutions. This case report presents the aesthetic and functional rehabilitation of anterior crowding using porcelain laminate veneers, guided by a digital mock-up, in a patient who demonstrated inadequate cooperation with aligner treatment.

Case Description: A 33-year-old systemically healthy female patient presented with anterior crowding. Initially, a 22-step aligner treatment was planned using the Comprehensive protocol (AlignTech, Tempe, Arizona, USA). However, the patient used only 12 aligners due to insufficient cooperation. Therefore, the treatment plan was revised in accordance with the patient's request and aesthetic expectations, and a minimally invasive treatment using porcelain laminate veneers was planned for teeth 15–25 and 35–45. Digital impressions for the mock-up were obtained using Trios3 (3Shape A/S, Copenhagen, Denmark), and the provisional mock-up was applied using GC TempSmart DC (GC Corporation, Tokyo, Japan) and evaluated intraorally. Aesthetic modifications were made accordingly. Guided by the mock-up, minimal preparation was performed using a depth guide bur. Final digital impressions were taken, and 20 laminate veneers were produced from IPS E.max MT BL4 (Ivoclar Vivadent AG, Schaan, Liechtenstein). Cutback technique was applied to the anterior teeth to enhance esthetics and translucency, while premolars were characterized using staining techniques. Following appropriate surface conditioning, all restorations were cemented with GC G-Cem Veneer. Occlusion was verified and final polishing was accomplished. At the one-year follow-up, no complications were observed.

Discussion: This case demonstrates that laminate veneers provide a minimally invasive and esthetic alternative for patients exhibiting insufficient cooperation during orthodontic treatment. The use of digital mock-ups and provisional restorations facilitates precise treatment planning, improves clinician–patient communication, and optimizes clinical results.

Keywords: Minimally Invasive Dentistry, Porcelain Veneers, Dental Malocclusion, Orthodontic Appliances

PP-148 Modified Custom Tray for Mobile Fibrous Tissues: A Case Series

Aslı Çepni, Osman Karaağaçlıoğlu, Yigit Atacan, Mehmed Çanakçı, Şebnem Begüm Türker

(Department of Prosthodontics, Marmara University, Istanbul, Turkey)

Fibrous or flabby maxillary ridge, usually seen in maxillary anterior ridge opposed to the natural anterior mandibular teeth, is significant problem for retention and stability of complete denture. In particular, problems arise during the act of impression taking, when the applied force causes slight rotation of the flabby maxillary ridge. So, the mobile denture bearing tissues becomes distorted. The aim of this article was to describe a modified technique for construction of an custom tray to obtain an accurate impression of full arch mobile fibrous ridge tissue.

Keywords: fibrous tissues, modified custom tray, complete denture

PP-149 Monolithic Zirconia in the Aesthetic Zone: A Viable Option

Marie Bartoňová[1], Jindřich Charvát[3], Hana Hubálková[2], Lenka Vavřičková[4]

(1Marie Bartonova 1; [2]Jindrich Charvat 2,3; [3]Hana Hubalkova 2; [4]Lenka Vavrickova 4)

INTRODUCTION: The use of zirconia-based materials in prosthetic dentistry has increased significantly due to its reliable mechanical resistance, excellent biocompatibility, and advanced aesthetic qualities – particularly improved translucency. Increasing the yttrium content in zirconia material from 3 % to 5 % significantly improves aesthetics, but at the same time reduces strength. Therefore high-translucency monolithic zirconia is indicated preferably in the anterior (aesthetic) region.

Case Description: Presented cases document indications, advantages and disadvantages of aesthetic zirconia. They focus on preventing possible failures (fracture, decementation). Additionally, patient satisfaction is evaluated from both functional and aesthetic perspectives. Case I – describes minimally invasive preparation for

zirconia crowns in a patient with severe enamel erosion caused by acid exposure from gastroesophageal reflux. Case II – documents a borderline case with high-translucency monolithic zirconia with flexural strength gradient in a patient suffering from advanced tooth wear and parafunctional habits. Case III – shows titanium hybrid bar-supported multi-unit bridge in a frontal area.

Discussion: Reliable and long-term success of crown and bridge reconstructions made of high-translucency monolithic zirconia requires adherence to the clinical protocol from proper case selection, tooth preparation, precise scanning, detailed digital planning to cementation, and maintaining workflow discipline throughout the CAI-CAD-CAM process in the dental lab. and maintaining technological discipline in the dental laboratory during CAI-CAD-CAM workflows. During treatment planning there must be also respected individual occlusal load and length of span in frontal bridges. Zirconia ceramics are becoming a universal material for fixed prosthetic restorations

Keywords: Aesthetic dentistry, Crown reconstruction, Monolithic zirconia, CAD-CAM workflow, Gradual triplex technology,

PP-151 Multidisciplinary approach to maxillary lateral incisor agenesis management: case series

Ilhem Ben Othmen, sarra Nasri, Islem El Ayachi, Ons Shili, Dalenda Hadyaoui, Zohra Nouira, saafi Jilani, Belhassen Harzallah

(Department of Fixed Prosthodontics, Research Laboratory of Occlusodontics and Ceramics, University of Monastir, Tunisia)

INTRODUCTION: Maxillary lateral incisor agenesis presents significant aesthetic and functional challenges. Treatment options typically involve space closure or opening for prosthetic or implant rehabilitation. The choice of treatment requires careful evaluation of the patient's clinical situation to determine the most appropriate approach.

Case Description: The first case involves a 26-year-old female with bilateral agenesis, presenting with mesialized canines, who was treated with ceramic veneers to optimize both aesthetic and functional outcomes. The second case concerns a 25-year-old female with skeletal Class III malocclusion, who underwent space opening with implant-supported rehabilitation to replace teeth 12 and 22. The third case involves a 28-year-old female, who ultimately received a ceramic cantilevered resin-bonded bridge due to insufficient bone volume and a preference for a non-surgical solution.

Discussion: Treatment decisions are influenced by anatomical considerations, occlusal relationships, bone volume, and the patient's preferences, emphasizing the importance of a multidisciplinary approach. Space opening is often the most effective treatment to restore aesthetic, functional, and occlusal parameters, especially in patients with flat or concave profiles. When adequate bone volume is present, implants are a viable option. In cases where implant therapy is not possible, bonded bridges offer a reliable alternative. Space closure, while cost-effective and functionally satisfactory, may not be ideal when maintaining canine guidance in lateral movements is crucial for optimal occlusal function. Early diagnosis and a patient-centered approach are essential for optimizing outcomes. A comprehensive treatment plan ensures aesthetic and functional success with long-term stability.

Keywords: Maxillar lateral incisor agenesis, cantilever bonded bridge, Ceramic laminate veneers, Implant-supported prosthesis, space closure, space opening

PP-152 Multidisciplinary Rehabilitation of Anterior Tooth Loss: A Case Report of Trauma and Non-Syndromic Oligodontia

Rumeysa Şen, Elif Aydoğan Ayaz

(Department of Prosthodontics, Karadeniz Technical University, Trabzon, Turkey)

INTRODUCTION: Anterior dental trauma and congenital anomalies can adversely affect mastication, phonation, psychological well-being, and social life. This case report presents the prosthetic rehabilitation of two young adults: one with tooth loss due to trauma, and another with non-syndromic oligodontia.

Case 1: In young adults, dentoalveolar trauma often affects the maxillary anterior region. Esthetic and functional success depends on proper planning, material selection, and an ideal gingival emergence profile. A 20-year-old male lost tooth #21 due to trauma. Following extraction, a dental implant was placed. A temporary crown was used for soft tissue shaping. After achieving the desired tissue profile, a custom impression post was fabricated, and an impression was taken with addition-type silicone. The definitive crown was produced from lithium disilicate ceramic (E-max), completing the restoration. Esthetic and functional outcomes were satisfactory, with no complications at the 6-month follow-up.

Case 2: A 19-year-old female presented with esthetic and functional concerns related to the congenital absence of teeth

#12, 14, 15, 22, 24, and 25, and a midline diastema between #11 and 21. Clinical and radiographic evaluation revealed six missing maxillary permanent teeth and retained primary canines (#53 and 63), with no evidence of physiological root resorption. The remaining teeth were periodontally healthy. However, generalized diastemas and tooth size discrepancies resulted in reduced vertical dimension. Full-arch fixed prosthetic treatment was planned for teeth #17, 16, 13, 53, 11, 21, 63, 23, 26, and 27. Monolithic zirconia (Katana Zirconia HT) was chosen due to its mechanical strength and esthetics. No complications were noted at the one-year follow-up.

Discussion: Anterior tooth loss significantly impacts esthetics and function. Single-tooth losses due to trauma can be predictably restored with implants, while oligodontia cases require comprehensive, personalized planning and material selection for long-term success.

Keywords: oligodontia, prosthetic rehabilitation, esthetics, dental ceramics

PP-153 Multidisciplinary Smile Rehabilitation Through Plastic Surgery and Prosthodontic Treatment After Traumatic Suicide Attempt: A Case Report

göker altuntaş, Akın Coşkun

(Department of Prosthodontics, Faculty of Dentistry, Dokuz Eylul University, Izmir, Turkey)

Severe trauma to the oral and facial regions can result in significant esthetic, functional, and psychosocial impairments, particularly in young individuals. Among the most complex causes of such trauma are suicide attempts, which demand comprehensive and multidisciplinary treatment approaches. This case report presents the rehabilitation of a 19-year-old female patient who sustained extensive maxillofacial injuries following a suicide attempt involving a fall from the fifth floor.

Initial surgical reconstruction was performed by a plastic surgery team at Celal Bayar University. After 1.5 years, the patient presented with esthetic and functional complaints, including tooth loss, impaired mastication and speech, and dissatisfaction with facial appearance. Clinical and radiographic examination revealed multiple missing teeth, mandibular reconstruction plates, bone loss, and a vertical root fracture in tooth 24.

Treatment included procedures such as root canal therapy, tooth extraction, periodontal therapy, and tooth preparations for fixed restorations. A digital smile design was created based on the patient's facial structure, and a provisional prosthesis was used to determine vertical dimension and assess esthetic and functional outcomes. The final restoration was completed with metal-ceramic fixed prostheses supported by both teeth and soft tissues in the anterior region.

Follow-up visits were conducted at 1, 3, and 6 months. A detailed clinical and radiographic examination was also performed during the 1-year follow-up. The patient received hygiene instructions and was enrolled in a long-term maintenance program.

This case highlights the importance of multidisciplinary and personalized treatment strategies in complex facial trauma. The integration of surgical and prosthetic rehabilitation not only restored esthetics and function but also supported psychosocial recovery. Given the limited number of such reports in the literature, this case may serve as a valuable reference for similar cases.

Keywords: Suicide attempt, Multidisciplinary treatment, Smile rehabilitation, Facial trauma

PP-154 Multidisciplinary Treatment of Vertical Dimension Loss and Anterior Crossbite: Prosthetic Considerations

Arlinda Tmava Dragusha[1], Linda J. Dula[2]

([1]Department of Prosthetic Dentistry, University Dentistry Clinical Center of Kosovo; [2]Department of Prosthetic Dentistry, University Dentistry Clinical Center of Kosovo, Medical Faculty, University of Prishtina)

INTRODUCTION: This case report aims to present the treatment of a patient with significant loss of vertical dimension caused by dental abrasion and the absence of posterior teeth, accompanied by an anterior crossbite.

Case Description: Following comprehensive clinical and radiographic evaluation, a treatment plan was developed involving fixed metal-ceramic restorations combined with a removable partial denture (RPD) supported by precision attachments. During the patient's first visit, a comprehensive dental and medical history was taken, and necessary examinations such as radiographs, impressions, and bite registration were performed. In the first phase, the bite height was measured, clinical crown lengthening was done on teeth 11 and 21, and a fiber post was placed on tooth 21. Afterward, the teeth were prepared for the restoration, and vertical dimension was evaluated using bite templates. The fixed metal-ceramic bridge was prepared according to standard protocols, ensuring high accuracy with polyvinyl siloxane impressions and were

designed with extra-coronary attachments. After completing the fixed restorations, the RPD were fabricated following standard clinical procedures. The final cementation of the bridge and delivery of the RPD was completed after final adjustments. The patient was instructed on proper prosthetic care and oral hygiene and advised to return for a follow-up visit.

Discussion: This approach allowed for the restoration of vertical dimension, stabilization of occlusion, and improvement of both aesthetics and oral function. Despite the technical challenges and higher costs, such treatments remain a valuable option for patients who are not suitable candidates for dental implants. In conclusion, careful planning and a personalized treatment approach are essential for successfully restoring optimal stomatognathic function and aesthetics in complex rehabilitation cases.

Keywords: abrasion, crossbite, metal-ceramic bridge, removable partial denture (RPD)

PP-155 Occlusion analyzer as valuable tool in digital workflow for screw-retained single-implant crowns

Nikša Dulčić, Ivica Pelivan, Samir Ćimić

(Department of Removable Prosthodontics, University of Zagreb School of Dental Medicine, Zagreb, Croatia)

INTRODUCTION: Occlusal designs with stable static contacts and without interfering dynamic contacts are crucial for correct loading and long-term success of implant-supported restorations. This study evaluates an occlusion analyzer in identifying the location and distribution of static and dynamic occlusal contacts on implant-supported single crowns in the posterior maxilla and mandible.

Case Description: The study involved twenty patients requiring implant-supported single crowns in posterior regions. After placement of bone-level implants (Ankylos C/X, DS, USA) and a 3-6 month healing period, implants were uncovered and custom gingiva formers were placed. Two weeks later, digital impressions with static and dynamic occlusal recordings were taken using the intraoral scanner (Medit i700, South Korea). The implants were restored with screw-retained monolithic zirconia crowns on TitaniumBase (Ankylos Ti-link) abutments. Occlusal scans were performed and analyzed immediately after crown delivery and again at six months using the Occlusion Analyzer App.

Discussion: Immediately after delivery, premature static contacts were detected in two cases and interfering dynamic contacts in six. Patients with premature static contacts were aware of them, whereas only one patient with dynamic interferences was aware of it. These contacts were marked with 8 µm articulation foil and adjusted using a zirconia diamond rubber polisher. Control scans confirmed elimination of premature and interfering contacts. At the four-month follow-up, one case showed premature static contacts and four showed interfering dynamic contacts, none of which were perceived by patients. Adjustments and control scans were made using the same procedure as after delivery. Conclusion and clinical implications: The occlusion analyzer proves to be a valuable clinical tool for achieving optimal occlusal design with correct static occlusal contacts and without interfering dynamic occlusal contacts in implant-supported restorations. This reduces excessive loading and potential prosthetic complications. It is recommended for routine planning, design and follow-up in clincal practice.

Keywords: Digital workflow, Prosthetic complications, Occlusion analyzer

PP-156 Optimizing Zirconia Onlay Adhesion: A Case report

Marwa Amara, Balkis Khadhraoui, Zeineb Riahi, Zied Fedaoui, Naima Ayari, Zohra Nouira, Dalenda Hadyaoui, Jilani Saafi, Belhassen Harzallah

(Department of fixed prosthodontics,University of Monastir, Monastir, Tunisia)

Several new materials and technologies have had a tremendous impact on clinical dentistry and helped revolutionize traditional restorative treatment concepts. Zirconia (Zirconium-dioxide, ZrO_2) has become a material of choice in restorative dentistry due to its excellent mechanical properties, biocompatibility, and aesthetic qualities. As a high-performance ceramic, zirconia offers exceptional fracture resistance, minimal wear, and good translucency, making it suitable for crowns, bridges, implant abutments and even partial restorations. Its chemical stability and resistance to degradation further enhance its longevity in oral environment.

However, despite these advantages, bonding to zirconia has historically posed significant challenges. Traditional surface treatments, like sandblasting and the use of primers, have shown limited success in establishing durable bonds. To address these difficulties, the APC concept proposed by Markus Blatz and colleagues was developed. This innovative approach includes three practical steps: (A) air-particle abrasion, (P) zirconia primer, and (C) adhesive composite resin.

The introduction of the APC protocol represents a significant advancement in zirconia bonding. It offers a predictable, efficient, and clinically applicable method to overcome bonding limitations. By improving adhesion, this protocol enhances the success rate and longevity of zirconia restorations, ultimately benefiting both clinicians and patients through more durable and aesthetically outcomes.

In this context, this poster will present a clinical case involving the restoration of a structurally compromised mandibular first molar. A zirconia onlay was selected as the restorative solution to leverage the material's favorable mechanical proprieties. The adhesive protocol was carried out following the APC concept, and the clinical bonding sequence will be detailed.

Keywords: Ceramics, Dental Bonding, Dental Restoration, Zirconium

PP-158 Peri-implant Tissue Definition of a Single Implant Following Immediate Placement, Provizionalization with a 3-D Printed Emergence Profile Former on Titanium Stock Healing Abutment: A Case Report

Ayben Şentürk[1], Selin Kartal[2]

([1]Ankara University, Faculty of Dentistry, Department of Prosthodontics, Ankara, Turkey; [2]Ankara University, Graduate School of Health Sciences, Department of Prosthodontics, Ankara, Turkey)

INTRODUCTION: There is limited evidence on the long-term stability of the free gingival margin following immediate implant placement. Although, the provisional restoration has been shown in the literature to contribute to the preservation of the gingival contour by optimizing the emergence profile. This case presents the use of an emergence profile–shaped provisional former designed to support and stabilize the soft tissue architecture during the healing phase.

Case Description: A 27-year-old male patient was referred for evaluation and management of a failing maxillary left first molar. Clinical examination revealed inadequate coronal structure, recurrent caries, and exposure of endodontic filling material, all indicating a poor prognosis for the remaining root complex. Following a comprehensive clinical and radiographic assessment, and in alignment with the patient's functional and esthetic expectations, a treatment plan involving tooth extraction and immediate implant placement was formulated. A staged provisionalization protocol was selected. In order to support the peri-implant soft tissue architecture and promote the formation of interdental papillae, a customized provisional restoration with a tailored emergence profile was fabricated and placed after implant placement to stabilize the surrounding gingival tissues.

Discussion: The marginal stability of the facial gingiva is a critical determinant in achieving and maintaining optimal esthetic outcomes in implant therapy. In clinical scenarios where limited hard or soft tissue volume poses a risk to peri-implant tissue stability, the use of an emergence profile–shaped provisional restoration may contribute to the preservation of the buccal free gingival margin during the early healing phase. This case report outlines the clinical protocol for customized emergence profile provisionalization and evaluates its role in supporting gingival architecture and marginal tissue stability.

Keywords: immediate implant, provisionalization, minimally traumatic extraction, emergence profile

PP-159 Photogrammetry assisted digital workflow in full-arch implant-supported fixed prosthesis:a clinical report

Eda Gül Kayır, mustafa barış Güncü

(Department of Prosthodontics, Faculty of Dentistry, Hacettepe University, Ankara, Turkey)

Introduction: One of the key factors for long-term success in implant-supported prostheses is achieving passive fit. This requires accurately recording the three-dimensional positions of the implants. In a fully digital workflow, ensuring passive fit in full-arch prostheses with multiple implants can be clinically challenging. Photogrammetry is a novel option for reliable, direct intraoral registration of the positions of multiple implants. The aim of this clinical report is to present a complete digital workflow—from impression to final prosthesis fabrication—utilizing a photogrammetric technology.

Case Description: A 50-year-old completely edentulous female patient presented to Hacettepe University Depertment of Prosthodontics with seven maxillary implants in place. Multi-unit abutments were selected. The implants positions were recorded using a photogrammetry device. Subsequently, a second digital impression was obtained using an intraoral scanner to register the peri-implant soft tissue contours. The two datasets (STL files) were then aligned to generate a definitive virtual model containing both the implant positions and soft tissue morphology. This final model was transferred to dental CAD software. A denture try-in was designed and

milled from a polymethylmethacrylate resin to evaluate the esthetic parameters, teeth positions, and vertical dimension. After confirming clinical parameters, a titanium framework was fabricated. The passive fit of the framework was verified using the Sheffield (single-screw) test. The final prosthesis was completed using a zirconia superstructure.

Discussion: Accurate framework production is critical for the success of implant-supported prostheses and depends on reliable impressions. The photogrammetry system allows clinicians to obtain the exact position of dental implants and to fabricate accurate implant suprastructures. However, since photogrammetry does not capture soft tissue information, a second digital impression is required. When multiple implants are involved, photogrammetry offers a fast, accurate, and predictable solution within the digital workflow.

Keywords: photogrammetry, dental implants, dental impression technique, computer-aided design, computer-aided manufacturing

PP-160 Photogrammetry-Assisted Digital Workflow for Full-Arch Monolithic Zirconia Restorations: A Clinical Report

Edanur Güler[1], Nibal Sabanci[1], Esra Ayşe Dilaverler Yardım[2]

([1]PhD Candidate, Department of Prosthodontics, Faculty of Dentistry, Istanbul Health and Technology University,Istanbul,Türkiye; [2]Asst.Prof., Department of Prosthodontics, Faculty of Dentistry, Istanbul Health and Technology University, Istanbul, Türkiye)

INTRODUCTION: Achieving cross-arch accuracy and passive fit remains a major challenge in conventional impression techniques for full-arch implant restorations. In contrast, photogrammetry-assisted digital workflows offer enhanced precision, efficiency, and predictability. This clinical report describes the rehabilitation of a 56-year-old fully edentulous female patient using a fully digital protocol and monolithic zirconia prostheses for both jaws.

Case Description: Twelve endosseous implants (Ø3.7 mm, length 10–12 mm; ETK, France) were placed in anterior and posterior regions of the maxilla and mandible. After successful osseointegration, multi-unit abutments were connected. Final impressions were obtained using a hybrid protocol that combined photogrammetry (Imetric-Icam, Switzerland) with intraoral scanning (iTero Lumina, USA). With reference bars in place, interocclusal records and vertical dimension were registered using C-type vinyl siloxane ether (Zetaplus, Zhermack, Italy). Facial photographs and marker data were recorded in natural head position and transferred to the laboratory. Digital alignment and virtual articulation (Artex, Germany) were performed. A CAD-CAM resin mock-up (Armaresin, Turkey) was fabricated and evaluated intraorally for esthetics and occlusion. Final restorations were designed as full-arch, screw-retained prostheses using monolithic zirconia (Ceramill Zolid FX, Amann Girrbach, Austria) and torqued to 15 Ncm.

Discussion: The photogrammetry-based workflow demonstrated superior cross-arch accuracy and passive fit compared to conventional techniques. The try-in allowed for verification of occlusal harmony, vertical dimension, and esthetics in a single appointment. Follow-up at 1-, 3-, 6-month, and 1-year intervals revealed no peri-implant complications. The patient reported high satisfaction in function and esthetics. This case highlights the clinical advantages of photogrammetry and monolithic zirconia in streamlining full-arch implant rehabilitation.

Keywords: Photogrammetry, Digital Workflow, Full-Arch Implant Prosthesis, Monolithic Zirconia, Passive Fit

PP-161 Post-core application for an implant with cold-welded and fractured abutment: a 21-month follow-up case report

Haydar Albayrak, Tuğçe Erbaş

(Department of Prosthodontics, Erciyes University, Kayseri, Turkey)

INTRODUCTION: Fractured abutments can especially lead to significant and time-consuming complications for both clinicians and patients when the implant body and abutment are cold-welded. The solution is to remove the abutment and re-crown with a new abutment. However, if abutment could not be removed from the implant body, the implant must be removed. This case describes the use of a post-core and implant-supported crown as an alternative approach to implant removal.

CASE DESCRIPTION: A 55-year-old male patient presented with the complaint that the implant-supported crown in the lower right first molar area had fallen off. Although the abutment screw was successfully removed, the cold-welded abutment could not be retrieved from the implant body using various techniques (using manual attempts, ultrasonics). The patient declined implant removal and consented to the proposed post-core treatment. Under water irrigation, the cold-welded abutment part and screw hole were meticulously abraded using an aerator and a tungsten carbide bur. An impression of the screw channel and the implant body surface facing

the abutment was taken using additional silicone impression material and a standard tray. The working model was obtained using type 4 dental plaster. Dental porcelain was applied over the core. During the try-in, lateral excursive contacts were eliminated and centric relation contact was established. The restoration was finally cemented intraorally with glass ionomer cement. At the 21-month follow-up, the restoration remained intact with no signs of decementation or porcelain chipping. Radiographic evaluation revealed no peri-implant bone loss.

DISCUSSION: The post-and-core technique presented in this case report can be considered an alternative approach to implant removal in the management of implant abutment fractures. The post-core technique has demonstrated short-term success; however, it carries risks such as decementation, implant neck fracture and porcelain chipping, and requires long-term follow-up.

Keywords: dental implant, dental abutment fracture, cold welding, screw loosening, post-core technique

PP-162 Prepless monolithic lithium disilicate single-wing resin bonded bridge on the esthetic area: one-year follow-up

Nihal Karadeniz, Onur Etoz

(Departmant of Prosthodontics, Mersin University, Mersin, Turkey)

INTRODUCTION: Resin-bonded bridges (RBBs) offer a minimally invasive solution for replacing missing teeth, especially in young patients where tooth preservation is crucial. For individuals who decline conventional prostheses, orthodontics, or implants, adhesive restorations provide a conservative alternative.

Case Description: A 23-year-old healthy female presented with esthetic concerns after traumatic loss of the maxillary right central incisor (tooth 11). Clinical examination revealed an anterior open bite, with no pathology on radiographic evaluation. The patient declined orthodontic and implant options as interim solutions. A conservative treatment plan was designed to address her esthetic and functional expectations. A single-wing resin-bonded bridge was fabricated from monolithic lithium disilicate (IPS E.max, Ivoclar) without tooth preparation, preserving adjacent structures. The prosthesis was bonded using self-adhesive universal resin cement (U-Cem Premium, Vericom Co., Ltd.) to the palatal surface of the adjacent left central incisor (tooth 21), resulting in immediate esthetic and functional improvement. At the one-year follow-up, the restoration remained intact, with no signs of debonding, fracture, or functional compromise. The patient reported high satisfaction.

Discussion: This case highlights the value of minimally invasive approaches in managing esthetic and functional needs of young patients rejecting orthodontic or implant therapy. Long-term studies from the Kiel group reported a 15-year clinical success rate of 97.3%, without major complications, supporting the reliability of RBBs. Consequently, this technique has gained acceptance as a viable alternative to more invasive treatments. All things considered, the monolithic LDS bridge met clinical and esthetic demands while preserving natural tooth integrity.

Keywords: resin-bonded bridge, lithium disilicate, minimally invasive dentistry, anterior tooth replacement, adhesive prosthesis, prepless restoration

PP-164 Preservation of Soft Tissue Contour with Provisional Restoration after Immediate Implantation in the Esthetic Zone: Case Report

Büşra ekin Keskin[1], Fatih Mehmet Korkmaz[2], Efe Can Sivrikaya[3]

([1]Büşra Ekin Keskin; [2]Fatih Mehmet Korkmaz; [3]Efe Can Sivrikaya)

AİM: The treatment of anterior tooth loss requires appropriate treatment planning and clinical sensitivity. The emergence profile plays an important role in both the aesthetics and long-term durability of implant-supported prostheses. The aim of this case report is to preserve the soft tissue contour and achieve a functional restoration with the help of a temporary restoration.

CASE: Patient who presented to our clinic with a crown root fracture in tooth number 11 was clinically and radiologically examined. The patient was decided to have an implant-supported fixed prosthesis. An implant was placed. In the same session, the patient's natural tooth, which had an intact crown, was cemented using a flowable composite material (Polofil NHT Flow, VOCO GmbH, Germany) onto a temporary titanium abutment. The provisional restoration was shaped concave to match the natural tooth anatomy. 1st week, 1st month and 3rd month controls were performed. Then the final restoration production phase started. A permanent impression was taken to reflect the soft tissue contour obtained with silicone impression material (Variotime Dynamix Tray, Heraeus Kulzer GmbH). The permanent restoration was fabricated from monolithic zirconia material on a hybrid abutment and delivered to the patient. After 6 mounth, control session no problems were detected.

CONCLUSIONS: This case report demonstrates the successful creation of a soft tissue contour with a temporary restoration after immediate implant treatment for tooth loss in the aesthetic area. This procedure can be considered as a viable

and effective alternative for the treatment of missing teeth in the aesthetic area.

Keywords: Hybrid Abutment, Zirconia, Immediate Implant Placement, Soft Tissue Contour

PP-165 Preventing Implant Malpositioning: The Role of Preoperative Planning and Prosthetic-Driven Placement:A Case report

Gelengül Urvasızoğlu[1], Tuba Ökten[2], Muhammed Ubeydullah Yazar[2], Funda Bayındır[2]

([1]Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Atatürk University, Erzurum, Turkiye; [2]Department of Prosthodontics, Faculty of Dentistry, Atatürk University, Erzurum, Turkiye)

INTRODUCTION: Improper implant planning can lead to anatomical damage, prolonged surgery, and increased patient discomfort. Thorough preoperative imaging and prosthetic planning are crucial for successful outcomes. This study presents the failure of three implants that were not placed with a prosthetically driven approach, leading to perforation of the lingual cortical plate and consequently eliminating or significantly delaying the possibility of fixed prosthetic treatment. The study highlights the importance of involving prosthodontists alongside surgeons in implant planning and emphasizes the advantages of incorporating advanced techniques in implant placement.

Case Description: A 45-year-old female patient presented with severe mandibular pain following the placement of dental implants in the region of teeth 34, 36, and 37. A panoramic radiograph revealed implant malpositioning, prompting further evaluation with computed tomography (CT). The CT scan confirmed bone fenestration due to implant malposition, with perforation of the lingual cortical plate. Based on these findings, the malpositioned implants were atraumatically removed using the reverse torque technique. Postoperative antibiotics were prescribed to prevent infection, and the patient was advised to maintain oral hygiene and follow a soft diet. Due to the complications experienced, the patient opted for conventional prosthetic rehabilitation with a removable partial denture. A healing period of six months was planned for osseous and soft tissue regeneration before proceeding with prosthetic treatment. Regular follow-ups were scheduled to monitor healing and plan for definitive rehabilitation.

Discussion: Preoperative planning and prosthetically driven implant placement are crucial for preventing implant malpositioning and ensuring successful outcomes in implant dentistry. Advanced digital technologies such as CBCT, intraoral scanning, and navigation systems enhance implant placement precision. By utilizing these tools, clinicians can optimize implant positioning, improve esthetics, and ensure long-term stability. Further research should focus on refining these techniques and expanding their application in complex cases.

Keywords: Dental implant malposition, implant planning, dental implant complication.

PP-166 Prostetic Restoration of Periodontally-Induced Polydiastema Using Monolithic Zirconia: A Case Report

Elif Yalçın, Eyyüp Altıntaş'

(Department of Prosthodontics, Fırat University, Elazığ, Turkey)

INTRODUCTION: Polydiastema refers to interdental spaces larger than 0.5 mm between multiple teeth. It poses both esthetic and functional challenges, especially in the anterior maxilla. Etiology is multifactorial and includes genetic predisposition, periodontal migration, tooth-arch length discrepancies, frenulum anomalies, parafunctional habits (e.g., tongue thrusting), and premature loss of primary teeth. These gaps can significantly affect smile esthetics and lead to psychosocial discomfort.

OBJECTIVE: To restore anterior esthetics and function in a patient with generalized periodontitis and polydiastema using monolithic zirconia restorations.

Case Description: A 28-year-old systemically healthy female presented with anterior spacing. Clinical and radiographic evaluation revealed generalized periodontitis with diastemas attributed to periodontal tooth migration. Following periodontal and endodontic therapy, prosthetic rehabilitation with monolithic zirconia was planned. Intraoral and facial photographs were imported into EXO-CAD for digital smile design. After obtaining consent, a knife-edge preparation was performed on maxillary anterior teeth with margins at the gingival level. Conventional impressions were digitized via model scanning. Provisional PMMA restorations were fabricated and temporarily cemented. Final restorations were designed and milled from multilayer monolithic zirconia. After soft tissue healing, definitive restorations were cemented. Follow-ups were conducted at 1, 3, and 6 months.

CONCLUSION: Monolithic zirconia provides a durable, esthetic, and biocompatible solution for the rehabilitation of anterior polydiastema in periodontal patients. Its natural translucency enhances patient satisfaction, while low plaque accumulation supports periodontal health. This case underscores the importance of multidisciplinary planning and supports the need for broader clinical studies and long-term evaluations.

Keywords: polydiastema, digital smile design, zirconia

PP-167 Prosthetic Approach to Tooth Structure Damage Associated with Dietary Habits and Bruxism: A Case Report

Selin Özkan Dayıoğlu, Demet Çağıl Ayvalıoğlu Şamiloglu, Mahya Rastgar Safari

(Istanbul Health and Technology University, Faculty of Dentistry, Department of Prosthodontics)

INTRODUCTION: Tooth structure loss resulting from parafunctional habits such as bruxism, compounded by erosive dietary factors, presents a multifactorial challenge in restorative dentistry. Patients often exhibit a combination of advanced anterior wear, dentin hypersensitivity, and non-carious cervical lesions. Successful rehabilitation requires a minimally invasive, esthetically driven, and functionally stable prosthetic approach. This case presents a comprehensive adhesive and occlusal strategy for managing tooth wear caused by bothbruxism and dietary habits.

Case Description: A 54-year-old female patient presented with severe anterior tooth wear, dentin hypersensitivity, and non-carious cervical lesions attributed to parafunctional habits, particularly bruxism. The maxillary central incisors exhibited significant structural compromise and esthetic concerns. To fulfill the functional and esthetic needs of the patient, lithium disilicate crowns were placed on the maxillary central incisors. Additionally, seven maxillary anterior teeth were restored using minimally invasive lithium disilicate laminate veneers. A monolithic zirconia crown was placed on the maxillary first molar to reinforce posterior occlusal support. Tooth preparations followed adhesive principles, and the occlusion was carefully evaluated and adjusted. A protective occlusal splint was delivered post-treatment to eliminate future damage.

Discussion: This case emphasizes the importance of early diagnosis and a comprehensive, adhesive-based prosthodontic treatment plan in managing bruxism-induced tooth wear. Lithium disilicate ceramics allowed for both conservative tooth preparation and high esthetic outcomes. The use of a monolithic zirconia crown in the posterior ensured durability. The integration of occlusal assessment and an occlusal splint served as critical components for maintaining long-term stability.

CONCLUSION: Through a customized, adhesive prosthodontic strategy, it was possible to restore esthetics, relieve sensitivity, and prevent further damage in a patient affected by bruxism.

Keywords: Bruxism, Adhesive Prosthodontics, Lithium Disilicate, Occlusal Splint, Tooth Wear

PP-168 Prosthetic Management of a Maxillary Defect with a Definitive Obturator

Günseli Sıla Şahin, Arzu Zeynep Yıl`dırım, Ayşe Nurcan Duman

(Department of Prosthodontics, Gazi University, Ankara, Turkey)

INTRODUCTION: Maxillary defects commonly occur after surgical resection of oncologic lesions, leading to oroantral communication that significantly impairs mastication, deglutition, speech, and facial appearance. This case report presents the fabrication of a definitive obturator with a cast metal framework for a patient with an acquired maxillary defect who previously struggled with an ill-fitting prosthesis.

Case Description: A 64-year-old male patient presented to the Department of Prosthodontics seeking replacement of his current obturator prosthesis. The patient reported poor prosthesis retention, difficulty in mastication, and hypernasal speech. Extraoral examination revealed a scar contracture over the upper lip and minimal facial asymmetry characterized by a depressed right malar region. Intraoral evaluation showed a well-healed post-maxillectomy defect on the right side of the maxilla, classified as a Class II defect according to the Brown classification system. An open hollow bulb obturator was planned for prosthetic rehabilitation due to its advantages, including reduced weight, improved hygiene, ease of fabrication, and enhanced speech intelligibility. A new palatal obturator was fabricated using polymethyl methacrylate (PMMA), supported by a chrome-cobalt alloy framework, with the addition of an indirect soft acrylic liner over the defect area to enhance comfort and adaptation.

Discussion: Prosthetic rehabilitation following maxillectomy presents challenges due to compromised support, retention, and stability. In this case, a hollow bulb obturator with a cast metal framework was designed to reduce weight, enhance retention, and ensure functional load distribution. Remaining teeth and palatal support were utilized through a tripodal design, enhancing prosthesis stability. The soft liner provided additional comfort over the defect. Obturators remain a reliable, non-invasive treatment option when carefully designed according to defect classification and soft tissue conditions. This approach effectively restored mastication, speech, and esthetics, significantly improving the patient's quality of life.

Keywords: partial maxillectomy, obturator prosthesis, hollow bulb obturator

PP-169 Prosthetic Management of Class III Malocclusion for Establishing a Class I Occlusal Relationship

Aleyna Meltem Büyüksefil, Nuran Yanıkoğlu, Nafia Ebru Polat Aydoğdu

(Department Of Prosthodontist, University Of Ataturk, Erzurum, Turkey)

INTRODUCTION: Occlusal disorders can negatively affect not only aesthetics and functionality but also the overall oral health and quality of life of patients. In particular, discrepancies in occlusion and vertical dimension can present complex clinical situations requiring precise treatment approaches. This case report examines a patient treated prosthetically due to Class III occlusion and occlusal discrepancies.

CASE DESCRIPTION: A 34-year-old male patient presented to our clinic with aesthetic and functional complaints. Clinical evaluation revealed an 8 mm difference between the patient's occlusal vertical dimension and rest vertical dimension. The patient previously had a fixed dental prosthesis between the maxillary and mandibular canines.

The existing occlusion was thoroughly re-evaluated. In order to restore proper occlusion and increase the vertical dimension, all teeth were prepared, and a full-mouth provisional restoration was milled using CAD/CAM technology. After a four-week observation period, during which no temporomandibular joint disorders or other complications were noted, the provisional prosthesis remained in use.

DISCUSSION: At the end of an eight-week follow-up period, 5 mm increase in vertical dimension was achieved without any observed clinical issues. Following the treatment process, metal-ceramic crowns were placed on both the maxillary and mandibular arches, resulting in significant aesthetic and functional improvement. This case demonstrates that CAD/CAM technology can be an effective tool in correcting occlusal disorders, and that provisional restorations play a crucial role during the treatment process. Furthermore, regular follow-up during treatment enhances patient compliance and contributes to treatment success. Such approaches may serve as valuable guidance in prosthetic treatment planning.

Keywords: Esthetics, Vertical Dimension, Occlusal Adjustment

PP-170 Prosthetic obturator design for rehabilitation of maxillary defect without tooth loss

Elif Köseoğlu, Merve Çakıbay Tanış

(Department of Prosthodontics, Gazi University, Ankara, Turkey)

INTRODUCTION: Palatal defects following partial or total resection of the hard and soft palate result in impaired oral functions, notably affecting speech and mastication. Prosthetic obturators are widely utilized to restore the separation between oral and nasal cavities, thereby improving phonation and nutrition during the healing period. However, ensuring adequate retention in patients without tooth loss poses a significant challenge due to limited anchorage. Consequently, alternative prosthetic designs are required to enhance stability and functionality.

Case Description: This case reports a patient with a posterior hard and soft palate defect after soft palate resection. Since the patient had no missing teeth, conventional retention methods were insufficient. To improve retention, a custom acrylic obturator was fabricated to cover both hard and soft palate areas. Retention was augmented with Adams clasps, vestibular arch and a drop clasp. The prosthesis was periodically relined and adjusted to accommodate changes in the defect's size throughout healing. This approach ensured continuous functional rehabilitation, supporting speech and nutritional needs.

Discussion: In dentate patients with palatal defects, prosthetic retention is complicated by the absence of traditional retention sites due to intact dentition and tissue loss. Incorporating vestibular arch,Adams clasps and drop clasps effectively enhances prosthesis stability. Furthermore, ongoing soft tissue changes require frequent prosthesis adjustment and relining to maintain fit and function. This case highlights the importance of individualized prosthetic planning and regular maintenance to optimize speech and feeding rehabilitation during postoperative recovery.

Keywords: obturator, palatal defect, Adams clasps, vestibular arch, drop clasp

PP-171 Prosthetic occlusal rehabilitation of ankylosed teeth

Arzu Arıcı, Hakkı Doğuş Çevik, Lamia Mutlu Sağesen

(Department of Prosthodontics, Pamukkale University, Denizli, Turkey)

INTRODUCTION: Dental ankylosis is an abnormal fusion of the alveolar bone to the cementum or dentin surface. This fusion between the tooth and the alveolar bone can have severe consequences, including infraocclusion of the tooth, particularly in young patients. The treatment modalities encompass a wide range of approaches, including extraction, surgical luxation, surgical repositioning, removable or fixed appliances, segmental osteotomy, deliberate reimplantation, extraction of the tooth using immediate augmentation techniques, autotransplantation, decoration, orthodontic treatment, and prosthetic enhancement.

Case Description: A 23-year-old female patient with a 9-year history of orthodontic treatment presented at our clinic with complaints of posterior tooth disclusion and poor tooth visibility in the anterior region. A thorough intraoral examination was conducted, which revealed ankylosis in teeth 16, 46, and 47. Additionally, the examination revealed lingual deviation and infraocclusion in tooth 46, an operculum in tooth 47, and a lack of sufficient lower facial height in the extraoral examination. Tooth 47 was treated with operculectomy, while teeth 46 and 47 were treated with gingivectomy. Furthermore, their clinical crown lengths were increased. The occlusal vertical dimension was improved by applying direct composite restorations to the occlusal surfaces of the posterior teeth. Direct composite restorations were also utilised to increase the visibility of the anterior teeth. Following the vertical dimension increase, teeth 16, 45, 46, and 47 were optimally prepared and included in the occlusal function with monolithic zirconia restorations.

Discussion: The patient was followed up periodically at 3, 6, and 12 months. No cementation failure, chipping, or fracture of the restoration, percussion, palpation, periapical lesions on the teeth, or pain in the stomatognathic system were observed.

Keywords: dental ankylosis, occlusion, zirconia

PP-173 Prosthetic Rehabilitation in a Geriatric Patient with Isolated Cleft Palate: A Case Report

Gamze Yerebakan, Onur Doğan Dağ, Ahmet Altuğ Çilingir

(Department of Prosthodotics,Trakya Unıversıty,Edirne,Turkey)

Cleft palate is a congenital defect resulting from insufficient fusion during craniofacial development. Although it is commonly seen with cleft lip, isolated cleft palates are also relatively frequent. These structural anomalies negatively impact essential functions such as feeding, speech, hearing, and breathing, thereby affecting both physiological and psychosocial development. A multidisciplinary treatment approach is essential. This case report presents the prosthetic rehabilitation of a 70-year-old patient with an isolated cleft palate using a maxillary obturator and a mandibular removable partial denture.

A 70-year-old patient with an isolated congenital cleft palate presented to our clinic with complaints of speech resonance problems and the passage of food into the nasal cavity. In the first session, diagnostic impressions of both jaws were taken. In the second session, selective border molding was performed on the maxilla, followed by a secondary impression using polyether material. In the mandible, the teeth were prepared for prosthetic purposes, and a final impression was obtained using C-type silicone. In the following sessions, the lower fixed restorations were cemented, and the occlusal vertical dimension was established. A trial denture setup was conducted, and after the patient's approval, the final prosthesis was fabricated. At the final appointment, occlusion was adjusted to achieve bilateral balanced articulation, and a soft liner was applied to the bulb portion of the obturator to improve retention and patient comfort.

Prosthetic rehabilitation in individuals with cleft palate involves anatomical challenges that may complicate clinical procedures. In this case, the impression material separated from the tray during the initial impression due to the cleft, highlighting the importance of accurate impression techniques. Additionally, the residual bulb-shaped defect required a custom design to enhance retention. The combination of a maxillary obturator and a mandibular removable prosthesis successfully improved the patient's speech and nutritional functions.

Keywords: Obturator, Isolated Cleft Palate, Prosthetic Treatment

PP-174 Prosthetic Rehabilitation in Behçet's Disease: A Digitally-Guided, Mucosa-Conscious Crown Replacement Protocol

Bade Pehlivanoğlu, Sultan Merve Ucar, Rafat Sasany

(Department of Prosthodontics, Faculty of Dentistry, Biruni University)

INTRODUCTION: Behçet's disease (BD) is a chronic, multisystemic vasculitis characterized by recurrent oral ulcerations, which pose significant challenges in prosthodontic rehabilitation. Given the high prevalence of BD in Turkey and neighboring regions, an interdisciplinary approach is essential. Oral lesions in BD increase mucosal fragility, cement intolerance, and the risk of restoration failure, necessitating careful treatment planning.

Case Description: A 42-year-old female with Behçet's disease presented with crown failures, recurrent aphthous ulcers, and prior tooth loss. Treatment involved three phases. Initially, failed porcelain fused to metal (PFM) bridgework (teeth 12–16) was removed, full-mouth periodontal therapy completed, and ulcers treated with topical triamcinolone acetonide 0.1%. Surgically, implants (Ø4.8×7 mm) were placed in regions 14 and 16, and tooth 13 underwent endodontic treatment with fiber post-core buildup. In the prosthetic phase, digital impressions (iTero Element 2) enabled computer aided design-computer aided manufacturing (CAD-CAM) fabricated PFM restorations with reduced palatal contours and 0.5 mm subgingival margins to minimize mucosal irritation. Screw-retained implant crowns were delivered using platform-switched abutments. Provisional restorations were evaluated for 2 weeks, followed by selective cementation: Voco Meron Plus for natural teeth and glass ionomer cement in ulcer-prone areas. At six months, no oral ulcer recurrence was observed, indicating successful mucosal adaptation. Peri-implant conditions remained stable, confirming biological and mechanical success. The Oral Health Impact Profile-14 (OHIP-14) score improved from 38 to 12, with the patient reporting enhanced comfort, function, and satisfaction.

Discussion: Prosthodontic rehabilitation in Behçet's disease requires a customized approach that emphasizes the selection of materials compatible with inflamed oral mucosa, the use of digital technologies to minimize tissue trauma, and a carefully planned cementation protocol to promote biological integration. This case highlights the value of combining digital tools with biologically sensitive treatment strategies in the management of complex mucosal disorders such as Behçet's disease.

Keywords: behcet disease, digitally-guided, prosthetic rehabilitation, biologically sensitive treatment

PP-175 Prosthetic rehabilitation of a cleft lip and palate patient using telescopic bar prosthesis: case report

Bahriye Berfin Dağhan[1], Elçin Esenlik[2], Nurullah Türker[1]

([1]Department of Prosthodontics, Akdeniz University, Antalya, Turkey; [2]Department of Orthodontics, Akdeniz University, Antalya, Turkey)

INTRODUCTION: Cleft lip and palate result from incomplete fusion of facial tissues during the 4th to 12th weeks of embryonic development. The etiology is multifactorial, involving genetic mutations and teratogenic factors such as maternal smoking, alcohol use, certain medications, folic acid deficiency, and diabetes. These defects may cause alveolar bone anomalies, dental agenesis, impaired oral function, and challenges in prosthetic rehabilitation. Patients may also experience difficulties with phonation, function, and psychological well-being.

Case Description: This report describes the prosthetic rehabilitation of a 24-year-old male with cleft lip and palate. The patient had previously completed orthodontic treatment at the Akdeniz University Department of Orthodontics, and was referred to the Department of Prosthodontics for further treatment. Clinical and radiographic examinations revealed four remaining maxillary teeth (FDI 13, 16, 23, and 26). Considering retention and intermaxillary relationships, a removable prosthesis supported by a titanium bar on telescopic crowns was planned. All four teeth were prepared, and impressions were made using an addition-type silicone material. Telescopic crowns and a titanium bar were fabricated. Subsequently, a functional impression was taken. During the try-in, the fit, retention of components, intermaxillary relations, and occlusal load distribution were carefully evaluated. Minor adjustments were performed where necessary.

At the final appointment, the telescopic crowns and titanium bar were permanently cemented and the removable prosthesis was fitted. Follow-up evaluations were performed at 7 days, 1 month, and 2 months. The prosthesis remained stable throughout this period. Improvements in speech, mastication, and overall oral function were observed.

Discussion: Removable prostheses supported by bars on telescopic crowns are commonly used in cases with limited remaining dentition where retention is crucial. The interdisciplinary approach, which combined previous orthodontic treatment with prosthetic rehabilitation, significantly contributed to achieving optimal functional and esthetic outcomes in this case.

Keywords: Cleft lip and palate, telescopic crowns, titanium bar, removable prosthesis

PP-176 Prosthetic Rehabilitation of a Cleft Lip and Palate Patient with Digital Workflow: Case Report

Tuğçe Karabulut-Açıkgöz[1], Gamze Avul[2]

([1]Prosthodontist, Private Practice, Ankara, Türkiye; [2]Research Assistant, Department of Prosthodontics, Faculty of Dentistry, Hacettepe University, Ankara, Türkiye)

OBJECTIVE: Cleft lip and palate (CLP) is a common craniofacial anomaly that forms during the embryonic period. Dental deficiencies close to the cleft line are common in patients. Initial treatment typically involves tissue molding and surgical interventions. Maxillary deficiency is addressed with orthognathic surgery and orthodontic treatment. However, these treatments may not fully resolve functional issues related to aesthetics, phonation, and nutrition. Consequently, restorative and/or prosthetic treatments may be necessary for comprehensive treatment. This case report aims to present the rehabilitation of a CLP patient using a digital workflow and monolithic zirconia restoration.

CASE: A 31-year-old female patient with CLP was admitted to the Hacettepe University Hacettepe University Faculty of Dentistry, Prosthodontics Clinic to improve the masticatory function and aesthetic deficiencies after orthodontic treatment. In the anamnesis, it was learned that the cleft lines were closed, fixed orthodontic treatment and orthognathic surgery were performed. Clinical examination revealed mobility and several missing teeth. In the treatment of the patient, chamfer margin preparations were performed on the remaining teeth, followed by digital impressions using the Trios3 scanner. A provisional restoration was milled for digital design evaluation and to assess patient expectations. Subsequently, a one-piece fixed monolithic zirconia restoration (Ivoclar IPS e.max ZirCAD Prime, Schaan, Liechtenstein) was milled, and after necessary adjustments, it was cemented.

CONCLUSION: The application of a one-piece monolithic zirconia restoration provided splinting of the teeth, addressed the patient's missing teeth, and met aesthetic expectations. Chewing functions were improved by ensuring occlusion. During periodic follow-up appointments, psychological improvement was observed in the patient, and no complications were reported.

Keywords: mouth rehabilitation, cleft lip, cleft palate, zirconium

PP-177 Prosthetic Rehabilitation Of A Large Maxillary Defect Due To Nasopharyngeal Tumor Resection: A Case Report

Bugra Tug Topuz, Ece Kasil, Demet Çağıl Ayvalıoglu Şamiloglu

(Department Of Prosthodontics, Istanbul Health And Technology University, Istanbul, Turkiye)

INTRODUCTION: Nasopharyngeal tumors are malignant neoplasms located in the epithelial lining of the nasopharynx, and they often require aggressive treatment modalities including surgery, radiotherapy, and/or chemotherapy. Surgical resection of these tumors, especially when involving adjacent maxillary and palatal structures, frequently results in large maxillofacial defects. This case report presents the comprehensive prosthetic rehabilitation of a patient with a large acquired maxillary defect following surgical resection of a nasopharyngeal tumor.

Case Description: A 49 years old male patient with a large maxillary defect resulting from extensive surgical nasopharyngeal tumor resection applied to the clinic of Department of Prosthodontics. Following surgery, the patient had received postoperative radiotherapy and chemotheraphy. Prior to definitive prosthetic rehabilitation, endodontic and periodontal treatments of the remaining teeth were completed. Support was taken from the remaining teeth (16-15, 12-11-21-22) to fabricate a precision attachment-retained obturator that provided partial separation between the oral and nasal cavities. A quadrilateral design was performed. For the mandibular partial edentulism, a precision attachment-retained, metal framework removable partial denture was designed.

RESULTS: The patient's issues with speech and nutrition deficiency were resolved with the obturator prosthesis and the esthetic demands were fullfilled.

CONCLUSION: Within the scope of this case, the use of an obturator provided functional and esthetic rehabilitation of a patient with a large maxillary defect following oncologic surgery.

Keywords: Obturator, Maxillary Defect, Nasopharyngeal Tumor, Prosthetic Rehabilitation, Oral Cavity, Removable Prosthesis

PP-178 Prosthetic Rehabilitation of a Neurologically Impaired Patient After Implant Failures: A Case Report

Mustafa Ufuk Sancılı, Sanem Erdoğan, Atakan Bahar, RIFAT GOZNELI

(Department of Prosthodontics, Marmara University, Istanbul, Turkey)

INTRODUCTION: Fixed prostheses are often preferred in neurologically impaired patients due to their reduced ability to manage the insertion and separation of removable dentures. Although full-arch implant rehabilitation provides fully fixed prosthetic rehabilitation, it requires careful surgical and prosthetic planning, especially when previous implant failures and anatomical limitations are present. Zygomatic implants are a viable alternative without grafting for posterior maxillary support in severely resorbed cases. This report presents the oral rehabilitation of a patient, who had implant failures, using a zygomatic implant, followed by a custom bar-retained removable prosthesis.

Case Description: A 69-year-old male with a history of cerebral hemorrhage and 95% disability presented with edentulism in both the maxilla and mandible. Initially, 6 intraosseous implants were placed per each maxilla and mandibula to be able to rehabilitate with fixed prosthesis. Two of which in the maxillary posterior region failed due to insufficient oral health. Radiographic evaluation confirmed insufficient posterior bone volume for re-implantation. A new surgical plan was developed as: in addition to already placed 4 intraosseous implants in maxilla, one zygomatic implant was newly placed. Due to the deep palatal emergence of the zygomatic implant, a fully fixed prosthesis could not be planned. Therefore, a bar-retained partial denture with a sliding retention mechanism was fabricated at the defect side, accompany with the fixed prosthesis at the other side.

Discussion: This case demonstrates how zygomatic implants can complement intraosseous implants in patients with implant failures and severe localized resorption. When fixed prosthetic options are limited by the tissue defects, distance between the implants or implant positions, bar-retained partial denture offer a practical and effective solution. The custom-designed sliding attachment system provided functional stability, esthetic satisfaction, and ease of hygiene maintenance for a medically compromised patient with complex anatomical challenges.

Keywords: bar retained, implant failure, zygomatic implant

PP-180 Prosthetic rehabilitation of a patient with amelogenesis imperfecta: a case report

Elif Atasever[1], Melikşah Ural[2], Özer Işisağ[1], Özgür Doğan[2]

([1]Afyonkarahisar Health Sciences University, Faculty of Dentistry, Department of Prosthodontics, Afyonkarahisar, Turkey; [2]Afyonkarahisar Health Sciences University, Faculty of Dentistry, Department of Pediatric Dentistry, Afyonkarahisar, Turkey)

INTRODUCTION: Amelogenesis imperfecta is a rare inherited disorder affecting enamel formation and mineralisation. This disorder may cause aesthetic and functional problems, especially in patients in the growing and developing age. In its treatment, a multidisciplinary approach should be followed, considering long-term prognosis, occlusal development and psychological effects. This case report describes the prosthetic rehabilitation of a patient with amelogenesis imperfecta.

CASE: A 13-year-old male patient presented to the prosthodontics clinic with diffuse enamel defects, tooth sensitivity and aesthetic complaints. As a result of clinical and radiographic evaluations, the patient was diagnosed with hypoplastic type amelogenesis imperfecta. After the necessary periodontal, endodontic and restorative procedures were completed, prosthetic rehabilitation was planned for the patient. Monolithic zirconia restorations were designed and fabricated with computer-aided design and computer-aided manufacturing (CAD/CAM) technology after the preparation and impression procedures of the related teeth. The fabricated restorations were cemented to the prepared teeth with appropriate cementation protocols, and the treatment was completed. The patient was followed up at 1, 3 and 6 months.

Discussion: Treatment of amelogenesis imperfecta should be individualised, minimally invasive, and long-lasting. Monolithic zirconia materials, with their high durability, biocompatibility, and wear resistance properties, can be preferred, especially in prosthetic rehabilitation of young patients. CAD/CAM technology enables precise planning and rapid production in complex cases. In this case, a rapid rehabilitation process was realised by applying CAD/CAM technology. Since the patient's growth-development period was not yet completed, the restorations were designed as a single crown instead of splinting, allowing adaptation to the patient's occlusal and skeletal changes. With the monolithic zirconia restorations, the patient's functional and aesthetic requirements were met, and the quality of life was positively affected.

Keywords: Zirconia, Amelogenesis Imperfecta, Rehabilitation

PP-181 Prosthetic Rehabilitation of a Patient with Excessive Interocclusal Space Using Fiber-Reinforced Framework and Monolithic Zirconia Restorations: A Case Report

Çağlayan Sayla Çelik, Merve Çakıbay Tanış

(Department of Prosthodontics, Gazi University, Ankara,Turkey)

INTRODUCTION: Managing excessive interocclusal space in partially edentulous patients presents unique biomechanical and prosthetic challenges. Conventional metal-based Toronto bridges, though widely used, can introduce issues such as increased prosthetic weight and stress on the implants. New material alternatives, such as fiber-reinforced frameworks and monolithic zirconia restorations, offer lighter, more esthetic, and biomechanically favorable solutions.

Case Description: A 61-year-old male patient with partial edentulism was applied to the Gazi University Faculty of Dentistry, Department of Prosthodontics. Clinical and radiological examinations were performed. Teeth 22 to 27 in the maxilla and 34 to 37 and 44 in the mandible were missing. Clinical examination revealed excessive interocclusal space, which complicated prosthetic planning.Three implants were placed in the maxilla and two in the mandible. Closed-tray impressions were taken, followed by the selection of multi-unit abutments. Open-tray impressions were then obtained using splinted copings. A PMMA provisional restoration was used to confirm occlusal relationships and framework fit. Due to concerns about weight and space, a fiber-reinforced composite substructure was fabricated. Monolithic zirconia restorations were designed and cemented on to the frameworks. Final occlusal adjustments and shade corrections were made before delivery. The frameworks were screw-retained and the zirconia superstructures were cemented intraorally.

CONCLUSION: The combination of fiber-reinforced frameworks with monolithic zirconia restorations offered a predictable and lightweight alternative to traditional metal-based designs. This approach proved effective in managing excessive interocclusal space, ensuring both functional and esthetic success. The patient reported high satisfaction, and no complications were observed during follow-up. This case supports the use of alternative materials in complex implant-supported restorations.

Keywords: fiber reinforced framework, monolithic zirconia, occlusion

PP-182 Prosthetic rehabilitation of a patient with polydiastema and open bite

Muhammet Ali Kemahlı, Meral Arslan Malkoç

(Department of Prosthodontics, Akdeniz University, Antalya, Turkey)

INTRODUCTION: An open bite is a condition in which there is no vertical occlusion between the anterior teeth in centric occlusion. It can result from many factors, such as imbalanced activity of the jaw muscles and abnormal tongue pressure. The etiology of an open bite can be skeletal or tooth-related. A diastema is a condition in which there is more space between the teeth than there should be. Diastemas in the maxillary anterior region cause aesthetic concerns in patients.

CASE PRESENTATION: A 35-year-old female patient presented with complaints of gaps between her upper and lower front teeth and spaces between her teeth. Orthodontic and prosthetic treatment options were explained to the patient. At the patient's request, prosthetic treatment was planned for the upper and lower 12 teeth. Due to the patient's open bite and diastemas, minimal tooth preparation was performed and a permanent impression was taken. The PMMA crowns were tried in during the next session to see if they met the patient's expectations. Various adjustments were made, and the PMMA crowns were temporarily cemented to the patient. The final restorations were prepared from zirconium-based porcelain and cemented with resin cement.

Discussion: Dental malocclusions such as openbite and diastema cause aesthetic concerns in patients. In the treatment of these patients, the amount of preparation, material selection, color, and prosthesis design play a major role in meeting the aesthetic expectations of patients. Additionally, it is important to consider the applicability of orthodontic treatment in addition to prosthetic treatment in these patients and to guide them according to their wishes.

Keywords: openbite, polydiastema, zirconium

PP-183 Prosthetic Rehabilitation of a Patient with Severely Reduced Occlusal Vertical Dimension: A Case Report

Aysenur Kara[1], Nurten Baysal[2]

([1]Department of Prosthodontics, Faculty of Dentistry, Ankara Medipol University, Ankara, Turkiye; [2]Department of Prosthodontics, Gulhane Faculty of Dentistry, University of Health Sciences, Ankara, Turkiye)

Introduction: The loss of occlusal vertical dimension (OVD), often due to generalized tooth wear and loss of posterior support, can impair facial esthetics, speech, and masticatory function. Proper rehabilitation requires careful diagnosis and planning. This clinical report presents the prosthetic management of a 53-year-old male patient with severe OVD loss.

Case Description: A 53-year-old male patient was referred to the clinic with complaints of impaired masticatory function and unsatisfactory esthetic appearance. Radiographic and intraoral examinations revealed a loss of vertical dimension, advanced attrition affecting both anterior and posterior teeth, and partial edentulism in the maxillary and mandibular arches. Teeth numbered 16, 34, 35, 36, and 37 were found to be over-erupted due to the absence of opposing dentition and were deemed unrestorable. Tooth 32 was extracted because of a periapical lesion. A treatment plan was formulated involving fixed partial dentures with a 3 mm increase in OVD. Teeth numbered 11, 12, 13, 14, 15, 21, 22, 23, 27, 33, 43, 44, and 48 were prepared, and the vertical dimension was re-established using provisional restorations. The patient's adaptation to the new vertical dimension was monitored over a five-week period. Following a successful adaptation without any signs of muscular fatigue or temporomandibular joint discomfort, definitive metal-ceramic restorations were fabricated and delivered. The patient remained highly satisfied with the treatment outcome.

Discussion: Rehabilitation of reduced OVD requires a multidisciplinary strategy focused on functional stability. The provisional phase is vital to assess neuromuscular adaptation and ensure treatment predictability. In this case, the patient adapted well to the increased OVD, with improvements in esthetics, articulation, and comfort. This report emphasizes the importance of individualized planning, provisional restorations, and patient-centered evaluation for successful full-mouth rehabilitation.

Keywords: occlusal vertical dimension, attrition, provisional restorations, metal-ceramic restorations.

PP-184 Prosthetic Rehabilitation of a Patient With Vertical Dimension Loss Due to Attrition

Mustafa Onur Büyükaşık, Kubilay Barutcigil

(Department of Prosthodontics, Akdeniz University, Antalya, Turkey)

INTRODUCTION: Tooth wear is a condition characterized by the loss of dental hard tissue unrelated to caries. The underlying causes vary depending on the type of wear, and treatment options differ accordingly. In cases requiring an increase in occlusal vertical dimension (OVD), options include crown lengthening, surgical repositioning of the alveolar bone, fixed prosthodontic treatments, and cast overlay removable prostheses. This case report presents the rehabilitation of a patient needing vertical dimension increase, focusing on adaptation with provisional crowns and subsequent definitive prosthetic treatment.

Case Description: A patient presenting with partial tooth loss was found to have significant structural loss due to attrition and a decreased OVD. Due to a distal-extension edentulous area in the upper right posterior region, implants (NucleOSS, Turkey) were placed in the regions of teeth 16 and 17. During the osseointegration period, the OVD was increased to allow adaptation of the masticatory muscles and temporomandibular joint. Before tooth preparation, the patient's rest vertical dimension and OVD were measured using the Niswonger method, revealing a 6 mm interocclusal space. After confirming the centric relation, a jig was fabricated using impression compound (KERR) to leave a 2 mm interocclusal space at the new OVD. The remaining teeth were prepared accordingly. A digital impression (Primescan, Dentsply Sirona) was taken, and provisional restorations were fabricated. The patient was monitored throughout the healing period. After osseointegration, zirconia restorations were placed. The patient was recalled for follow-ups at 1 week, 1 month, and 6 months.

Discussion: In OVD reconstruction cases, prosthetic treatment should be completed after the patient has adapted to the new vertical dimension. PMMA provisionals played a key role in this process, supporting both functional and esthetic needs until definitive restorations were delivered.

Keywords: Occlusal Vertical Dimension (OVD), Provisional Crowns, Zirconia Restorations, Attrition

PP-185 Prosthetic Rehabilitation of a Severely Resorbed Maxilla with Sinus Pneumatization: A Clinical Case Report

Pelin Sarı, Giray Bolayır

(Department of Prosthodontics, Sivas Cumhuriyet University, Sivas, Turkey)

INTRODUCTION: Prosthetic rehabilitation of implants placed at an angle may pose challenges in achieving ideal aesthetic and functional outcomes with standard abutments. In the posterior maxilla, bone resorption and sinus pneumatization often lead to angled implant placement. In such cases, custom abutments improve control over the access path, retention, and esthetics.

Case Report: A 60-year-old male patient presentedwith aesthetic and functional complaints due to complete edentulism in both jaws. Clinical and radiographic evaluations revealed severe bone loss in the posterior maxilla. Dueto insufficient cortical bone volume for a sinus lift procedure, tilted implant placement was chosen to minimize the risk of sinus perforation. A total of 12 implants were placed — 6 in the mandible and 6 in the maxilla — without any intraoperative complications.

Following osseointegration, closed-tray impressions were taken using type A silicone. The implant angulations were evaluated, and it was determined that standard angled abutments and multi-units were inadequate for the maxillary implants. Custom cement-retained abutments were indicated for implats in positions 15,25,33,34 and 36. Pattern resin was used to splint open-tray impression posts, and a definitive impression was taken using a custom tray. Record bases were fabricated, and vertical dimension and centric relation were registered.

The models were digitized, and custom abutments with appropriate angulation, length, and diameter were designed using CAD/CAM technology. After intraoral evaluation of the abutments, metal substructures were fabricated with confirmed passive fit. In the following session, dentin trial was performed, and occlusion and vertical dimension were verified. In the final appointment, the abutments were torqued to manufacturer-recommended values, and the prostheses were cemented using conventional polycarboxylate cement.

Discussion: In this case, standard prosthetic components were insufficient dueto implant angulation. Custom abutments enabled a prosthetically favorable access path and functional and esthetic integration with surrounding tissues, demonstrating their value in complex implant-supported restorations.

Keywords: custom abutment, angle abutment, angle implant placement, sinus pneumotization, bone resorption, full-arch rehabilitation

PP-186 Prosthetic rehabilitation of an anterior open bite case with porcelain laminate veneers: A case report

Aslı Delice

(Department of Prosthetic Dentistry, Marmara University, Istanbul, Turkey)

INTRODUCTION: The treatment of functional and morphological disorders associated with open bite depends on the growth and development stage. While dental open bites can be managed with orthodontic and prosthetic interventions, skeletal cases often require a combination of orthognathic surgery, orthodontics, and prosthetic rehabilitation to achieve optimal esthetic and functional outcomes. This report presents the prosthetic rehabilitation of two anterior open bite cases using porcelain laminate veneers and discusses their treatment outcomes.

Case Description: Achieving esthetic success in the anterior region depends on proper diagnosis, comprehensive treatment planning, and coordination between clinical and laboratory steps.

Case 1: A 45-year-old male patient with skeletal anterior open bite was presented with all treatment options. Upon the patient's refusal of orthodontics, a prosthetic approach was planned. After digital impressions, a mock-up was fabricated (Unifast III, GC Europe, Leuven, Belgium), and 12 laminate veneers with 12 on-top veneers were planned. Tooth preparations were scanned using an intraoral scanner (TRIOS, 3Shape, Copenhagen, Denmark). For teeth 13–23 and 33–43, BL4-shade medium translucent lithium disilicate ingots (e.max, Ivoclar Vivadent AG, Liechtenstein) were used with the cut-back technique. The remaining veneers were stained using a characterization kit. All restorations were cemented with light-cure resin cement (G-Cem One, GC Corporation, Tokyo, Japan).

Case 2: A 15-year-old female patient with dental anterior open bite received laminate veneers on teeth 12, 11, 21, and 22. After analog impressions, preparations were guided by the mock-up (Unifast III). A1 MT lithium disilicate ingots (e.max) were used with the cut-back technique, and the veneers were cemented using light-cure resin cement (G-Cem One).

Discussion: Follow-up at 3, 6, and 12 months confirmed preservation of soft tissue and dental health. Porcelain laminate veneers offer a functionally and esthetically satisfactory rehabilitation when appropriately indicated in anterior open bite cases.

Keywords: Anterior Open Bite, Prosthetic Restoration, Aesthetic Dentistry, Porcelain Laminate Restorations, CAD/CAM Technology

PP-187 Prosthetic Rehabilitation of An Edentulous Patient With Cleft Lip and Palate: A Case Report

Doğu Ömür Dede[1], Asiye Yavşan[2]

([1]DDS, PhD, Professor, Department of Prosthodontics, Faculty of Dentistry, Ordu University, Ordu, Turkey; [2]Research Assistant, Department of Prosthodontics, Faculty of Dentistry, Ordu University, Ordu, Turkey)

INTRODUCTION: Edentulism should be prosthetically rehabilitated by removable or fixed partial dentures (FPD). However, the teeth positions, anatomical limitations and occlusion problems complicated to implement conventional prosthetic designs for edentulism with cleft lip and palate cases. In the present case report, a contemporary FPD digital treatment protocol has been presented for an edentulous patient with a cleft lip and palate.

Case Description: A 20-year-old female patient with a history of cleft lip and palate has been referred to our clinic. After the clinical and radiographic examinations, an edentulism with neighbouring advanced tooth malpositions in the maxillary anterior region due to the incomplete cleft lip and palate reconstruction has been determined. While a guided bone regeneration (GBR) procedure was applied to reconstruct deficient alveolar bone, a stable foundation has not been achieved to place dental implants. After the neighbouring malpositioned teeth were prepared using a chamfer margin configuration, a FPD with digital workflow was applied using partially veneered monolithic zirconia material with the help of real-view photography (2D) and preoperative additional scan data (3D) guidance. An adhesive bridge was also fabricated for the deciduous 71-numbered tooth using the same workflow and materials.

Discussion: The aesthetic and functional expectations of the patient have been satisfied, and no complications were detected during the 6-month follow-up. This fully digital contemporary FPD practice may improve the aesthetic and functional results of prosthetic rehabilitation of cleft lip and palate cases with unfortunate reconstruction. The application of pink porcelain was particularly effective in masking elongated crown proportions and restoring visual harmony.

Keywords: Edentulism, cleft lip and palate, digital workflow, monolithic zirconia

PP-188 Prosthetic Rehabilitation of Anterior Gingival Hyperplasia with a Multidisciplinary Approach:A Case Report

Osman Kaya[1], Esra Talay Çevlik[1], Goknil Alkan Demetoglu[1], Beral Afacan[2], Utkucan Budak[2]

([1]Department of Prosthodontics, Aydın Adnan Menderes University, Aydın, Turkey; [2]Department of Periodontology, Aydın Adnan Menderes University, Aydın, Turkey)

İNTRODUCTİON: Biological incompatibility of dental restorations, marginal discrepancies, or poor oral hygiene can lead to pathological outcomes such as inflammation or hyperplasia. Gingival hyperplasia, particularly in the anterior region, is a condition that adversely affects patient satisfaction from both aesthetic and functional standpoints. This case report presents the aesthetic rehabilitation of a patient using zirconia restorations following periodontal treatment for anterior gingival hyperplasia.

CASE DESCRİPTİON: A 30-year-old systemically healthy female patient presented to our clinic with aesthetic concerns related to gingival overgrowth in the maxillary anterior region. Intraoral and radiographic examinations revealed fractured and ill-fitting zirconia restorations in the anterior segment. After periodontal evaluation, a comprehensive treatment plan was formulated to replace the restorations with new zirconia restorations. Alveoplasty and gingivectomy procedures were performed in the periodontology clinic, resulting in healthy and esthetically contoured gingival tissues. Following refinement of the tooth preparations, digital impressions and occlusal records were obtained using an intraoral scanner. The restorations were digitally designed in our clinic using CAD software, and a vestibular cut-back technique was employed to enhance the aesthetic results. The zirconia restorations were subsequently fabricated and adhesively cemented using resin cement.

DİSCUSSİON: Multidisciplinary approaches play a vital role in achieving both aesthetic and functional success in the management of gingival complications resulting from the marginal and biological incompatibility of restorations. The surgical treatment of gingival hyperplasia through alveoplasty and gingivectomy facilitated the recontouring of the gingival architecture, creating a biologically sound foundation for prosthetic rehabilitation. The incorporation of digital impressions and CAD/CAM-assisted manufacturing increased the accuracy of the prosthetic phase, while the vestibular cut-back design contributed to achieving highly aesthetic outcomes closely resembling natural dentition.

Keywords: Zirconium Oxide, Gingival Hyperplasia, Computer-Aided Design, Prosthodontics

PP-189 Prosthetic Rehabilitation of Maxillary Edentulism with Implant Overdenture and Mandibular Fixed Prosthesis: A Clinical Case

Mustafa Şimşek, Nagehan Baki

(Department of Prosthodontics, Inonu University, Malatya, Turkey)

INTRODUCTION: Tooth loss is the final stage of chronic oral diseases and a significant global public health issue. Edentulism impairs masticatory and phonetic functions and negatively affects patient's self-confidence and psychosocial well-being due to the loss of facial esthetics. Implant-supported prostheses offer advantages over conventional dentures by protecting alveolar bone, improving stability and enhancing occlusal precision, which results in better masticatory efficiency and patient satisfaction.

Case Description: A 62-year-old female presented with complete upper tooth loss (except tooth 17) and functional limitations in the lower jaw. After clinical and radiological evaluation, four implants were decided to place in the maxilla and an overdenture prosthesis was planned for the patient's preference. A fixed prosthesis supported by teeth and implant was planned for the mandible. Three months after implantation, the remaining natural teeth were prepared to support the fixed prosthesis. The prosthetic phase included multiple appointments for impressions, abutment selection, and trial fittings, culminating in delivery of the definitive restorations. Patient comfort, function, and esthetics were closely monitored throughout.

Discussion: Managing edentulism, especially in elderly patients, is challenging due to anatomical and functional factors and patient preferences. This case demonstrates the benefits of combining a maxillary implant-supported overdenture with a mandibular tooth- and implant-supported fixed prosthesis. The treatment underscores the importance of personalized planning and flexible prosthetic solutions tailored to individual needs. The patient reported high satisfaction with both esthetics and function.

Keywords: Edentulism, overdenture, personalized treatment planning

PP-190 Prosthetic Rehabilitation of Maxillofacial Defects: Two Case Reports

Osman Kurt[1], İbrahim Fuad Kadiroğlu[2], Şükriye Ece Geduk[1], GAYE SAĞLAM[1]

([1]Zonguldak Bülent Ecevit University Faculty of Dentistry, Department of Prosthodontics, Zonguldak, Turkiye; [2]Zonguldak Bülent Ecevit University Graduate School of Health Sciences, Deparment of Prosthodontics, Zonguldak, Turkiye)

OBJECTIVES: Maxillofacial prostheses are employed to provide retention, stability, and support following surgical treatment of congenital or acquired maxillofacial defects. This report presents two cases with different anatomical defect sites and the respective prosthetic rehabilitation approaches.

CASE: First case A 56-year-old male patient who underwent hemimandibulectomy due to a malignant neoplasm in left retromolar trigone region referred for prosthetic rehabilitation following reconstruction with a free fibula flap. Intraoral examination revealed complete edentulism and a Class III defect according to the Cantor and Curtis classification. Considering the systemic status, anatomical limitations, and surgical history, a conventional complete denture was planned for the maxilla and a mandibular resection prosthesis for the mandible. Due to minimal mandibular deviation, guidance therapy was deemed unnecessary. Preliminary impressions were taken with alginate, followed by custom tray fabrication. Final impressions were made using medium-body polyvinyl siloxane. Vertical dimension was determined with consideration of facial scar contraction. Teeth arrangement was modified lingually due to narrowed buccal corridors, and prostheses fabricated and delivered. Second case, A 68-year-old male presented with a mass in left maxilla and diagnosed with a malignant epithelial tumor. Partial maxillectomy was performed, and patient was referred for prosthetic management. Intraoral examination showed the presence of teeth 15, 17, 33, 34, 35, 43, and 44. The defect was classified as Aramany Class II. A combination of fixed crowns and an obturator prosthesis was planned for maxilla, and a removable partial denture supported by fixed crowns for the mandible. A closed hollow bulb obturator was fabricated after isolating the defect with petroleum-soaked gauze. Following framework and try-in stages, prostheses were delivered. Post-insertion evaluation revealed minor oronasal leakage, necessitating feeding support.

CONCLUSION: Maxillofacial and removable prosthetic applications provided functional restoration and patient satisfaction. Hygiene protocols and follow-up at 3, 6, and 9 months were explained in detail.

Keywords: Mandibulectomy, Maxilofacial Prosthesis, Obturator Prosthesis, Maxillectomy

PP-191 Prosthetic Rehabilitation Of Patients With Extreme Vertical Dımension Loss: Case Presentation

Emre Dolay

(Department of Prosthesis, Çukurova University, Adana, Turkey)

İntroduction: Over the years, chronic trauma (attrition) and bad habits (teeth grinding) cause wear on the teeth. This wear can cause serious vertical dimension loss, occlusion disorders, and joint problems, in addition to aesthetic issues.In these patients, itis importantto plan prosthetic rehabilitation. The teeth in the mouth must be crownedto adjust the vertical dimension and occlusal rehabilitation.

Case Description: A 51-year-old male patient visited our clinic complaining of aesthetic problems and missing teeth. Examination revealed missing teeth inthe posterior region, wear on all teeth inthe mouth, and vertical dimension loss due to this wear. Treatment was planned for all of the patient's teeth with fixed prosthetic treatment and treatment of the edentulous posterior region with a removable partial denture. Due to insufficient crown length, gingivectomy and bone resection were performed. Subsequently, digital measurements were taken from the patient and a wax-up was prepared with the appropriate vertical dimension. The teeth were prepared with chamfer steps, and temporary teeth prepared from the wax-up were cemented to the patient to prevent tooth sensitivity and allow the patient to adapt to the new vertical dimension. The patient's digital impressions (3shape, trios5) were taken, andthe position of the maxilla in space was transferred to the laboratory using a face-bow. Metal and porcelain trials were performed according to the patient's new vertical dimension. Subsequently, edge shaping and functional measurements were taken using a custom tray for the removable partial denture. Occlusal adjustments were made to the removable partial dentures at the determined vertical dimension. The patient's fixed and removable dentures were delivered.

Discussion: Problems caused by atrizyed teeth are not limitedto aesthetics, but can also cause serious damage to the temporomandibular joint. At the same time, occlusion-related problems cause a decline in quality of life. In this case, the patient's posterior edentulism, vertical dimension loss, occlusal irregularities, and aesthetic problems were all resolved step by step, and the patient was treated.

Keywords: vertical, dimension, loss, case

PP-192 Prosthetic Rehabilitation of Vertical Dimension Loss Due to Bruxism-Related Attrition: A Case Report

Merve Soydan, Erva Nur Gül, Taha Yasar Manav

(Department of Prosthodontics, Hatay Mustafa Kemal University, Hatay, Turkey)

INTRODUCTION: This clinical case presents the oral rehabilitation of a patient with a reduced occlusal vertical dimension (OVD) caused by posterior tooth loss and severe anterior attrition. Functional and esthetic concerns were addressed through implant-supported and tooth-supported zirconia crowns.

Case Presentation: A 45-year-old female patient presented to the Department of Prosthodontics at Hatay Mustafa Kemal University Faculty of Dentistry with complaints of functional and aesthetic impairment and sensitivity due to missing posterior teeth and attrition in the maxillary anterior region. Upon clinical examination, dental implants were planned for teeth numbered 15, 16, 44, and 46, where posterior edentulism was noted. Due to the presence of bruxism and anterior tooth attrition, monolithic zirconia restorations were planned for ten maxillary teeth. After grafting procedures were performed to manage vertical and horizontal bone loss, the implants were successfully placed. The reduced occlusal vertical dimension was increased by 3 mm, and a 3D-printed provisional design was delivered for a 3-month adaptation period. Following this phase, the definitive restorations were fabricated using CAD-CAM technology and cemented. A bleaching procedure was performed on the patient's mandibular anterior teeth.

Discussion: Progressive tooth wear from parafunctional habits, erosion, abrasion and attrition can reduce occlusal vertical dimension (OVD), impairing function, phonation, TMJ health and aesthetics. Effective rehabilitation demands a staged approach: provisional restorations first raise OVD gradually, allowing neuromuscular adaptation, before definitive prostheses are inserted. In this case, posterior implants replaced missing teeth and a 3-mm OVD increase was introduced via 3D-printed provisionals worn for three months under close clinical review. CAD-CAM zirconia crowns were then definitively cemented, and a night guard supplied to protect against bruxism. Follow-up examinations revealed stable function and no temporomandibular joint anomalies.

Keywords: Tooth Attrition, Occlusal Vertical Dimension Rehabilitation, Dental Porcelain, Loss of Vertical Dimension, Bruxism

PP-193 Prosthetic Rehabilitation with Dental Implants in a Case of Ameloblastoma

Deniz Atak[1], Pınar Yener[2], Ayşe Aslı Şenol[3], Gühan Dergin[2], Erkut Kahramanoğlu[1]

([1]Department of Prosthodontics, Marmara University, Istanbul, Turkey; [2]Department of Oral and Maxillofacial Surgery, Marmara University, Istanbul, Turkey; [3]Department of Restorative Dentistry, Marmara University, Istanbul, Turkey)

OBJECTIVE: Vertical bone augmentation in severely resorbed jaws presents significant surgical and prosthetic challenges, necessitating a multidisciplinary treatment approach for successful rehabilitation. This case report aims to present the prosthetic workflow of occlusal screw-retained, implant-supported monolithic zirconia restorations fabricated through a fully digital workflow in a patient who underwent two-stage vertical bone augmentation following surgical excision of a mandibular ameloblastoma.

Case Presentation: A female patient presented to Marmara University Faculty of Dentistry was diagnosed with an ameloblastoma in the mandible, and the lesion was surgically excised. Following the development of a negative ridge, two-stage vertical bone augmentation was performed using autogenous block grafts harvested from the iliac crest and ramus region. After achieving sufficient bone volume, a free gingival graft (FGG) was applied for soft tissue optimization. Using a surgical guide, four AnyRidge® implants (one angled) were placed in the mandible and three in the maxilla (MegaGen Implant Co., Ltd., Gyeongbuk, South Korea). A digital impression protocol was applied for the restorations planned on multi-unit abutments in the mandible. Scan bodies were placed, and digital impressions were obtained using a Trios 4 intraoral scanner (3Shape, Copenhagen, Denmark). Based on STL data, restorations were designed digitally, virtually evaluated, and manufactured using CAD/CAM technology. Immediate temporary PMMA restorations were delivered in the mandible. Following osseointegration, screw-retained definitive monolithic zirconia restorations were delivered in both jaws using a digital workflow. In the anterior maxillary region, composite laminate restorations were applied to meet aesthetic demands. The patient was instructed regarding the maintenance and follow-up of the restorations.

CONCLUSION: This case demonstrates the clinical success of implant-supported restorations planned with advanced surgical and prosthetic protocols supported by digital workflows. The screw-retained monolithic zirconia restorations fabricated for both arches through a digital approach contributed to a shortened clinical process while achieving functional and aesthetic success.

Keywords: Ameloblastoma, Vertical augmentation, Implant, Digital impression, Monolithic zirconia

PP-194 Prosthetic Rehabilitation With Fully Digital Workflow in Esthetic Zone Implants: A Report of Three Cases

Berke Sezal Erginer, Sinem Vural, Buket Evren

(Department of Prosthodontics, Marmara University, Istanbul, Turkey)

INTRODUCTION: Due to the develpoments in digital technology, prosthetic rehabilitation of implants in the esthetic zone has become easier. Noawadays, intraoral scanners provide accurate digital impresssions at both implant and abutment levels. Furthermore, digital impressions enable integrated shade selection and detailed soft tissue documentation. This report presents three anterior implant cases managed with a fully digital workflow, including missing one or two incisor teeth.

Case Description: Three anterior cases were restored using a fully digital approach.

Case 1 involved a single central incisor restored by using an implant-level scanning.

Case 2 is restored with an implant-level scanning a lateral incisor.

Case 3 involved two maxillary lateral incisors with immediate loading, both restored by using implant-level scanning. In each case, shade selection was performed using an intraoral scanner. Customized healing abutments and provisional restorations were used to shape the gingival profile prior to the final scan. All definitive prosthesis were designed and fabricated using CAD/CAM technology with no conventional impressions. The material chosen for the restorations are lithium dislicate and multilayered zirconia.

Discussion: The digital workflow provided accurate impressions, reliable shade matching and predictable gingival outcomes for all cases. Intraoral scanning allowed flexible and more comfortable digital impressions at the implant or abutment level depending on clinical needs. Soft tissue management is provided by using provisional prosthesis to achive natural emergence profiles. All restorations demonstrated excellent esthetics and patient satisfaction. These results confirm that reliability and efficiency of a fully digital approach, even in complex anterior cases involving non-adjacent teeth, provide a satisfying treatment option.

Keywords: Digital workflow, intraoral scanner, anterior implants, CAD/CAM, shade selection

PP-195 Prosthetic Rehabilitation With Removable Partial Dentures in Partial Edentulism

Negar Sarlak

(istanbul university)

INTRODUCTION: Removable partial denture (RPD) rehabilitation in patients with partial tooth loss can pose challenges in terms of esthetics, phonation, and function. This case report details the periodontal surgery and prosthetic rehabilitation of a patient with partial edentulism in both the maxilla and mandible.

Case Presentation: A 38-year-old female patient presented to the Department of Prosthodontics at Istanbul University Faculty of Dentistry with complaints of esthetic and functional deficiencies due to partial tooth loss in both jaws. Following a multidisciplinary evaluation involving both prosthodontic and periodontal surgery teams, and based on the patient's preferences, a treatment plan was established. The remaining healthy teeth were crowned, while the edentulous areas were restored with removable partial dentures. The lost vertical dimension was re-established and stabilized using the untreated natural teeth in the 25 and 35 regions. In the maxilla, metal-ceramic crowns with precision attachments were used for esthetic purposes, completing the prosthetic rehabilitation.

Discussion and CONCLUSION: As the patient was not a suitable candidate for implant therapy, the use of a removable partial denture with precision attachments preserved the existing healthy teeth, addressed esthetic concerns, and restored function. No periodontal or prosthetic complications were observed during the 6-month follow-up period.

Keywords: Removable Partial Prosthetic, Edentulism, prosthetic Rehabilitation

PP-196 Prosthodontic Rehabilitation of a Patient With Ectodermal Dysplasia: A Case Report

Fatma Betül BOZAN, Ömer YETGİN, ayşe meşe

(Department of Prosthodontics, Dicle University, Diyarbakır, Turkey)

INTRODUCTION: Ectodermal dysplasia is a hereditary disorder characterized by dysplasia of ectodermally derived tissues such as hair, nails, teeth, and skin. The findings directly relevant to dentistry include delayed tooth eruption and the presence of either no teeth or hypodontia. Due to tooth agenesis, the alveolar structure may fail to develop, resulting in vertical dimension loss. Consequently, protruding lips and an indistinct vermilion border are clinical features that contribute to the differential diagnosis of the disease. The oral mucosa is dry, and the existing anterior and premolar teeth typically have conical crowns. This case report describes the prosthetic rehabilitation of a patient with ectodermal dysplasia.

CASE: A 18-year-old female patient presented to the prosthodontics clinic with severe hypodontia, persistent primary teeth, a reduced vertical dimension of occlusion of the lower third of the face, a slightly dry and sticky oral mucosa. The facial profile showed a sunken nasal bridge and averted lips. She exhibited the classical features of HED including diffusely sparse hair, eyelashes and eyebrows, severe hypohidrosis and dry skin. Considering the clinical situation and radiographs, maxillary full fixed dentures were determined to be the treatment of choice and a removable partial denture was planned for the mandible. The occlusion and positions of crowns were evaluated intraorally, necessary corrections made with conservative treatment. The patient was allowed to get used to his new occlusion with temporary restorations. Permanent restorations were prepared and cemented. During the post-delivery follow-up processes, it was observed that the patient was highly satisfied. The patient was followed up at 1, 3 and 6 months.

CONCLUSION: In addition to providing the function and aesthetics of the patient, the treatment has also positively influenced the social psychology and self-confidence

Keywords: Ectodermal dysplasia, Hypodontia, Dental occlusion

PP-197 Prosthodontic rehabilitation of anterior polydiastema:A case report

Etem Tayfun Gökşen, Ayşe Meşe, Elif Gamze Yıldız

(Department of Prosthodontics, Dicle University, Diyarbakır, Turkey)

INTRODUCTION: Polydiastemas in the anterior region are common clinical problems that may negatively affect patients both aesthetically and psychosocially, especially in young individuals. This case report presents the aesthetic rehabilitation of a young male patient with multiple diastemas in the maxillary anterior region using zirconia crowns.

CASE: A 25-year-old male patient presented to our clinic complaining about the spaces between his upper anterior teeth. He had no systemic diseases. After clinical and radiographic examinations, a fixed prosthetic approach was preferred instead of orthodontic treatment, considering the patient's desire for rapid aesthetic results.

The teeth were digitally analyzed regarding position, occlusal relationships, and smile design. Tooth preparation was performed minimally invasively. Temporary restorations were used for aesthetic preview. Monolithic zirconia crowns with high translucency were fabricated. After several try-ins to confirm aesthetic and functional harmony, the final restorations were cemented using resin-modified glass ionomer cement.

CONCLUSION: The prosthetic rehabilitation of anterior polydiastemas can be achieved successfully with careful case selection and appropriate material choice. This case demonstrates that zirconia crowns offer an effective, aesthetic, and conservative treatment modality for closing multiple diastemas in the anterior region, enhancing both patient satisfaction and oral function.

Keywords: Polydiastema, Zirconia crown, Anterior esthetics, Prosthodontic rehabilitation, Ceramic restorations

PP-198 Prosthodontic Rehabilitation of Pseudo Class III Malocclusion Associated with Occlusal Vertical Dimension Loss: A Case Report

Cem Bayıl[1], Bora Akat[1], Gizem Hanoglu[2]

([1]Departmant of Prosthodontics, Ankara University, Ankara, Turkey; [2]Departmant of Endodontics, Ankara University, Ankara, Turkey)

İntroduction: This clinical report presents the prosthodontic management of a 40-year-old female with pseudo class III malocclusion characterized by anterior reverse articulation due to loss of occlusal vertical dimension (OVD).

Case Description: A 40 year old female patient was referred to the Prosthodontic Department of Ankara University with chief complaints of poor mastication and esthetics. Her medical history was noncontributory. Dental history revealed the extraction of teeth 13, 17, 23, 27, 37 and 46 along with multiple existing restorations. The patient was referred to an orthodontist. Cephalometric analysis confirmed pseudo class III malocclusion. Temporomandibular joint MRI was performed and archived for post-treatment comparison. Clinical and radiographic evaluation revealed a complete anterior crossbite with a −3 mm reverse overjet and 2 mm mandibular midline deviation. Reduced lower facial height and limited restorative space indicated OVD loss. Confirmed by an intergingival measurement of 13 mm per Abduo's criteria. A 6 mm anterior increase was planned. As OVD was restored, anterior crossbite was corrected, and anterior guidance was reestablished. Centric relation was recorded using bimanual manipulation and a Lucia jig. A mutually protected occlusal scheme was adopted. Teeth 31–36, 41–45, and 47 were prepared for full-coverage crowns; mandibular anterior teeth underwent endodontic therapy due to pulp perforation. Maxillary central/lateral incisors, premolars, and first molars were restored with PFM crowns. After three months with temporary restorations, the patient remained asymptomatic. Final restorations were fabricated at the established OVD. One-year follow-up showed stable function with no temporomandibular joint disorder.

This case report demonstrates that a forward functional shift of the mandible can be effectively managed with accurate diagnosis and planning. Accurate diagnosis and individualized treatment planning based on dental and skeletal relationships are essential for long-term success.

Keywords: occlusal vertical dimension,pseudo classiii, MRI

PP-199 Provisional Restorations to Enhance Soft Tissue Contours for Anterior Implant Restorations: A Case Report

Hazal Deniz Aydın, Şevki Çınar, Bike Altan Çınar

(University of Health Sciences, İstanbul, Turkey)

INTRODUCTION: The goal of implant-supported restorations extends beyond achieving osseointegration and biomechanical stability; it also includes restoring esthetics and function. Ideally, precise implant placement and soft tissue management during surgery allow for optimal peri-implant contours using provisional restorations. However, in this case, additional periodontal intervention was needed after surgery to refine the gingival architecture and achieve an ideal emergence profile before final prosthetic rehabilitation.

Case Description: In this clinical case, dental implants (Dyna Dental, Holland) were placed in positions 13 and 23 of a 21-year-old female patient. Upon follow-up evaluation three months postoperatively, the emergence profiles of the implants were found to require soft tissue leveling for optimal esthetic and functional outcomes. Consequently, the patient was referred to the Department of Periodontology for gingivectomy utilizing a 450 nm diode laser (Woodpecker, China). Following the laser-assisted gingival recontouring, provisional crowns were deemed necessary to guide and support the desired gingival architecture during healing. For this purpose, chairside-fabricated provisional restorations were digitally designed and manufactured using a 3D printing system (Dentsply Sirona, Primescan–Primeprint, USA) and subsequently luted onto peek abutments with a temporary cement (Detax Implantlink Semiforte, Germany). The patient was monitored through regular clinical follow-ups, and after one month, definitive restorations were delivered. The final prostheses were fabricated from monolithic zirconia blocks (LabCera Dental Zirconia Blank, Turkey), providing a durable and esthetically favorable outcome.

Discussion: This case underscores the importance of provisional restorations in shaping peri-implant soft tissues when ideal contours are not achieved surgically. Laser-assisted gingivectomy combined with customized temporary crowns enabled the development of a natural emergence profile. A digital, chairside workflow ensured efficiency and precision. The outcome demonstrates the value of a multidisciplinary approach in achieving esthetic success in anterior implant cases.

Keywords: Peek abutment, provisional restoration, gingivectomy, implant, aesthetic

PP-200 Quality of life of patients with maxillectomy – preliminary study

Lenka Vavrickova[1], Jan Schmidt[1], Hana Hubalkova[2], Marie Bartonova[3], Jindrich Charvat[4]

([1]Faculty of Medicine in Hradec Kralove, Charles University and University Hospital in Hradec Kralove, Hradec Kralove, Czech Republic; [2]First Faculty of Medicine, Charles University and General University Hospital in Prague, Prague, Czech Republic; [3]Private Dental Office DMD, Prague, Czech Republic; [4]Private Dental Office Statenice, Czech Republic)

OBJECTIVES: Patients who undergo maxillectomy due to cancer in the orofacial region often face many unpleasant consequences. Conventional obturator prostheses following resection procedures in the oral cavity can improve the patients' quality of life, particularly by addressing difficulties with food and fluid intake, speech and articulation, and facial aesthetics after surgery. The aim of this study was to evaluate the quality of life in patients before and after the insertion of an obturator following maxillectomy.

MATERIALS-METHODS: Three patients (two men and one woman) who had undergone maxillectomy received the standardized European Organisation for Research and Treatment of Cancer (EORTC) QLQ – H&N43 questionnaire, once before the obturator was fabricated and again eight weeks after delivery. The 55 questions were divided into nine categories to assess changes in pain, wound healing, chewing and swallowing, food intake, body weight, phonation, appearance, social interaction, and psychological difficulties. Responses of "not at all," "a little," "moderately," and "very much" were scored as 0; 33.333; 66.666; and 100, respectively.

RESULTS: Patients reported a pain score of 35.56 before the obturator and 31.11 after. Wound healing was scored 15.28 before and 11.11 after, chewing and swallowing 38.28 before and 44.45 after, food intake 63.89 before and 41.67 after, and problems with weight change 33.33 before and 11.11 after. Phonation was rated 83.33 before and 38.89 after, appearance 51.85 before and 44.44 after, social interaction 41.67 before and 13.89 after, and psychological difficulties 46.03 before and 12.70 after.

CONCLUSIONS: Despite the small number of participants, it is evident that obturator prostheses improve the quality of life for patients. The greatest improvements were observed in phonation, social interaction, and psychological well-being. However, chewing may remain problematic, especially in edentulous jaws post-maxillectomy, where reduced denture-bearing area may significantly impair obturator adhesion.

Keywords: maxillectomy, obturator, quality of life, (EORTC) QLQ – H&N43

PP-201 Rehabilitation of a Complete Edentulous Maxilla with Toronto Hybrid Prosthesis: A Case Report

Kader Canlı, Safa Özden

(Department of Prosthodontics, Faculty of Dentistry, Afyonkarahisar Health Sciences University, Afyonkarahisar, Turkey)

INTRODUCTION: Implant-supported hybrid prostheses are among the commonly preferred treatment options for complate edentulous arches. In hybrid prostheses, the substructure materials can be designed in various ways according to the specific needs of the case. The Toronto framework design was developed to minimize the individual disadvantages of screw- and cement-retained restorations while combining the advantages of both systems.

CASE: A 58-year-old female patient applied to Afyonkarahisar Health Sciences University, Faculty of Dentistry, Department of Prosthetic Dentistry for prosthetic treatment. The patient had 4 implants placed in the maxilla with the posterior implants angled distally and 6 implants placed in the mandible. A screw-retained restoration was planned. Multi-unit abutments were selected according to the soft tissue height and implant angulations. However, in the anterior maxilla, due to insufficient soft tissue height in two implant sites, no suitable angled abutment was available among the existing options, and straight abutments were used instead. Closed- and open-tray impressions were taken from the patient. During the PMMA trial, it was observed that the screw access holes emerged from the vestibular side in the esthetic zone. Therefore, the Toronto framework design was preferred. A Co-Cr substructure was fabricated in the laboratory and tried in intraorally. Metal-ceramic crowns were produced and cemented onto this framework.

Discussion: One of the most significant advantages of Toronto-type prostheses is the ability to manage the emergence profile of implants. This allows for the elimination of screw access openings in esthetically critical areas. In this case, due to the vestibular emergence of screw access holes in the esthetic zone, a Toronto hybrid prosthesis was chosen and both the functional and aesthetic requirements of the patient were successfully met.

Keywords: Hybrid prosthesis, Toronto framework, All-on-Four, implant angulation, esthetics

PP-204 Rehabilitation of a partial nasal defect with a rhinal ala retractor supported epithesis: a case report

Kubilay Şengül[1], Serap Beşiroğlu[1], Pınar Yener[2], Faysal Uğurlu[2], Rifat Gözneli[1]

([1]Department of Prosthodontics, Marmara University, Faculty of Dentistry, Istanbul, Turkey; [2]Department of Oral and Maxillofacial Surgery, Marmara University, Faculty of Dentistry, Istanbul, Turkey)

INTRODUCTION: The face is the most prominent part of the body. Nasal defects can lead to the most significant cosmetic one among facial defects. These defects are treated either surgically or prosthetically, whereas, surgical interventions may not be applicable to all cases. As an alternative, prosthetic reconstruction of nasal defects is faster and can realistically mimic the missing facial structure. The aim of this case report was to present the rehabilitation of a partial nasal defect patient with an implant-supported Rhinal Ala retractor bar-retained nasal epithesis.

Case Description: A prosthetic treatment was planned for a 77-year-old male patient who underwent partial nasal resection due to a squamous cell carcinoma at the right nasal region. Implant-supported bar attachment -with a Rhinal Ala retractor- retained nasal epithesis were planned to be fabricated. Two intraosseous implants were placed into the anterior maxilla on both sides of the nasal septum. A conventional facial impression was made providing support to the unsupported soft tissue parts. After fabrication of the gypsum cast, it was scanned to have the digital cast. A bar framework between 2-implants with a cantilever Rhinal Ala retractor at the unsupported soft tissue side was designed. After the digitally fabricated bar with the cantilever retractor was tried-in, the partial silicone epithesis was made using an intrinsic coloring technique for providing symmetry and fit. Final adjustments and a protective coating were completed before the delivery. The first follow-up was conducted after 3-months. The patient reported no complaints and expressed continued satisfaction with the nasal epithesis.

Discussion: In comparison with total nasal defects, achieving aesthetics in partial ones is quite challenging due to difficulty in masking the borders of epithesis, and unsupported nasal soft tissues. The Rhinal Ala retractor supported partial nasal epithesis was found to be satisfactory in aesthetics.

Keywords: Epithesis, Partial nasal defect, Rhinal Ala retractor

PP-205 Rehabilitation of a Partially Edentulous Patient with Toronto Hybrid Prosthesis: A Case Report

Burçak Gürpınar, Pınar Çevik, Günseli Sıla Şahin, Neşet Volkan Asar

(Department of Prosthodontics, Gazi University, Ankara, Turkey)

INTRODUCTION: Rehabilitation of edentulous arches with implant-supported prostheses aims to restore function and esthetics. The Toronto prosthesis, characterized by a screw-retained metal framework with veneered teeth and gingival material, allows passive fit and simplified maintenance. Restoration choice depends on interarch space and occlusal vertical dimension (OVD). This case report describes prosthetic treatment of a partially edentulous patient rehabilitated with a Toronto hybrid prosthesis supported by implants.

Case Description: A 52-year-old male patient presented for prosthetic rehabilitation after receiving 5 implants in the maxilla and 6 implants in the mandible. The patient retained natural teeth #17 and #38 and had a fixed implant-supported restoration on #26–27. After assessing interarch space and OVD, a Toronto-type prosthesis supported by multi-unit abutments was planned. Existing restorations on #26–27 and natural tooth #38 were preserved due to adequate occlusal contact and vertical dimension. Multi-unit abutments were placed, and an open-tray impression was made using splinted impression posts. Wax impressions and occlusal records were obtained. A digital design of the final prosthesis included screw hole positions and gingival height. The Toronto framework was 3D printed and tried in to verify occlusion and vertical dimension. A Sheffield passive test confirmed passive fit. The final framework was fabricated from a chromium-cobalt alloy by milling technique. Gingival porcelain was then added, and final trials were conducted with the metal framework and pink esthetics. The final restoration, made of layered monolithic zirconia, was placed successfully after comprehensive fitting and verification.

Discussion: The Toronto prosthesis offers a reliable option for restoring function and esthetics in edentulous cases. Critical factors in treatment success include accurate planning of OVD and interarch space. This case highlights the importance of digital planning and 3D printing in achieving precise prosthetic outcomes. The successful rehabilitation of this patient demonstrates the effectiveness of Toronto-type prostheses.

Keywords: Partially Edentulous, Implant-Supported Dental Prosthesis, Toronto Prosthesis

PP-206 Rehabilitation of a patient with maxillary defect with obturator: case report

Damla Su Menteş[1], Koray Soygun[1], Özgür Sürmelioğu[2]

([1]Department of Prosthodontics, Çukurova University, Adana, Turkey; [2]Department of Otorhinolaryngology, Çukurova University, Adana, Turkey)

INTRODUCTION: Maxillary defects can occur as a result of trauma, surgical resection or congenital anomalies and can significantly affect patients' functional (speech, swallowing) and aesthetic quality of life. Prosthetic rehabilitation is often the treatment of choice for such defects through obturators. In this case report, a patient with an Armany class IV defect who underwent surgical resection for ameloblastoma was rehabilitated with an obturator.

CASE DESCRIPTION: A 34-year-old male patient was admitted to our clinic after surgical resection for ameloblastoma. The patient with Armany class IV defect had complaints such as prominent nasal speech, nasal discharge of fluids and difficulty in chewing. The patient's current condition was evaluated in detail and a non-implant supported maxillary obturator was planned. An impression was taken from the patient's maxilla with irreversible hydrocolloid impression material. Working models were obtained and an obturator was produced to close the borders of the defect and provide retention and stability. The obturator was adjusted to the patient's existing teeth by bending the clasps and fitting the alveolar ridge

Discussion: This case demonstrates the effectiveness of obturators in the prosthetic rehabilitation of maxillary defects. With good planning, precise impression taking and appropriate material selection, the patient's functional deficits were significantly restored, nasal speech improved and nasal fluids were prevented. Since the obturator was a temporary obturator, it prevented the collapsed appearance of the extraoral tissues although it was prepared without teeth. In cases where implant-supported prostheses are inappropriate or costly, traditional obturators still offer a valuable treatment option. This case highlights the importance of tailoring solutions to individual patient needs in maxillofacial prosthetic rehabilitation.

Keywords: Maxillary Defect, Obturator, Prosthetic Rehabilitation, Case Report

PP-207 Rehabilitation of atrophic maxilla with zygomatic and pterygoid implants: a full-mouth reconstruction case

Ata Buğra KEŞAN[1], Doğukan Arslan[2], Bora Akat[2], Mehmet Emre Yurttutan[3]

(1Graduate School of Health Science, Ankara University, Ankara, Turkey; Department of Prosthodontics, Ankara University, Ankara, Turkey; [2]Department of Prosthodontics, Ankara University, Ankara, Turkey; [3]Oral and Maxillofacial Surgery Deparment, Ankara University, Ankara, Turkey)

A 49-year-old female patient attended the Department of Prosthodontics at Ankara University with complaints of tooth mobility, and aesthetic concerns. Clinical and radiographic examinations revealed sensitivity to percussion, dental caries, defective restorations, and bone loss, particularly in the maxilla. After evaluating the bone using cone-beam computed tomography, the treatment was planned as follows: appropriate implant sites were established in both maxilla and mandibula for the placement of a hybrid prosthesis, and implants were immediately placed following tooth extraction. For mandible 6 endosseous implants and due to maxillary atrophy 2 pterygoid implants, a zygomatic implant and 3 endosseous implants were placed in the maxilla. After a 6-month healing period, multi-unit abutments were placed at appropriate angles for endosseous implants and pterygoid implants. Due to angulation of the zygomatic implant the multi-unit could not be aligned using the prefabricated multi-unit abutments provided by the manufacturer. To produce a custom multi-unit abutment for the zygomatic implant, a conventional impression was taken. The final impression was taken after 3-week soft tissue healing. Scan bodies were placed on all implants except for custom abutment. Due to the unavailability of a compatible scan body for the custom abutment, a prosthetic screw was torqued to 15 Ncm as a guide in the digital impression. The impression was taken using the TRIOS 5 (Copenhagen,Denmark:3Shape) intraoral scanner. The dental technician adjusted the bar in the Exocad(Darmstadt,Germany:exocad GmbHk) software to match the screw channel. During the bar try-in session, the passive fit was verified using the Sheffield test and confirmed radiographically. A tooth arrangement was designed based on the digital impression, and after a successful try-in, the final hybrid prosthesis was delivered to the patient in the subsequent session.

Keywords: Custom multi-unit, Full-mouth rehabilitation, Maxillary atrophy, Pterygoid implant, Zygomatik implant

PP-208 Rehabilitation of Esthetics and Function of a Severely Worn Dentition: A Case Report

Sanem Erdoğan, Emre Artar, Başak Yalçınkaya, Rifat Gozneli

(Department of Prosthodontics, Marmara University, Istanbul, Turkey)

INTRODUCTION: Restoring lost vertical dimension of occlusion (VDO) in young patients poses a unique clinical challenge due to functional, esthetic, and neuromuscular implications. Severe dental attrition not only compromises masticatory efficiency but also negatively affects facial aesthetics and overall oral health. A systematic, phased approach using provisional restorations allows clinicians to evaluate and support the patient's neuromuscular adaptation prior to definitive treatment. This case report presented the prosthetic rehabilitation of a young male patient with significant VDO loss.

Case Description: A 20-year-old male, who had complaints of chewing difficulties, esthetic concerns, and a reduced lower facial height, applied for treatment. Clinical and radiographic evaluations confirmed significant tooth wear and VDO loss. The centric relation was recorded using a face-bow and a semi-adjustable articulator. Based on this assessment, a 12 mm increase in vertical dimension was planned. To test the patient's tolerance to the proposed increase, provisional restorations were fabricated using polymethyl methacrylate and cemented. Occlusal adjustments were performed to achieve initial functional harmony. The patient was monitored over a six-weeks period with weekly follow-ups. During this phase, occlusal contacts and muscular response were carefully evaluated, and minor refinements were made as needed. Following this successful trial phase, definitive restorations were fabricated using monolithic zirconia for anterior teeth and metal-ceramic restorations for posterior. Final occlusal contacts were established according to principles of functional guidance.

Discussion: Throughout the adaptation period, patient exhibited no signs of muscle fatigue, temporomandibular joint discomfort, or functional limitations, indicating successful neuromuscular adaptation to the increased VDO. A notable improvement in facial profile and esthetics was also achieved. This case emphasizes the importance of a gradual and controlled approach when increasing VDO. The use of provisional restorations played a critical role in assessing the patient's functional demands and satisfaction, ensuring the long-term success of the definitive prosthesis.

Keywords: Monolithic zirconia, occlusion, vertical dimension

PP-209 Rehabilitation of Full-Mouth Edentulism with Monolithic Zirconia Restorations: A Report of Three Cases

Mert Osman Demirci, ELİF Çilli, Nazli Ilay Kutuk, Ceren Küçük

(Department of Prosthodontics, Marmara Üniversitesi, İstanbul, Türkiye)

İntroduction: Currently available ceramic systems offer a wide array of prosthetic advantages, including superior esthetics and enhanced physical and mechanical properties. The dental ceramic with the highest reported mechanical properties is zirconia. This clinical report describes a full-mouth implant rehabilitation with computer-aided design/computer-aided manufacturing technology and monolithic zirconia. Different techniques can be used to design and manufacture a full-arch, implant-supported prosthesis, and different materials can be chosen for its production, each with its advantages and limitations.Veneer chipping in bilayered ceramic restorations is a current problem reported with significant frequency.Because the treatment comprised monolithic restorations, the common complications of veneer chipping were avoided.

Case Description: Patients presented to the Department of Prosthetic Dentistry at Marmara University Faculty of Dentistry with complaints of complete edentulism in both the upper and lower jaws.Following clinical and radiographic examinations, it was planned to perform implant-supported monolithic zirconia restoration. No biological, biomechanical, functional, or aesthetic complications were observed during the 1-, 3-, and 6-month clinical follow-ups. The patients were highly satisfied with the aesthetic and functional outcomes.

Discussion: This clinical report describes a full-mouth implant rehabilitation with modified monolithic zirconia fixed dental prosthesis(FDP). The main benefit from the use of monolithic zirconia was the reduced possibility of porcelain fracture due to the frameworks being designed with a monolithic zirconia occlusal surface. The insizal edges and occluding surfaces remained in monolithic zirconia.While zirconia doesn't seem to cause further antagonistic tooth wear, the effects of grinding zirconia remain unknown. Occlusal grinding could trigger the tetragonal to monoclinic phase transformation, which may compromise the mechanical properties of zirconia. This could be a potential limitation of monolithic ceramics, and hence every attempt should be made to carefully polish the external surfaced of monolithic zirconia to reduce abrazive effects

Keywords: monolithic zirconia, fixed dental prosthesis, chipping

PP-210 Rehabilitation of Function and Aesthetics with Implant-Supported and Conventional Restorations in a Patient with Ectodermal Dysplasia: A Case Report

Aybüke Çevik, Güliz Aktaş

(Department of Prosthodontics, Hacettepe University, Ankara, Turkey)

PURPOSE: Ectodermal dysplasia is a congenital ectodermal developmental disorder characterized by dental agenesis. This case report aims to restore both aesthetics and function in a patient with multiple missing teeth by utilizing implant-supported fixed restorations in the mandible and conventional restorations in the maxilla.

CASE: A 22-year-old male patient diagnosed with ectodermal dysplasia referred to our clinic with aesthetic and functional concerns. Following clinical and radiological examinations, it was planned to place four implants in the interforaminal region of the mandible, while implant treatment could not be performed in the maxilla as the patient did not desire advanced surgical procedures. To rehabilitate the maxillary dental deficiencies, metal-ceramic restorations were fabricated for teeth #16, #26, and #27, which exhibited significant structure loss. Additionally, the existing composite laminate restorations on teeth #11 and #21 were removed, and metal-ceramic restorations with precision attachments on the distal surfaces were produced. The crowned teeth served as abutments for a maxillary removable partial denture. Four dental implants were placed in accordance with prosthetic planning, for the congenital missing mandibular teeth. Subsequently, metal-ceramic restorations were fabricated on Ti-base abutments to restore the mandibular arch. After a one-year follow-up period, no complications or patient complaints were observed.

CONCLUSION: The treatment of patients with ectodermal dysplasia requires a multidisciplinary approach. In this case, the patient's functional and aesthetic expectations were met through the combination of dental and implant-supported fixed and removable prostheses.

Keywords: Ectodermal dysplasia, congenital dental agenesis, dental implant, Ti-base restoration

PP-211 Rehabilitation of Labially Malpositioned Implants Using Angled Screw Access Channel or Angulated Ti-bases: Case reports

Doğu Ömür Dede[1], Şengül ÇOLAK AYKAÇ[2]

([1]Professor, Department of Prosthodontics, Faculty of Dentistry, Ordu University, Ordu, Turkey; [2]Research Assistant, Department of Prosthodontics, Faculty of Dentistry, Ordu University, Ordu, Turkey)

INTRODUCTION: Anatomical limitations in the anterior maxilla may compromise ideal implant positioning, which limits the esthetic and functional outcomes. Sometimes monolithic ceramic restorations require complicated solutions for implant-supported fixed prosthetic restorations (ISFPR). The abutment selection and prosthetic design are critical for malposed implants. Today monolithic (one-piece) screw retained designed fixed partial dentures (FPDs) are favorable with the advantages of superior esthetic outcomes, improved stability-longevity, reduced treatment time, cost and mechanical complications with less components and fabrication procedures. Today, lots of dental implant systems offers angled screw access channel or angulated ti-base solutions to fabricate monolithic screw retained FPDs. This case report introduced the prosthetic management of labially malpositioned implants in the esthetic zone of two patients, using angled screw access channel and angulated ti-bases abutments for monolithic screw retained FPDs.

Case Description: In both cases, dental implants were immediately placed in the esthetic maxillary region using a fully guided surgical protocol without bone augmentation procedures and immediately loaded with three-dimensionally printed screw-retained interim restorations. While the permanent monolithic screw retained FPD of first case for the 23 numbered dental implant was designed using an angulated ti-base, the same type of restoration intended for the second case numbered 14 implant using screw access channel ti-base of same implant company. All ISFPDs and the damaged numbered 24tooth of the second case were restored using monolithic zirconia with polychromatic-layered and hybrid content using a fully digital workflow.

CONCLUSIONS: Both patients' aesthetic and functional expectations were satisfied. However, the use of an angled ti-base in the first case provided a wider range of prosthetic flexibility and allowed ideal labial contouring for the monolithic restoration designed, compared to the second case with an angled screw access channel ti-base, which resulted in superior aesthetic outcomes. No complications were detected for both cases during the 6-month follow-up.

Keywords: Dental implant, angled screw access channel ti-bases, angulated ti-bases, digital workflow, monolithic zirconia

PP-212 Rehabilitation of Molar-Incisor Hypomineralization Using a Veneered Zirconia Bridge: A Case Report

Irem Fatma Unaldi, Evsen Tamam

(Department of Prosthodontics, Gazi University, Faculty of Dentistry, Ankara, Turkey)

INTRODUCTION: Tooth hypoplasia is a developmental defect affecting both the quality and quantity of tooth structure. Molar-incisor hypomineralization (MIH) is a specific type, with a multifactorial etiology including local, systemic, and epigenetic factors. It is characterized by demarcated, qualitative defects of the enamel, affecting at least one first permanent molar and/or incisors. The affected enamel appears white, yellow, or brown, clearly demarcated from healthy enamel. Patients may report sensitivity to heat, cold, certain foods, toothpaste, and brushing. Treatment decisions must be based on clinical severity and patient-specific factors.

Case Report: A 36-year-old female referred to the Gazi University, Faculty of Dentistry, Department of Prosthodontics with complaints of dental hypersensitivity, missing mandibular teeth, and poor esthetics. Clinical and radiographic examinations revealed defects in the molars, mandibular lateral incisors, and canines, as well as the absence of two mandibular anterior teeth. The edentulous space was wider than normal. Based on the anamnesis, the patient was diagnosed with MIH. A veneered-zirconia fixed prosthesis was planned for the edentulous space between teeth #33 and #43. Tooth preparation was performed on the affected teeth (#32, #33, #42, #43). Due to the width of the edentulous space, an additional pontic resembling a central incisor was incorporated into the framework. Intaglio surfaces of the bridge were sandblasted to improve the micromechanical retention properties and cemented with resin-modified glass ionomer cement.

Discussion: MIH presents functional and aesthetic challenges due to affected enamel. In this case, a veneered-zirconia fixed prosthesis was chosen for its durability and aesthetic appeal. The use of resin-modified glass ionomer cement and sandblasting improved retention, particularly important in teeth with compromised enamel. The inclusion of a pontic for the edentulous space ensured functional and aesthetic restoration. This case highlights the importance of personalized treatment based on enamel defects and patient expectations.

Keywords: Molar-Incisor Hypomineralization, Enamel defects, Veneered zirconia bridge

PP-213 Rehabilitation of Partially Edentulous Patients with Hybrid Restorations:A Case Report

Melek Nur Ürün, Serdar Polat

(Department of Prosthodontics, Faculty of Dentistry, University of Gazi Ankara, Turkey)

İntroduction: In cases of partial tooth loss, there are multiple treatment options for the restoration of the edentulous space. There are various treatment methods such as tooth-supported fixed prostheses, removable partial dentures and implant-supported fixed prostheses. Implant-supported prostheses are primarily preferred because they do not require preparation of adjacent teeth and provide the patient with the comfort of a fixed prosthesis. For the treatments to be long-lasting, they must be broken by optimum force permitting within biomechanical principles. The main aim of this study is to report the rehabilitation process of a partially edentulous patient with a long interocclusal distance with implant-supported hybrid restoration based on clinical and radiological evaluations.

Case Description: A 48-year-old male patient with partial edentulism, experiencing presenting with masticatory function, was referred to the Department of Prosthodontics for prosthetic rehabilitation three months after the placement of two dental implants(Medentika, Germany) performed in the Department of Surgery. A comprehensive medical, dental, and social history was obtained from the patient, followed by clinical and radiographic examinations. As the patient's interocclusal distance was found to be suitable for an SP3-type prosthesis, a decision was made to make a hybrid restoration. The restoration was completed using a fiber-reinforced composite disc (Trinia, USA) as the substructure material and a composite block (3M Lava Ultimate,USA) as the superstructure. Clinical and radiographic follow-up revealed no complications.

Discussion: In SP-3 prostheses, opting for a hybrid restoration instead of a metal-porcelain restoration can reduce the overall weight of the prosthesis. Additionally, the material's flexibility helps to minimize the load transmitted to the implants.The preference for a screw-retained restoration over a cement-retained one may also facilitate potential clinical interventions in the event of complications.

Keywords: Dental implant, Hybrid restoration, Partially Edentulous, SP-3

PP-214 Rehabilitation of Vertical Dimension with Full-Mouth Restorations

Buse Koç, Şevval Deniz, Betül Balkancı Satılmaz, Zeliha Şanıvar Abbasgholizadeh

(Department of Prosthodontics, Marmara University, Istanbul, Turkey)

AIM: Acidic foods, improper brushing techniques, malocclusion, and bruxism are among the main factors contributing to dental wear. While physiological wear is considered a natural part of aging, it can become pathological and negatively affect quality of life. Bruxism plays a significant role in tooth wear. In cases with severe dental wear, loss of vertical dimension can lead to both functional and aesthetic issues, complicating the prosthetic treatment process. Accurate diagnosis and patient compliance are critical for successful treatment outcomes. This case report aims to present the prosthetic rehabilitation stages in patients with vertical dimension loss.

Case Presentations: Three patients aged 43, 44, and 56 presented with complaints of reduced chewing efficiency and esthetic concerns. Clinical evaluation revealed decreased lower facial height and generalized tooth wear in both arches. Treatment included full-mouth rehabilitation with fixed prosthetic restorations. Tooth preparations were completed and impressions taken using polyvinyl siloxane. Provisional restorations were 3D printed at the ideal vertical dimension and tested intraorally. After functional and esthetic adjustments, monolithic zirconia crowns were fabricated in two patients and the third patient rehabilitated with metal-ceramic restorations. All restorations cemented with glass ionomer cement. After cementation, stabilization splints were provided to all patients to prevent the activation of bruxism. Follow-up evaluations were conducted at 1 month, 3 months, and 6 months to assess functional outcomes and monitor for any signs of occlusal instability.

Discussion: The presented cases demonstrate that restoring vertical dimension through full-mouth rehabilitation requires careful assessment of occlusal parameters, precise diagnostic provisional restorations, and the selection of suitable restorative materials to ensure long-term functional stability and esthetic satisfaction.

Keywords: Vertical dimension, Bruxism, Tooth wear, Zirconia, Metal-ceramic, Prosthetic rehabilitation

PP-215 Rehabilitation with monolithic zirconia after apical repositional flap in bruxism: a case report

Ezgi Çuna[1], Gaye Sağlam[1], Ismail Gül[2], Resül Çolak[2]

([1]Department of Prosthodontics, Faculty of Dentistry, Zonguldak, Turkey; [2]Department of Periodontology, Faculty of Dentistry, Zonguldak, Turkey)

INTRODUCTION: Bruxism often leads to gingival recession and tooth wear. While surgical intervention treats gingival loss, prosthetic rehabilitation is required for tooth damage. Monolithic zirconia restorations offer a durable solution under high occlusal forces. Utilizing 3D-printed temporary crowns facilitates optimal treatment planning and enhances the precision of final restorations.

Case Presentation: A 66-year-old male patient presented with severe attrition, reduced vertical dimension, and masticatory muscle discomfort due to bruxism. Clinical and periodontal evaluation revealed insufficient attached keratinized gingiva, necessitating crown lengthening. An apically repositioned flap (ARF) surgery was performed, followed by uneventful healing. Subsequently, full-coverage tooth preparations were completed on all mandibular teeth. Impressions were obtained using silicone materials, and 14 temporary crowns were fabricated via 3D printing with polymethyl methacrylate (PMMA). Occlusion was assessed and adjusted. Final restorations were fabricated from monolithic zirconia using CAD-CAM technology and required minimal occlusal adjustment before glazing and cementation.

Discussion: The ARF technique successfully preserved gingival architecture and improved the width of attached gingiva. Vertical dimension was restored through prosthetic treatment. 3D-printed temporaries enhanced the workflow, and CAD-CAM fabricated zirconia crowns ensured biocompatibility, durability, and favorable hygiene maintenance. This approach provided both aesthetic and functional rehabilitation in a bruxist patient. Similar outcomes were reported by Moreira *et al*., who rehabilitated a bruxist patient with monolithic zirconia crowns for occlusal stabilization. Additionally, Mantovani *et al*. used ARF and gingivectomy with osteotomy in a patient with excessive gingival display, achieving successful results through prosthetic rehabilitation. These cases support the effectiveness of combining periodontal surgery with advanced restorative materials in the comprehensive treatment of bruxist patients.

Keywords: Bruxism, monolithic zirconia, 3D printed temporary crown

PP-216 Replacement of Right Mandibular Lateral Incisor with Diastema by Using a Resin-Bonded Fixed Partial Denture

sebnem begum turker, Serap Beşiroğlu, Yigit Atacan

(Department of Prostodontics, Marmara University, Istanbul, Turkey)

OBJECTIVES: This case report describes the use of a minimally invasive treatment option to replace a missing mandibular lateral incisor by using computer-aided design and computer-aided manufacturing (CAD-CAM) from a milled-reinforced glass ceramic block

MATERIAL-METHODS: A 64-year-old female patient was referred to the Marmara University Faculty of Dentistry, Department of Prosthodontics, with an aesthetic and functional complaint. As the patient was medicated with bisphosphate due to osteoporosis, extraction or implant operations in the mandibular incisor region are contraindicated. There was a slight mobility on the lower anterior teeth and a large missing area at the right central mandibular region. It was decided to construct a resin-bonded bridge (RBB) for the aesthetic and functional rehabilitation of the patient. The proximal contours were prepared to allow the insertion of the restoration and provide an increased tooth surface area available for bonding. A proximal chamfer finish line ending approximately 1 mm above the cemento-enamel junction and 1 mm in depth was established. Digital impression was taken with Trios 3 3Shape. As the edentulous area between the abutment teeth (31 and 42) was too large, to be able to restore with proper measurements of the missing right mandibular lateral incisor, the mesioproximal surface of the abutment teeth was added to the design of the restoration. The restoration was fabricated with Ivoclar IPS Emax Press MT (medium translucent) material and bonded by using resin cement.

CONCLUSIONS: A resin-bonded fixed partial denture which is a conservative solution for the rep lacement of the mandibular lateral incisors with a full digital workflow have several advantages over other dental prosthetic solutions, including non invasiveness, cost-effectiveness, esthetics, repairability, and shortened treatment times.

Keywords: Missing lateral incisor, Resin-bonded bridge, Fixed partial denture, Digital

PP-217 Resin-cement Adhesion to 3D Polymers: Layer Thickness, Conditioning and Aging Effect

Paula Zwicky, Alpaslan Sener, Angelo Cankja, Michele Piccini, Luiza Freitas Brum Souza, Mutlu Özcan

(Clinic for Masticatory Disorders and Dental Biomaterials, Zurich University, Zurich, Switzerland)

OBJECTIVE: This study aimed to evaluate how layer thickness, conditioning, and aging affect their adhesion of resin cement to 3D resins.

MATERIALS-METHODS: Four 3D resins were tested: Crowntec (SAREMCO), 3Delta Etemp (DeltaMed), Tempprint (GC), and NextDent C&B MFH (Vertex-Dental). Specimens (N=1280; n=320 per material) were printed (Phrozen Sonic Mini 8K) and divided by layer condition: polished, 100 µm, 50 µm, or 20 µm (n=80). Each group was randomly subdivided (n=40) by surface treatment: no treatment or air-abrasion (CoJet, 30 µm, 5 s, 2.5 bar). Resin cement cylinders were bonded (Panavia V5, Kuraray). Half of the specimens were tested dry; the other half underwent thermocycling (x5000 cycles; 5-55°C). Shear bond strength (SBS) was measured using a universal testing machine and analyzed using three-way ANOVA and Tukey's post-hoc test (α=0.05).

RESULTS: Material and layer thickness significantly affected the surface roughness (Ra: F=653.86 and 313.89; Rz: F=289.30 and 93.12; p<0.001). Conditioning alone was not significant (Ra: p=0.714; Rz: p=0.471), but the interaction (material × layer × treatment) was (Ra: F=4.20; Rz: F=9.17; p<0.0001). Roughness increased with layer thickness; GC showed the highest values, especially at 100 µm with CoJet, while S was the most stable. For SBS, material and layer thickness were significant in both Dry (F=116.48 and 3.60) and thermocycled (F=169.20 and 3.10) conditions (p<0.05). Surface treatment was only significant after aging (F=6.52; p=0.0003). The interaction was also significant in both Dry (F=4.09; p=0.0001) and TC (F=1.93; p=0.0480). Material S showed the highest and most stable SBS, followed by ND. Layer thickness influenced bond strength differently across materials: ND and D showed reduced SBS at higher thicknesses, while S maintained stable values and GC showed material-dependent variation.

CONCLUSION: Layer thickness and material type are key factors for surface roughness and bond strength. Surface treatment has a material-dependent effect, especially after aging.

Keywords: Adhesion, Dental Materials, Prosthodontics, Additive Technologies, 3D Printing, Methodology

PP-218 Restoration of a Completely Edentulous Maxilla with a Bar-Retained Overdenture: A Case Report

Zühre Aşıcıoğlu, Ferhan EGILMEZ

(Department of Prosthodontics, Gazi University, Ankara, Turkey)

INTRODUCTION: This case report describes the treatment of a maxillary edentulous patient with an implant-supported removable partial denture.

Case Description: A 59-year-old woman with maxillary complete edentulism was referred to our department for the restoration of her maxillae. After clinical and radiological evaluation, it was observed that four implants were placed symmetrically in the canine and first premolar regions, while natural teeth (44-32) and porcelain restorations (33-37, 45-48) were present in the opposing arch. The patient was planned to receive a bar-retained overdenture. The functional impression was taken using the open tray technique. A trial of the bar casting system was performed, and its passive fit was checked. Vertical dimension and centric relation were recorded, and tooth shade and size were determined. The bar connection was applied to the implants and torqued. The passive fit of the overdenture and implant substructure, as well as the ease of insertion and removal for the patient, were checked. It was verified that the acrylic resin sections provided adequate lip support in the anterior region. After 1 week, 1-month and 6-month control visits, no complication was observed and the prostheses were found aesthetically, phonetically and functionally pleasing.

Discussion: Implant-supported overdenture applications in the upper jaw are considered the correct treatment option for long-term success and prevention of bone resorption. When four implants can be used, bar-supported attachments are preferred. In maxillary edentulism, it has been reported that ball attachment support with two implants does not provide sufficient retention, and therefore, four implant supports should be used. The number and location of implants play an important role in the planning of prosthetic treatment. In this case, the use of four implant supports, along with the appropriate location of the implants, made the use of a bar-retained overdenture suitable.

Keywords: Implant-Supported Dental Prosthesis, maxillae, overdenture

PP-220 Restoration of Vertical Dimension and Esthetics in a Pseudo Class III Patient Using Zirconia-Based Prostheses

Gülbanu Yaşar, Halil Bora Inci, Köksal Beydemir

(Department of prosthodontics, Dicle University, Diyarbakır, Turkey)

A 52-year-old female patient presented to the Department of Prosthodontics at Dicle University Faculty of Dentistry with complaints of insufficient masticatory function, generalized tooth wear, and compromised esthetics. Intraoral examination revealed a pseudo Class III malocclusion, invisibility of the maxillary anterior teeth during rest and smiling, and old fixed prostheses with poor periodontal adaptation and worn porcelain surfaces in the maxillary right and mandibular left posterior regions. The teeth were prepared using a knife-edge technique. The patient's rest vertical dimension was determined using the Niswonger method, while the occlusal vertical dimension was established with the help of a lucia jig. Based on the newly established vertical dimension, provisional acrylic crowns were fabricated using a polymethyl methacrylateacrylic resin and delivered to the patient to contribute to vertical dimension rehabilitation and to observe masticatory adaptation. The provisional restorations were used for a period of six weeks,as a guide for the definitive restoration. During this period, the patient's condition and functions, such as muscle tenderness, temporomandibular joint discomfort, range of the mandibular movements, masticatory function, swallowing and speech were evaluated. At the end of this period, no patient complaints or discomfort were observed. Final impressions were taken using additional silicone (zhermack,elite hd,Germany) impression material, and zirconia-supported fixed porcelain bridges were fabricated to complete the treatment.

Keywords: Pseudo Class III, Vertical Dimension, Lucia jig, Prosthodontic Rehabilitation, Zirconia-Based Restoration

PP-221 Restorative management of lateral incisor microdontia: veneer or full crown? a two-case report

Ons Shili, Ilhem Ben Othmen, Sarra Nasri, Ons Chebil, Dalenda Hadyaoui, Jilani Saafi, Belhassan Harzallah

(Department of Fixed Prosthodontics, University of Monastir, Faculty of dental Medecine of Monastir, Research Laboratory of Occlusodontics and Ceramic Prostheses, LR16ES15, 5000, Monastir, Tunisia)

INTRODUCTION: Microdontia of the maxillary lateral incisors is a dental anomaly characterized by a significant reduction in the mesiodistal dimension of the crown. This condition often leads to anterior diastemas and poses both esthetic and functional concerns. Given their position in the anterior maxilla, these teeth require accurate diagnosis and treatment planning. This poster presents two clinical cases of lateral incisor microdontia managed with different restorative approaches: ceramic veneers and full-coverage ceramic crowns, selected based on occlusal and anatomical criteria.

Case Description: Case 1: A 35-year-old female patient presented with microdontia of the right maxillary lateral incisor, a diastema adjacent to tooth 22 and a deep overbite. Due to the structural and occlusal demands, full-coverage IPS Emax ceramic crowns were chosen to restore proper morphology and function. The clinical follow-up at 4-years showed excellent esthetic stability, preserved periodontal health and absence of complications. Case 2: A 25-year-old female patient with microdontia of the maxillary lateral incisors, in the absence of occlusal interference, was treated with IPS Emax ceramic veneers. This minimally invasive option preserved tooth vitality and achieved a highly esthetic result. The 2-year follow-up confirmed the stability of the restoration, optimal color integration and no marginal defects.

Discussion: Therapeutic options for lateral incisor microdontia include composite resins, partial or full veneers, and full crowns. Accurate clinical assessment is crucial in selecting the appropriate approach. Factors such as enamel quantity, tooth position, occlusion, and required morphological correction must guide the decision. Tools like Digital Smile Design, diagnostic wax-ups and mock-ups enhance outcomes and patient communication. Full crowns are indicated when extensive correction is needed, especially in cases with inadequate enamel or deep overbite. In contrast, ceramic veneers are ideal for moderate cases with favorable enamel and alignment. Both treatment modalities resulted in excellent esthetic outcomes, emphasizing the importance of case-specific restorative planning.

Keywords: anterior esthetics, microdontia, maxillary lateral incisors, ceramic veneer, full-coverage crown, treatment planning.

PP-222 Restoring endodontically treated teeth: overlay or endocrown? a Case series

ons Chebil, sarra nasri, kallala Rim, Ons Shili, Dalenda Hadyaoui, Zohra Nouira, saafi Jilani, Belhassen Harzallah

(University of Monastir, Faculty of dental Medecine of Monastir, Research Laboratory of Occlusodontics and Ceramic Prostheses, LR16ES15, 5000, Monastir, Tunisia)

INTRODUCTION: The evolution of adhesive dentistry has significantly shifted restorative paradigms toward more conservative approaches, especially in the rehabilitation of posterior teeth with extensive tissue loss. Traditional full crowns are no longer the default option, as partial coverage restorations, such as overlays and endocrowns, offer the potential to preserve sound tooth structure while ensuring biomechanical stability and esthetic excellence. The choice between an overlay and an endocrown is not solely based on the endodontic status of the tooth, but also on factors such as residual tooth volume, occlusal dynamics, and restorative goals. This poster presents a series of clinical cases comparing overlays and endocrowns, with the aim of highlighting selection criteria, preparation principles, and clinical outcomes in real-world practice.

Clinical observation: Three cases were selected involving molars and premolars restored with either ceramic overlays or endocrowns, based on individual structural, functional, and esthetic considerations. Case selection criteria included the amount of residual tooth structure, presence or absence of endodontic treatment, occlusal load, and patient-specific risk factors. All restorations were fabricated using lithium disilicate ceramics and bonded with a dual-cure adhesive protocol. Follow-up assessments included marginal integrity, postoperative sensitivity, occlusal stability, and patient satisfaction over a 12-24 month period.

Discussion: Overlays were favored in cases with preserved pulp vitality and adequate axial wall height, providing minimal invasiveness and excellent esthetics. Endocrowns were selected for endodontically treated teeth with substantial coronal loss and minimal ferrule. Both approaches demonstrated favorable clinical outcomes, with no reported debonding, secondary caries, or structural failure during the follow-up period. Patient satisfaction was high across both groups. A conservative, indication-driven approach ensures functional and esthetic success while preserving maximal tooth structure. This case series supports the integration of both techniques in modern adhesive dentistry.

Keywords: Esthetics, adhesives, ceramics, overlay, endocrown, endodontically treated teeth

PP-223 Restoring esthetics in malpositioned anterior implants using a cleansable hybrid prosthesis

Meryem Kılınç, Onur Etoz, Özgür Ozan Tanrıkut

(Department of Prosthodontics, Faculty of Dentistry, Mersin University, Mersin, Turkey)

INTRODUCTION: Rehabilitation of the anterior maxilla in young patients poses significant esthetic and functional challenges, particularly when implants are malpositioned and soft tissue volume is inadequate. This clinical case highlights a staged treatment approach emphasizing a prosthetic design optimized for long-term hygiene and maintenance.

Case Description: A 23-year-old male presented with missing maxillary central and lateral incisors following trauma. Clinical and radiographic evaluation revealed insufficient bone volume, and an autogenous block graft was performed. After initial healing, two Straumann bone-level implants (Straumann, Basel, Switzerland) were placed. Both implants were found to be in infra-position, placed too close together and poorly aligned, complicating prosthetic planning. Before the prosthetic phase, a connective tissue graft was used to enhance the soft tissue profile, to be able to manage dimensional deficiencies in the area. After achieving optimal soft tissue profile, definitive impressions were taken conventional methods. To correct implant angulation and achieve proper prosthetic alignment, multi-unit abutments and Straumann SRA components were used. Due to high crown-implant ratio and high esthetic demands, a screw-retained CAD/CAM-fabricated hybrid prosthesis incorporating pink porcelain was designed. The final stage of prosthetic treatment needed high number of visits due to challenges in gingival color matching and mucosal contouring.

Discussion: From the initial design phase, the prosthesis was carefully planned to be easily cleansable and maintainable over time. This case demonstrates that even in the presence of suboptimal implant placement, successful functional and esthetic outcomes are possible through multidisciplinary planning, optimal prosthetic design, and component selection. Emphasis on soft tissue management and prosthesis cleansability played a key role in achieving long-term clinical success and patient satisfaction.

Keywords: Dental Implants, Prosthesis Design, Esthetics, Dental, Oral Hygiene, Maxilla

PP-225 Restoring Function and Esthetics with Implant-Retained Obturator in a Maxillary Defect Patient

Simge Çetintürk, Ömer Kırmalı

(Department of Prosthodontics, Akdeniz University, Antalya, Turkey)

INTRODUCTION: Maxillary resections due to tumor surgery may result in oronasal defects that impair speech, swallowing, mastication, and facial esthetics. Conventional obturators can temporarily restore function, but when remaining teeth are lost, retention and stability are significantly compromised. Implant-supported prostheses provide a predictable alternative to conventional designs, especially in edentulous or partially edentulous maxillary defect patients.

Case Description: A 75-year-old female patient who underwent left-sided maxillary resection due to a mixed-type tumor was initially rehabilitated with a conventional obturator retained by the right maxillary molars. Due to periodontal failure, the remaining teeth were extracted. A treatment plan involving the placement of four dental implants in the residual maxilla was implemented. After the osseointegration period, a custom milled bar was fabricated over the implants. An implant-supported, bar-retained acrylic obturator prosthesis was designed and delivered. The prosthesis successfully restored the patient's oral functions and esthetic appearance.

Discussion: Implant-retained obturators offer improved retention, support, and stability compared to conventional tissue- or tooth-supported designs, particularly in patients with limited anatomical structures post-resection. In this case, the use of strategically placed implants enabled a functional and esthetic rehabilitation in a challenging maxillofacial defect scenario. The approach enhanced the patient's speech intelligibility, chewing ability, and self-confidence. This report highlights the importance of interdisciplinary planning and the advantages of implant-supported bar attachments in the prosthetic management of maxillary defects, especially when traditional support is inadequate.

Keywords: Maxillary Defect,Prostheses and Implants,Maxillofacial Rehabilitation,Obturator, Bar-Retained Prosthesis

PP-226 Retention Loss and Abutment Surface Changes in Implant Overdenture Attachments Over Simulated Long-Term Use

Maria Bei[1], Savvas N. Kamalakidis[2], Argirios L. Pissiotis[3], Konstantinos Michalakis[4], Olga Naka[5]

([1]DDS, Department of Prosthodontics, Faculty of Health Sciences, School of Dentistry, Aristotle University, Thessaloniki, Greece; [2]Assistant Professor, Department of Prosthodontics, Faculty of Health Sciences, School of Dentistry, Aristotle University, Thessaloniki, Greece; [3]Professor, Department of Prosthodontics, Faculty of Health Sciences, School of Dentistry, Aristotle University, Thessaloniki, Greece; [4]Professor and Chair, Department of Restorative Sciences and Biomaterials, Henry M. Goldman School of Dental Medicine, Boston University, Boston, Mass; [5]Associate Professor, Department of Prosthodontics, Faculty of Health Sciences, School of Dentistry, Aristotle University, Thessaloniki, Greece)

OBJECTIVES: The loss of retention in implant-supported overdenture attachments is commonly attributed to wear of the retentive inserts. However, the potential wear of the abutment coating material over time—especially when adhering to the manufacturer's recommended replacement intervals—has not been thoroughly explored. This in vitro investigation aimed to assess the changes in retentive forces of three polyamide and one polyetheretherketone (PEEK) denture attachment systems subjected to cyclic loading, following prescribed replacement protocols.

MATERIALS-METHODS: Four attachment systems (LOCKiT, OT-Equator, Ball attachment, Novaloc) were tested, alongside their respective retentive inserts. Forty implants were embedded in acrylic resin blocks, utilizing ten abutments for each attachment type. Metal housings containing the inserts were secured in polyamide screws with autopolymerizing acrylic resin. Cyclic insertion and removal procedures were conducted under wet conditions, employing a custom-built universal testing machine. Retentive forces were measured at specified intervals of 0, 540, 2700, and 5400 cycles using a second universal testing apparatus. LOCKiT, OT-Equator, and Ball inserts were systematically replaced every 540 cycles, whereas the Novaloc inserts remained unchanged. Abutment weights were recorded at 0, 2700, and 5400 cycles, and the surfaces were examined under a stereomicroscope at 10x magnification. Statistical analyses was performed using repeated measures ANOVA accompanied by Bonferroni corrections, with a significance threshold set at $\alpha = 0.05$.

RESULTS: All attachment systems exhibited significant retention loss over time. After five years of simulated use, retention losses were 45.03% for LOCKiT, 50.05% for OT-Equator, 39.13% for Ball, and 59.12% for Novaloc. Notable weight changes were observed in LOCKiT and Ball attachments ($P \leq 0.05$), indicating material wear.

CONCLUSIONS: Retention exhibited a gradual decline over time across all tested attachments, despite the timely replacement of inserts. It is advisable to include periodic abutment replacement in the recommendations due to the observable wear on their surfaces.

Keywords: retention loss, abutment wear, surface changes, overdenture attachments

PP-227 Root Resorption in Teeth After Orthodontic Treatment Rehabilitation and Smile Design with Implant Treatment: A Case Report

Eda Kurat, Mustafa Zortuk

(Department of Prosthetic Dentistry, Hatay Mustafa Kemal University)

INTRODUCTION: In this case, orthodontic root resorption teeth were extracted and smile design was done with implant treatment.

Case Description:: A 20-year-old male patient applied to Hatay Mustafa Kemal University Faculty of Dentistry, Department of Prosthodontics for his teeth with root resorption after orthodontic treatment. In the radiographs taken, advanced root resorption was detected in teeth numbered 12 and 63. An implant was planned for the patient's resorbed teeth together with extraction. A graft was added to tooth number 12 during the surgical operation. After the implants were placed, a temporary plate was used to prevent tooth movement. Three months later, digital impressions of the implants were taken. Before the smile design was made, temporary teeth were made on the implants and used for at least 15 days to shape the gums. Smile design was planned for all teeth between 13 and 23. Glass ceramic with zirconium substructure was applied to teeth 12 and 23, and laminated veneer treatment was applied to teeth 11, 13, 21, 22.

Discussion: Smile design after implant treatment is a process that aims to improve the individual's smile both aesthetically and functionally. After the implant application, it is necessary to shape the soft tissue to create an ideal gingival transition profile before proceeding to permanent prosthesis. For this, a digital impression is taken and a temporary tooth is made on ti base. The patient was allowed to wear the provisional for a while, and after the gingiva was shaped, the permanent teeth were started. In this case, because zirconium is more compatible with the gingiva and has aesthetic advantages, a personal abutment was prepared with a cut back with zirconium substructure and glass ceramic was planned on it. Laminate was planned on the tooth.

Keywords: implant, smile design, laminate, zirconium

PP-228 Single Implant-Supported Crown with Polyamide Removable Partial Denture: Clinical and Prosthetic Evaluation Case Report

Maide Cinci[1], Onur Doğan Dağ[2]

([1]Maide Cinci; [2]Onur Doğan Dağ)

The combined use of implant-supported fixed prostheses and removable partial dentures offers an ideal treatment option for patients seeking esthetic and functional rehabilitation without undergoing additional surgical procedures. Removable prostheses fabricated with flexible, esthetic materials such as Deflex provide improved patient adaptation and esthetic advantages, particularly by eliminating the visibility of clasps.

A 58-year-old male patient presented with complaints related to function and esthetics due to missing teeth in the right maxillary region and a fractured restoration in the left maxilla. The patient had an existing implant-supported single crown in the left maxillary molar region, placed eight years prior, and requested its replacement. He had lost teeth #14, #15, #16, and #17 in the right maxilla and declined any new surgical interventions at this time. Furthermore, he requested that no restorations be made on tooth #13. Consequently, a removable partial denture was planned for the right maxillary region. Considering esthetic concerns and the potential for future implant placement, the prosthesis was initially fabricated with a metal framework. However, at the final stage, the clasps were removed, and the framework was completed using Deflex material to improve esthetics. First, a new fixed crown was fabricated on the existing implant, followed by the completion of the removable prosthesis.

In patients who decline surgical procedures, the use of combination prostheses can offer functionally and esthetically satisfactory outcomes, especially in unilateral free-end edentulous ridges. In this case, a non-invasive treatment approach that combined an implant-supported fixed crown with a flexible removable partial denture yielded high patient satisfaction, demonstrating the clinical value of combining different prosthetic modalities.

Keywords: Dental Implants, Prosthodontics,Removable Partial Dentures, Esthetics, Biocompatible Materials

PP-229 Single-tooth replacements with implant-supported zirconia hybrid abutment crowns: case series

Elif Su Çiçek, Merve Bankoğlu Güngör

(Department of Prosthodontics, Gazi University, Ankara, Turkey)

INTRODUCTION: Implant-supported restorations are widely used for the rehabilitation of single-tooth losses due to their high success rates. In recent years, hybrid abutment crown restorations, which combine the advantages of both cement-retained and screw-retained systems, have gained popularity. These restorations consist of monolithic crowns fabricated from various materials using CAD-CAM technology and cemented extraorally onto titanium bases, featuring a screw access hole on the occlusal surface. The crowns are screw-retained on the implant, and the screw channel is sealed with composite resin. This case series presents the prosthetic rehabilitation process of four patients with single-tooth replacements using zirconia hybrid abutment crowns following the conventional osseointegration period after implant placement.

Case Description: Impressions for single-tooth implants were taken using a closed-tray technique with a silicone impression material, followed by model fabrication. Based on the gingival height and the cervico-occlusal distance on the model, the most suitable titanium bases were selected. The crown portion of the restorations was then designed using CAD software and milled monolithically from zirconia ceramic. After clinical try-in, the crowns were glazed and adhesively cemented onto the titanium bases with resin cement. Subsequently, the hybrid abutment crowns were seated intraorally, and the abutment screws were torqued to the recommended value. The screw access holes were sealed with composite resin. Throughout a six-month follow-up period, no complications were observed, and patients reported satisfaction with both function and esthetics.

Discussion: Conventional fixed partial dentures require preparation of adjacent teeth, while implants preserve tooth structure and bone, making them preferred. Hybrid abutment crowns, cemented extraorally and screw-retained, reduce cement-related risks and allow easy removal. They are ideal for limited spaces, offering good retention and long-term success. This case series showed zirconia hybrid abutment crowns effectively treated single-tooth losses without complications, representing a viable alternative for such restorations.

Keywords: Computer-Aided Design, Implant-Supported Dental Prosthesis, Permanent Dental Restorations, Single-Tooth Dental Implants

PP-230 Smile aesthtetic treatment with porcelain laminate veneers and e-max restorations: case report

Rojda Yılmaz[1], Ayça Deniz Izgi[2]

([1]Rojda DEMİRBİLEKLİ; [2]Ayça Deniz İZGİ)

INTRODUCTION: Porcelain laminate veneer restorations have become a standard procedure in the treatment of anterior teeth, in addition to their aesthetic preference, as well as their durability and biocompatible successes. Success in adhesive systems has also increased the long-term rates of these restorations. With the correct indication and clinical application of porcelain laminate veneers, conservative treatments with high patient satisfaction are possible.

Case Presentation: A 26-year-old female patient applied to our clinic with aesthetic concerns. The patient, who was uncomfortable with the color and shape of teeth, also refused surgery for her missing tooth number 24. Also, the patient's closing relations were suitable for porcelain laminate production. For this reason, it was decided to make porcelain laminate for the 7 teeth in the smile corridor and 3-member e-max crown for the missing tooth number 24. However, gingivectomy was previously performed on ten teeth that intruded into the smile corridor to reduce excessive gingival visibility. At this stage, the preparation of teeth 23 and 25 was done with champher design for 3 weeks with temporary teeth. The pontic region of the temporary tooth was formed in a convex shape to shape the gum. During this process, after the healing of the epithelial tissues was completed, lamina preparations were made with the champher design. Then, the retraction cord was placed, digital measurements were taken and restoration work was started. 7-member porcelain laminate and 3-member e-max restoration were produced. The centric and eccentric contacts of the restorations were checked and then cementation was performed. Botox was then applied to reduce the still high gingival visibility.

CONCLUSION: Porcelain laminate restorations offer a strong and conservative solution with aesthetic concerns. With careful planning and implementation, patient comfort can be achieved in a minimally invasive manner. However, a multidisciplinary approach is often required for aesthetic results

Keywords: porcelain laminate veneer, e- max crown, smile design

PP-231 Soft tissue contouring with anatomical harmony abutment in implant supported prostheses: two case reports

Aynur Beyza Çavuşculu Güdül, Merve Acar, Şükriye Ece Geduk, Gaye Sağlam

(Zonguldak Bülent Ecevit University, Faculty of Dentistry, Department of Prosthodontics, Zonguldak, Turkiye)

INTRODUCTION: The emergence profile is key to the esthetics and long-term success of implant restorations and directly affects peri-implant tissue health. However, standard healing caps do not match the natural tooth emergence profile.

Cases: A 32-year-old patient presented with a fractured tooth number 15. After clinical evaluation, an implant-supported restoration was decided. After implant surgery, Anatomic Harmony abutment was prepared and placed using Natural Emergence Profiler to create the gingival emergence profile. After osseointegration, measurements were taken by Hind's technique. A zirconia crown was fabricated, with its transgingival and occlusal surfaces polished. The crown was cemented onto a titanium base abutment and delivered to the patient. A 57-year-old patient presented for restoration of missing tooth number 15 with implant treatment. After implant placement, a 12 week healing period was observed. Anatomical harmony abutment was then fabricated with flowable composite resin to create an ideal emergence profile on titanium temporary abutment, and gingiva was shaped. Measurements were taken using Hind's technique. Monolithic zirconia crown prepared on the selected Ti-base abutment was delivered to the patient.

Discussion: The esthetic and functional success of implants relies on the compatibility of restorations with surrounding soft tissues. Temporary restorations help shape the emergence profile, which is critical for tissue adaptation. Screw-retained temporaries offer a smooth crown-abutment junction, promoting healing and biological compatibility. It is noted that poorly contoured restorations can cause plaque buildup and peri-implantitis. Thus, soft tissue management is essential (1). In our cases, the transgingival part of the temporary abutment was shaped using the esthetic biological contour (EBC) concept. Custom healing abutments can be fabricated either immediately after implant placement or post-osseointegration (2). In this study, both timing approaches were used to compare clinical outcomes.

Keywords: Natural emergence profiler, Anatomic harmony abutment, Hind's technique, Esthetic biological contour (EBC)

PP-232 Strategic Implant Rehabilitation of Bilateral Kennedy Class II with Severe Bone Loss Using Toronto Bridge Prosthesis: A Graft-Free Approach

Fariborz Saadat[1], Ramin Mosharraf[1], Ashkan Saadat[2], Atena Saadat[3]

([1]Department of Prosthodontics School of Dentistry. Isfahan University of Medical Sciences; [2]D.D.S Post Graduate Student of Oral and Maxillofacial Surgery Faculty of Dentistry Istanbul Aydin University; [3]Student of Dentistry. Faculty of Dentistry Altinbas University)

INTRODUCTION: Bilateral Kennedy Class II cases complicated by severe alveolar bone loss pose a considerable prosthetic challenge. While bone augmentation is commonly considered, some patients may not be suitable candidates. The Toronto Bridge prosthesis, when combined with strategic implant placement and multi-unit abutments, enables a graft-free, fixed restoration with optimal functional and esthetic outcomes.

Case Description: A 63-year-old patient presented with edentulism in the left maxilla and right mandible, each classified as Kennedy Class II. Clinical and radiographic evaluation revealed advanced horizontal and vertical bone loss in both regions. The treatment plan involved a graft-free approach using four implants per arch, placed based on anatomical limitations and prosthetic demands. Multi-unit abutments were used to achieve ideal angulation and passive fit. A Toronto Bridge prosthesis—consisting of a screw-retained framework and individual cemented crowns—was fabricated for both arches. This design allowed for soft tissue compensation, esthetics, retrievability, and hygiene access. At 12-month follow-up, the patient demonstrated stable prosthetic function, excellent esthetics, and high satisfaction.

Discussion: In cases where bone grafting is contraindicated or declined, the Toronto Bridge offers a predictable, long-term solution. The hybrid design provides a balance of function, esthetics, and ease of maintenance. Strategic use of multi-unit abutments enables accurate prosthetic alignment even in challenging anatomical cases. This case reinforces the viability of graft-free protocols for full-arch fixed prosthetics in Kennedy Class II patients.

CONCLUSION: Toronto Bridge prostheses allow for successful full-arch rehabilitation in bilateral Kennedy Class II arches with severe bone loss. When paired with strategic implant planning and multi-unit abutments, this approach offers a minimally invasive, stable, and patient-centered alternative to grafting procedures.

Keywords: Toronto Bridge, Kennedy Class II, Severe Bone Loss, Implant-Supported Prosthesis, Graft-Free Rehabilitation

PP-233 Strategic Preoperative Planning and Prosthetic Guidance in Successful Implant Placement: A Case Study”

Özge Eroğlu, Funda BAYINDIR

(Department of Prosthodontics, Faculty of Dentistry, University of Ataturk)

INTRODUCTION: Dental implants are a solution for functional and esthetic rehabilitation of missing teeth. However, their long-term success depends not only on osseointegration but also on the proper evaluation of adjacent anatomical structures and precise surgical planning. Implants placed too close to neighboring teeth may impair pulpal circulation, leading to complications, such as inflammation, root resorption, or periapical lesions. This case report describes a periapical pathology resulting from an implant placed in close proximity to an adjacent tooth, and discusses the clinical management that followed.

CASE DESCRIPTION: A 42-year-old female patient underwent placement of dental implants in the regions corresponding to teeth 17, 15, 14, 24, and 26. Panoramic imaging revealed that the implant at site 14 was located close to the apex of the tooth 13. Radiography revealed inflammation and apical root resorption. Root canal therapy was administered; however, the symptoms persisted. Apical resection was performed. During surgery, the closed position of the implant was confirmed to cause periapical pathology in tooth 13.

DISCUSSION: Implants placed closer than 1.5–2 mm to the adjacent roots may compromise the vascular supply and lead to inflammation. In this case, improper positioning caused complications that required both endodontic and surgical treatment. The use of surgical guides is crucial to ensure that the implants are accurately placed away from critical structures. Digital planning and 3D imaging enhance surgical precision and reduce iatrogenic risk. This case underscores the importance of thorough radiographic planning and guided surgery in preventing implant-related complications.

Keywords: dental implants, cone-beam computed tomography, treatment

PP-234 Stress distribution in endodontically treated differently restored teeth. A 3D-FEA study

Ömer Kırmalı[1], Mehmet Barış Akar[2], H. Kürşat Çelik[3], Kürşat Er[4], Tuğba Eraslan Akar[1]

([1]Department of Prosthodontics, Faculty of Dentistry, Akdeniz University, Antalya, Turkey; [2]Akar Dental Clinic, Antalya, Turkey; [3]Department of Agricultural Machinery and Technology Engineering, Akdeniz University, Antalya, Turkey; [4]Department of Endodontics, Faculty of Dentistry, Akdeniz Unıversity, Antalya, Turkey)

Background: The mechanical properties of post materials used in endodontically treated teeth under occlusal forces significantly influence the long-term success of restorations. This study aimed to evaluate stress distribution in maxillary right central incisors with root canal treatment (RCT) and periapical lesions, restored using different post systems, through finite element analysis (FEA).

METHODS: Five finite element models were constructed: (Model 1) a healthy tooth, (Model 2) an endodontically treated tooth with a periapical lesion and a metal-supported porcelain crown, (Model 3) a tooth with a periapical lesion restored using a fiber post and metal-supported porcelain crown, (Model 4) a tooth restored with a cast metal post, and (Model 5) a tooth restored with a zirconia post—both with periapical lesions and metal-supported porcelain crowns. A static 100 N force was applied to the palatal surface at a 135° angle to the tooth’s long axis. Maximum equivalent stress values in the tooth, post materials, bone, and lesion area were assessed using the Von Mises stress criterion.

RESULTS: In all models, post-loading stresses were primarily concentrated in the cervical and middle thirds of the root. Stress accumulation was observed in the cervical collar region of the healthy tooth (Model 1), in the endodontically treated tooth with a periapical lesion (Model 2), and in the fiber post-restored tooth (Model 3). In contrast, stress was more concentrated in the post materials of the cast metal post (Model 4) and of zirconia post (Model 5) models. Across all models with periapical lesions, stress levels in the lesion area were low.

CONCLUSION: Restoration of endodontically treated teeth with periapical lesions using different post materials resulted in variable stress distributions in root dentin and surrounding bone but showed similar stress values at the periapical lesion area.

Keywords: periapical lesion, finite elemental analysis, fiber post, cast metal post, zirconia post.

PP-235 Successful Prosthetic Rehabilitation in a Periodontally Compromised Patient Using a Telescopic System

Selin Atay, Ayşegül Kurt

(Department of Prosthodontics, Trakya University, Edirne, Turkey)

Telescopic prostheses are prosthetic designs that combine the advantages of fixed and removable restorations using double crown system. In this approach, primary crowns are cemented onto prepared abutment teeth, while secondary crowns are incorporated into a removable superstructure. This system provides high retention, stability, aesthetic outcomes. It is especially suitable for cases involving abutment teeth with reduced periodontal support or unfavorable crown-root ratios, where conventional fixed prosthetic options may be inadequate or risky. In the presented case, 60 years old male patient presented to the clinic with aesthetically unsatisfactory and functionally incompatible fixed bridge prostheses. Upon removal of existing restorations, clinical evaluation revealed insufficient periodontal support in remaining teeth. After completing the necessary periodontal treatments, comprehensive prosthetic plan was made. A telescopic prosthesis was designed for the maxillary arch; removable partial denture was planned for the mandible, customized to meet the patient's functional needs and aesthetic demands. Tooth preparations were completed using chamfer finish line. Impressions for the primary crowns were obtained with polyvinyl siloxane material, and the crowns were fabricated using Co-Cr alloy. After verifying fit and precision, a secondary impression was taken using polyether material, and the secondary crowns were fabricated using a Co-Cr alloy and coated with a composite-based material. To ensure adaptability against potential future tooth loss, a major connector was incorporated into the prosthesis design. During the metal framework trial, both tissue adaptation and crown compatibility were assessed. Intermaxillary records were obtained using wax. Following denture try-ins, the final prosthesis was delivered. The patient expressed satisfaction in terms of both esthetics and function Rehabilitating teeth with limited periodontal support using telescopic system provides both functional continuity and aesthetic success. Despite factors such as technical sensitivity and high cost, this approach proved successful in the present case in terms of biomechanical advantages and patient satisfaction.

Keywords: Telescopic system, Prosthetic rehabilitation, Periodontal insufficiency

PP-236 Surface and Color Stability of 3D Printed Resins After Aging process

Merve Taş[1], Merve Özarslan[2], Dilber Bilgili Can[3], Burcu Yağmur[4]

([1]Merve Özarslan; [2]Merve Taş; [3]Dilber Bilgili Can; [4]Burcu Yağmur)

OBJECTIVE: The aim of this study was to evaluate and compare the surface hardness, surface roughness, and color stability of four different three-dimensional (3D) printed resin materials after one year of artificial aging.

MATERIALS-METHODS: Samples (n=10) were prepared in dimensions of 6×6×1 mm from four different 3D printed resin materials (Saremco print CROWNTEC (SR), Custom Resin Solutions Composite Resin(CRS) Deneme Resin (DR), and Detax Freeprint Crown composite (DX)) in accordance with the manufacturers' instructions. The samples were subjected to thermal cycling for 10,000 cycles between 5–55 °C. Microhardness, surface roughness, and color values (L*, a*, b*) were measured before and after aging. Color changes (ΔE) were calculated using the CIEDE2000 formula. Data were analyzed using one-way ANOVA in IBM SPSS V23 software ($p<0.05$).

RESULTS: A statistically significant difference was found in surface hardness among the groups before and after aging ($p=0.015$ and $p=0.039$, respectively). However, the difference in hardness change between groups was not statistically significant ($p=0.057$). A significant difference in surface roughness was observed among the groups both before and after aging ($p=0.025$ and $p=0.002$). Surface roughness increase was significant in all groups except Group DX. There was also a significant difference in color change among the groups ($p<0.001$), with Group DR showing the highest and Group SR the lowest ΔE value.

CONCLUSION: Group SR demonstrated the best performance in terms of color stability and surface hardness. Group CRS exhibited the highest surface roughness values, while group DX maintained a stable mechanical profile after aging.

Keywords: 3D Printed Resins, Artificial Aging,Color Stability, Surface Roughness,Microhardness,Thermal Cycling

PP-237 Surface modifications to enhance wettability of milled zirconia: comparison of low-pressure plasma, UV, and diode laser treatments

Merve Akbulut[1], Asena Şeyma Karartı[1], Ulku Tugba Kalyoncuoglu[1], Bengi Yilmaz Erdemli[2]

([1]Department of Prosthodontics, Gulhane Faculty of Dentistry, University of Health Sciences, Ankara, Turkey; [2]Department of Biomaterials, University of Health Sciences, Istanbul, Turkey, Gulhane Medical Design and Manufacturing Center (METUM), University of Health Sciences, Ankara, Turkey, Regenerative Medicine Application and Research Center, University of Health Sciences, Istanbul, Turkey)

OBJECTIVES: To compare and evaluate the wettability of milled zirconia specimens after low-pressure plasma, UV treatment, and diode laser application.

MATERIALS-METHODS: CAD/CAM-milled zirconia discs (n=5/per group) were randomly divided into three surface treatment groups: low-pressure plasma, UV light, and diode laser. For the low-pressure plasma treatment, a benchtop plasma system (Zepto, Diener Electronic, Germany) was used. The zirconia specimens were exposed to plasma generated at 40 kHz and 80 W, with a chamber pressure of 0.3 mbar, using air as the process gas for 10 minutes. UV light treatment was performed for 15 minutes using the GC Labolight LV-III unit. Diode laser treatment (Biolase) was applied at 1 W for 3 minutes. Contact angles were measured before and after treatment using an optical tensiometer (Attension Theta, Biolin). Initial and post-treatment values were analyzed. The Shapiro-Wilk test indicated that post-treatment data were not normally distributed ($p<0.05$). Therefore, the Kruskal-Wallis test was used for intergroup comparisons, followed by Bonferroni-adjusted pairwise comparisons. The Wilcoxon signed-rank test was performed for intragroup comparisons between initial and post-treatment values.

RESULTS: Initial contact angle measurements showed no statistically significant difference among groups ($p=0.285$). After surface treatments, significant differences were observed between groups ($p<0.001$). Pairwise comparisons showed significant differences between plasma and laser ($p<0.001$), plasma and UV ($p<0.001$), and laser and UV ($p<0.001$) groups. Plasma treatment significantly decreased contact angle ($p<0.001$), indicating enhanced wettability. In contrast, UV treatment significantly increased contact angle ($p<0.001$), reflecting reduced wettability. No statistically significant difference was observed in the laser group before and after treatment ($p > 0.05$).

CONCLUSIONS: Low-pressure plasma treatment effectively enhanced the wettability of milled zirconia surfaces, while UV treatment negatively affected it. The diode laser treatment exhibited no significant effect. The choice of surface treatment method should consider the intended clinical outcomes related to zirconia's hydrophilic behavior.

Keywords: Zirconia, Wettability, Low pressure plasma, Diode laser, UV treatment

PP-238 Symmetrical treatment of anterior tooth loss with implant-supported restorations and digital workflow: A case report

Huriye Çifci, Sezgi Cinel Sahin

(Department of Prosthetic Dentistry, Denizli, Turkey)

OBJECTIVES: The treatment goal is to deliver a symmetrical, aesthetic, economical, and minimally invasive outcome using a digital workflow and preserving the patient's natural teeth, following immediate implantation after the extraction of anterior teeth with poor prognosis.

CASE: Clinical and radiographic examination of teeth numbered 21 and 22 in a 47-year-old systemically healthy male patient—previously treated with root canal therapy and restored using prefabricated post-core and metal-supported veneer crowns—revealed tooth mobility and the presence of a vertical root fracture in tooth 22. Following tooth extraction, simultaneous implant placement with grafting was planned. After osseointegration, soft tissue grafting was performed to establish proper Zenith points and emergence profile, guided by the contralateral teeth. Healing caps and a silicone index were used to shape the profile, followed by digital scanning with a scan body. A patient-specific mock-up and final treatment plan were created, and custom zirconia abutments were digitally designed. Cut-back zirconia-based veneers were cemented using dual-cure resin cement. Finally, tooth 11 was restored using injection molding to correct the midline gingival embrasure, achieving symmetry with the anterior dentition.

CONCLUSIONS: In the management of periodontal tissue loss following tooth extraction, patient concerns regarding aesthetics, phonation, and function were successfully addressed through interventions within anatomical limitations, supported by a digital workflow. Post-treatment evaluations confirmed the restoration of these functions with high patient satisfaction. No pathological findings such as mobility, bone loss, aesthetic compromise, or periodontal issues were observed during the 6-month clinical follow-up.

Keywords: Digital workflow, emerging profile, aesthetic, implant, custom abutment

PP-239 Telescopic and Implant-Supported Prosthetic Rehabilitation in a Partially Edentulous Patient

Melike Nur Bakır, Onur Doğan Dağ

(Department of Prosthodontics, Trakya University, Edirne, Turkey)

Partial edentulism requires effective prosthetic solutions that address both functional and esthetic demands. Conventional removable partial dentures may be insufficient in terms of retention and stability, especially in cases with a limited number of abutment teeth. In such cases, telescopic prostheses offer an important alternative to both increase mechanical retention and meet aesthetic expectations. This clinical case presents the prosthetic rehabilitation of a patient who had only two remaining natural maxillary teeth and had previously used a prosthesis with precision attachments.

A 62-years-old female patient presented to our clinic requesting replacement of her existing prostheses. Intraoral examination revealed that the patient was using removable prostheses with precision attachments in both the maxilla and mandible. The fixed restorations had lost their fit, causing irritation in the surrounding tissues. Based on clinical and radiographic evaluations, the existing restorations were removed and teeth with poor prognosis were extracted. As a result, only two natural teeth remained in the maxilla, and all remaining mandibular teeth were extracted. Due to the insufficient number of maxillary teeth, a prosthesis with precision attachments was no longer feasible. Instead, a telescopic denture was chosen to provide both esthetics and retention. In the mandible, given the limited bone volume, a two-implant-supported overdenture was planned to ensure long-term stability and patient comfort.

This clinical case demonstrates that telescopic crown systems can successfully fulfill functional and esthetic requirements in patients with a limited number of abutment teeth. In the maxilla, the use of a telescopic denture provided high retention, stability, and patient satisfaction. In the mandible, where bone quantity was limited, an implant-supported overdenture proved to be an effective solution for prosthetic rehabilitation. This combined approach highlights the versatility of using both telescopic and implant-supported prostheses in complex clinical scenarios to achieve satisfactory and predictable outcomes.

Keywords: Telescopic denture, Partial edentulism, Implant-supported overdenture

PP-240 The Impact of Nano-sized Boron Nitride on the Hardness of Maxillofacial Silicone Elastomers

Refika Er, Canan Akay

(Department of Prosthodontics, Faculty of Dentistry, Osmangazi University, Eskişehir, Turkey)

AIM: To investigate how the addition of different concentrations of hexagonal boron nitride (h-BN) to silicone elastomers commonly used in maxillofacial prostheses affects hardness.

MATERIALS-METHODS: Two different silicone elastomers; VST50 RTV type and M511 HTV type silicone elastomers were used in this study. Groups in which h-BN was added at the rates of 1, 2 and 3 wt% and the control group in which no addition was made, 4 groups per silicone and 8 groups in total were formed. 10 samples were produced for each group (n=10). Hardness test was applied to the samples and the data were statistically analysed. Scanning Electron Microscope (SEM) and Energy Dispersive X-ray Spectroscopy (EDS) were used to investigate the distribution and ratio of nanoparticles in the samples, Fourier Transform Infrared Spectroscopy (FTIR) was used to investigate whether nanoparticle molecules chemically bond with silicone, and X-ray Diffraction (XRD) was used to investigate the chemical structure and the form of nanoparticles.

RESULTS: 3% h-BN group from M511 groups, control and 1% h-BN groups from VST50 groups gave statistically significant high results. In SEM examination, it was seen that nanoparticles were evenly distributed in the samples, but in groups containing 3% h-BN nanoparticles were relatively more agglomerated. And in FTIR examination, nanoparticle molecules did not form chemical bonds with silicon molecules.

CONCLUSION: The addition of 3 wt% h-BN nanoparticles to M511 silicone elastomer increased the hardness value. The addition of 2% and 3% h-BN to VST50 silicone decreased the hardness value. It was concluded that at high nanoparticle concentrations, agglomeration in the nanoparticle increased and no chemical interaction occurred between nanoparticle molecules and silicone molecules.

Keywords: maxillofacial prostheses, silicone elastomer, boron nitride nanoparticle, hardness.

PP-241 The Impact of Social Media on the Smile Aesthetics Perceptions of Lay People in Turkey

Merve Koseoglu, Ozge Tosunoglu

(University of Sakarya)

OBJECTIVES: The objective of this study was to investigate the extent to which social media affects lay people's perceptions regarding aesthetic dental treatments.

MATERIALS-METHODS: The present study was conducted through a large-scale online survey comprising 900 participants who were aged 18 years and older. Data were obtained using a 10-question online illustrated survey. The Kolmogorov–Smirnov test was employed to assess the normality of the data distribution. Descriptive statistics and cross-tabulation analyses were conducted to compare participants' responses to each statement. To examine potential associations between the survey items and demographic variables such as age, gender, and education, chi-square tests were utilized. Statistical significance was set at $\alpha < 0.05$.

RESULTS: The study revealed that Instagram was the leading platform among participants, with 91.2% usage. 40.1% of the participants spent 2-4 hours on social media and believed that they are most influenced by expert doctor recommendations on social media. 49.3% of them followed accounts related to aesthetic dentistry on social media platforms. 33% of them were satisfied with the appearance of their teeth. 46.5% of them stated that advertisements, informative content, or before-and-after photos featuring AI-supported smile design on social media did not influence their decision to undergo aesthetic dental treatment. 38.9% of the participants reported that using an application where they could view AI-supported before-and-after photos somewhat influenced their decision-making process regarding aesthetic dental treatment.

CONCLUSIONS: The influence of social media on lay people's smile aesthetic perception is found to be high. Social media platforms significantly influenced lay people's perceptions, often motivating them to pursue aesthetic dental treatments.

Keywords: Aesthetics, dental, smiling

PP-242 The Impact of Veneer Restoration Techniques on Oral Aesthetic Enhancement

Zhixu Miao

(chongqing huamei plastic surgery hospital)

OBJECTIVE: This study aimed to evaluate and compare the clinical outcomes between porcelain veneers and direct composite veneers in anterior dental aesthetic restoration.

METHODS: From January to December 2023, 124 patients (287 teeth) requiring anterior aesthetic restoration were enrolled. Patients were randomly assigned to either the porcelain veneer group (62 patients, 142 teeth) or the direct composite veneer group (62 patients, 145 teeth). Clinical outcomes were evaluated using modified United States Public Health Service (USPHS) criteria, and patient satisfaction was assessed using the Modified Aesthetic Evaluation Scale (MAES). The survival rate and complications, including marginal discoloration and mild gingival inflammation, were recorded at 6-month follow-up.

RESULTS: The proportion of Grade A ratings in modified USPHS criteria was 98.08% for the porcelain veneer group and 94.08% for the composite veneer group ($P<0.05$). MAES scores were 18.6±1.2 and 17.4±1.4 for the porcelain and composite groups, respectively ($P<0.05$). The survival rates were 99.3% for porcelain veneers and 97.8% for composite veneers ($P>0.05$). The complications included marginal discoloration (2.8% vs. 5.6%, $P<0.05$) and mild gingival inflammation (2.1% vs. 2.8%, $P>0.05$) for porcelain and composite groups, respectively.

CONCLUSION: Both porcelain and direct composite veneers demonstrated effective outcomes in oral aesthetic improvement. Porcelain veneers showed superior performance in clinical evaluation, higher patient satisfaction, and lower marginal discoloration incidence. While no significant differences were found in survival rates and gingival inflammation between the two techniques, porcelain veneers demonstrated better potential for anterior dental aesthetic restoration.

Keywords: Dental veneers, aesthetic dentistry, clinical outcomes, patient satisfaction, oral rehabilitation

PP-244 Treatment of Lateral Tooth Missing With İmmediate Loading: Case Report

Mehmet Ünal[1], Murat Eser[2]

([1]Department of Prosthetic Dentistry, Karamanoğlu Mehmetbey University, Karaman, Turkey; [2]Department of Prosthetic Dentistry, Konya Dental and Oral Health Hospital, Konya, Turkey)

INTRODUCTION: In this report, immediate implantation and immediate loading of a missing tooth caused by the extraction of a lateral tooth are presented.

Case Report: A 30-year-old woman with no systemic disease was admitted to our clinic with the complaint of pain in tooth number 22. After intraoral and radiographic examinations were completed, the patient was decided to be treated. During the follow-up sessions, the patient's symptoms did not resolve. A multidisciplinary decision was made to extract tooth number 22, followed by immediate implantation and immediate loading. A torque value of 30 Ncm was obtained during the surgical stage. As a result of the torque was obtained, immediate prosthetic loading was performed. Freedom was provided for protrusive and lateral movements. Since the temporary restoration negatively affected the patient's social life, a laminated restoration was made using a 3D printer. After three months of osseointegration, permanent restoration was initiated. For the permanent restoration, the open impression post was modified and impressions were taken. The individual abutment on the Ti-base was produced from zirconia with milling. The final restoration was delivered with occlusal adjustments.

Discussion and RESULTS: Partial tooth loss can be rehabilitated using fixed restorations, including tooth-supported and implant-supported options. Implant restoration is one of the most popular treatments for preserving healthy teeth. With implant restorations, the patient's lost phonation, aesthetics, and masticatory functions can be rehabilitated. In this study, the patient's natural teeth were treated without prosthetic preparation. Since the treatment is located in the aesthetic area, the immediate loading protocol was applied so that the patient would not be toothless until the permanent restoration was made. Immediate loading aims to preserve soft tissue contour and facilitate the patient's social life.

Keywords: provisional crown, bone density, immediate loading

PP-245 Use of an ovate pontic fabricated from the patient's own tooth in cases where immediate implant loading is not feasible

Ilke Çalışkan, Koray Soygun

(Department of Prosthodontics, Çukurova Üniversitesi)

Introductions: Implants are commonly used for tooth loss. An aesthetic emergence profile is crucial for smile line teeth. Immediate loading helps achieve this profile, but if not possible, tissue shaping after healing is needed, extending treatment time. This case shows healing by shaping the extracted tooth into an ovate pontic when immediate loading was not feasible.

Case Description: A 27-year-old male with trauma history presented with mobility and a horizontal root fracture of tooth #11. Immediate implant placement (Straumann, Basel, Switzerland) was planned with extraction, but adequate torque for immediate loading was not achieved. The buccal gap was grafted and primarily closed. To preserve soft tissue architecture, a provisional ovate pontic was fabricated from the extracted tooth's crown and bonded to adjacent teeth. After healing, a conventional impression was taken with type A silicone, scanned, and designed using Exocad. A provisional restoration was 3D printed (Dentafab, İstanbul, Türkiye) and placed with a Ti-base. Weekly soft tissue contouring with composite resin was performed until ideal tissue form was achieved. Following a three-week maturation, an intraoral scan was taken, and a zirconia framework was milled and tried in. Final impressions were made, and the restoration was completed with feldspathic porcelain. The Ti-base was torqued to 30 Ncm, screw access sealed, and occlusion checked. The patient was scheduled for regular follow-ups to monitor implant success and tissue health.

Discussion: Recent evidence supports flapless implant placement with socket grafting at the time of extraction for improved outcomes. In this case, although immediate loading was not possible, a provisional ovate pontic preserved the soft tissue profile. Minor contouring was still needed during final restoration, but the process was faster. Maintaining esthetics throughout enhanced the patient's social comfort and treatment compliance.

Keywords: emergence profile, soft tissue management, ovate pontic, immediate loading

PP-246 Weibull Characteristics and Modulus Calculation in Adhesion Studies: A Methodological Investigation

Florentin Berisha[1], Alpaslan Sener[1], Angelo Cankja[1], Berre Uzun Pekintürk[2], Luiza Freitas Brum Souza[1], Mutlu Özcan[1]

([1]Clinic for Masticatory Disorders and Dental Biomaterials, Zurich University, Zurich, Switzerland; [2]Department of Pediatric Dentistry, Istanbul Health and Technology University, Istanbul, Turkey)

OBJECTIVE: This study aimed to determine the minimum number of specimens required to obtain statistically reliable conclusions in adhesion studies using the Weibull statistic and to estimate the probability of failure under defined conditions.

MATERIALS-METHODS: Specimens (N=160) were prepared from resin composite (RC: Brilliant, Coltene), lithium disilicate (LD: IPS e.max Press, Ivoclar), zirconia (YZ: Z-CAD, Metoxid AG), and titanium (TI: Ti CP Grade 4, Permascand). RC, YZ, and TI were air-abraded (50 µm Al_2O_2, 2.5 bar, 10 s), and LD was etched with 5% hydrofluoric acid (20 s). Resin cement cylinders (Ø=3×4 mm) were bonded using one of the following: Variolink Esthetic DC (Ivoclar), Panavia V5 (Kuraray Noritake), Panavia 21 (Kuraray Noritake), or Multilink Automix (Ivoclar). The combinations tested were as follows: RC-Variolink Esthetic DC/Panavia V5; LD-Variolink Esthetic DC/Panavia V5; YZ-Panavia 21/Multilink Automix; TI-Panavia 21/Multilink Automix. Half of the specimens were stored at 37 °C for 24 h; the other half underwent thermocycling (x6000, 5-55 °C). Shear bond strength was tested (1 mm/min), and failure modes were assessed under digital microscopy. Weibull analysis evaluated bond reliability for 10, 20, 30 and 40 specimens in each group. Maximum likelihood estimation and 95% confidence intervals determined differences.

RESULTS: For RC, Variolink Esthetic DC showed higher characteristic strength (η) at n=10 and 20 vs. n=30 and 40. Panavia V5 showed a significant decrease from n=10 to 40 only in the non-aged condition. In LD, both cements showed decreasing η with increasing n. In YZ and TI, both Panavia 21 and Multilink Automix showed reduced characteristic strength with increasing n. Failures were mainly cohesive in LD but adhesive with the other materials.

CONCLUSIONS: Increasing sample size reduced characteristic strength (η) across all materials, indicating that small sample sizes overestimate adhesive performance. Larger samples yield more reliable estimates. The Weibull modulus (β) remained stable or increased slightly after aging, especially for zirconia.

Keywords: Adhesion, Dental Materials, Prosthodontics, Weibull, Methodology

PP-247 Zirconia Implant-Supported Monolithic Restoration in the Management of Titanium Hypersensitivity

Hazal Kolbaş[1], Ali Rıza Kolbaş[2], Ayşegül Cavnar[1], Mustafa Kocacikli[1]

([1]Departmant of Prosthodontics, Gazi University, Ankara, Turkey; [2]Private clinician)

INTRODUCTION: This case report presents the prosthetic and surgical management of a patient who has documented titanium allergy. In light of the hypersensitivity, a highly biocompatible alternative treatment approach was adopted, involving the placement of a zirconia implant followed by a monolithic zirconia restoration.

Case Report: A 66-year-old patient who has lost his right 2 molars presented to the Gazi University Faculty of Dentistry. Clinical and radiographic examinations revealed the absence of teeth #46 and #47 in the mandibular right posterior region. The treatment plan involved implant placement in the edentulous area.

Detailed anamnesis revealed a known hypersensitivity to titanium is making titanium-based implants contraindicated. As an alternative, two zirconia implants (Z-Systems®, Switzerland) were selected due to their favorable biocompatibility. The implants were surgically placed, and 3-month osseointegration period was allowed.

Prosthetic Procedure: Following osseointegration, an intraoral digital impression was taken using a Trios 5 scanner (3Shape®, Denmark) and compatible Z-Systems® scan bodies. The digital data were transferred to Exocad® software for prosthetic design. Based on the design, a monolithic zirconia bridge was milled from a zirconia block (Aidite-Aizir®, China). The bridge was fabricated according to zirconia abutments and cemented extraorally using a resin-based adhesive cement (G-CEM ONE®, GC Corp., Japan), following the manufacturer's bonding protocol.

The abutments were torqued to the zirconia implants according to the Z-Systems® protocol using an occlusal screw until tactile resistance (screw fracture point) was reached. Screw access holes were sealed with teflon tape and a flowable composite resin (Wave®, SDI, Australia). After occlusal adjustment, the final prosthesis was delivered to the patient.

CONCLUSION: This case highlights the clinical viability of zirconia implants in patients with titanium hypersensitivity. Digital workflows combined with all-ceramic materials allow for precise, biocompatible, and esthetically pleasing outcomes. Zirconia implants represent a strong alternative for selected patients when titanium is contraindicated.

Keywords: titanium allergy, zirconia implants, zirconia abutment, monolithic, digital workflow

PP-249 Zygoma Implant and All-on-four Supported Prosthetic Restoration in Severely Atrophic Jaws: A case report

Idris Kavut[1], Emin Can Ünlü[1], Kübra Songül Bozan[1], Yusuf Rodi Mızrak[2], Onur Bahar[2]

([1]Deparment of Prosthodontics, Van Yuzuncu Yil University, Van, Turkey; [2]Deparment of Maxillofacial Surgery, Van Yuzuncu Yil University, Van, Turkey)

AIM: Implant-supported prosthetic restorations are routine treatments for edentulous patients. However, this is not possible in every case. In atrophic jaws, zygomatic implants, all-on-four concept can be used as an alternative to advanced surgical techniques.

CASE: A 41-year-old female patient who comes to the prosthetic dentistry clinic was examined and it was observed that she had teeth numbered 15, 23, 31,32, 33, 41, 42, 43 and that she had poor bone support periodontally. The patient requested implant-supported prosthetic restoration. After the extraction of all teeth, 4 zygomatic implants were planned for the maxilla and all-on-four concept for the mandible due to the atrophic crest. During the implant placement, multiunits were placed and osteointegration was awaited. After healing, it was deemed appropriate to have an acrylic hybrid prosthesis. For the prosthetic restoration, an additional type impression was taken, the necessary rehearsals were made and delivered to the patient.

RESULT: Zygoma implant and all-on-four techniques offer a more comfortable process in a shorter time without the need for advanced surgical procedures.

Keywords: zygoma implant, all-on-four, hybrid prosthesis

PP-250 Post-Processing Protocols in 3D Printed Dental Restorations: A Literature-Based Data Analysis

Selen Elif Mert[1], Yiğit Alp Özkan[1], Abdullah Yaşar Olkun[1], Esra Ayşe Dilaverler Yardım[2]

([1]PHD Candidate, Department of Prosthodontics, İstanbul Health and Technology University, İstanbul, Turkey; [2]Assist. Prof., Istanbul Health and Technology University, Faculty of Dentistry, Department of Prosthodontics, Istanbul, Turkey)

OBJECTIVES: This literature-based data analysis aims to evaluate the effects of post-processing protocols on the physical, mechanical, and surface properties of dental restorations produced using 3D printing technologies (SLA, DLP, and LCD systems). The objective is to highlight the variability in current approaches and thematically analyze the clinical implications of these differences.

MATERIALS-METHODS: A systematic search of the literature published between 2018 and 2025 was conducted using PubMed, Scopus, and Web of Science databases, in accordance with PRISMA guidelines. Inclusion criteria were: (1) studies involving 3D printed resins, (2) evaluation of at least one post-processing variable (e.g., curing, cleaning, or support removal), and (3) focus on definitive or interim prosthodontic restorations. Studies involving orthodontic models, aligners, or CAD/CAM-milled restorations were excluded. The included studies were categorized into three groups: curing protocols, cleaning procedures, and support structure removal. Due to methodological heterogeneity, no meta-analysis was performed; instead, findings were interpreted through a descriptive, literature-based data analysis approach.

RESULTS: A total of approximately 320 unique studies were identified through prior systematic and narrative reviews. After applying predefined inclusion criteria, 12 studies were selected for in-depth evaluation in this literature review. Although some included studies were systematic reviews and meta-analyses, this study did not perform an independent meta-analysis. Variations in curing time, light intensity, and atmospheric conditions were found to affect degree of conversion, microhardness, and flexural strength. Cleaning protocols involving different solvents and application techniques influenced surface roughness and dimensional accuracy. The support removal process impacted marginal adaptation, surface integrity, and gloss retention. Despite methodological differences, the overall evidence indicates that post-processing parameters significantly influence clinical performance outcomes.

CONCLUSION: This analysis demonstrates that post-processing protocols significantly affect material quality and clinical applicability. The findings underscore the need for manufacturer-independent, standardized protocols to ensure predictable outcomes in 3D printed dental restorations.

Keywords: “3D printed dental resin”, “post-processing”, “curing”, “cleaning protocol”, “support removal”, “standardization”

PP-251 A Conservative Restorative Approach to Endodontically Treated Teeth with Excessive Crown Damage: Endocrown Application

Kader Çiçek, Emrah Ayna

(Protetik diş tedavisi bölümü,Dicle üniversitesi, Diyarbakır,Tükiye)

PURPOSE: Endocrown is an alternative restorative approach to post-core and full crown applications, particularly used in endodontically treated teeth with extensive coronal tissue loss. This method utilizes the pulp chamber and cavity walls to achieve retention through adhesive bonding, eliminating the need for post placement within the root.

CASE: An 18-year-old patient presented to our prosthodontics clinic and was found to have undergone root canal treatment on tooth 26, which showed extensive crown damage. To preserve the existing tooth structure, the decision was made to perform endocrown treatment as an alternative to post-core or full crowns. The necessary cavity preparation was performed. Digital impressions were taken with an intraoral scanner and transferred to the laboratory. The restoration was prepared using CAD/CAM technology. The restoration was bonded to the cavity with adhesive resin cements. Following intraoral adaptation, the restoration was delivered to the patient.

CONCLUSION: Indirect endocrown restorations are among the treatment options that allow the preservation of the remaining tooth tissue and the achievement of aesthetic and long-lasting restorations in the restoration of root canal-treated teeth with excessive material loss.

Keywords: Endokron,adeziv restorasyon,tam seramik,aşırı madde kaybı

PP-252 Digital Restorative Approach in Amelogenesis Imperfecta: Smile Design and Functional Rehabilitation with All-Ceramic Crowns

Sinem Gümüş[1], Gökhan Akgüngör[2]

([1]PhD student, Department of Prosthodontics, Faculty of Dentistry, Istanbul University, Health Science Institute, Istanbul, Turkey; [2]Professor, Department of Prosthodontics, Faculty of Dentistry, Istanbul University, Istanbul, Turkey)

INTRODUCTION: Amelogenesis Imperfecta (AI) is a rare hereditary condition that affects enamel development and presents significant esthetic and functional challenges. This case report presents the digital full-mouth rehabilitation of a young female patient diagnosed with AI, using a minimally invasive and fully digital workflow.

Case Description: A young female patient presented to our clinic with generalized enamel loss, severe discoloration, and fractured or missing restorations. A full-mouth prosthetic treatment plan was established. Crown lengthening procedures were performed to increase clinical crown height and optimize prosthetic contours. Initial digital impressions were taken, and a digital mock-up (smile design) was created to guide the treatment plan.

Minimal invasive preparations were performed on all teeth. The patient wore provisional crowns for both esthetic and functional evaluation. Final impressions were also captured digitally. The dental laboratory designed the restorations using Exocad software. The patient's vertical dimension of occlusion, which had collapsed due to tooth wear, was re-established and verified through mock-up and try-ins.

Zirconia frameworks were fabricated and tried in. Final restorations were completed with layered lithium disilicate (E.max) ceramics, combining strength with superior esthetics. The result was a significant transformation in the patient's oral function, smile, and self-confidence.

Discussion: This case highlights the importance of a digital and interdisciplinary approach in treating complex AI cases. The use of digital impressions, CAD/CAM technology, and virtual design allowed for precise, efficient, and conservative treatment. This workflow enhanced both clinical accuracy and patient comfort, achieving long-term functional and esthetic success.

Keywords: Amelogenesis Imperfecta, Full-Mouth Rehabilitation, Digital Dentistry, Smile Design, Zirconia, E.max