

2022 SCIENTIFIC POSTER COMPETITION WINNERS



1st Place Winner Undergraduate Clinical Case Steven Katz New York University College of Dentistry

Elevating A Smile After Orthodontics Using Feldspathic Porcelain Veneers

When a patient desires to elevate their smile after finishing their orthodontic treatment, dental practitioners can depend on restorative materials to help achieve their desired aesthetic goals. Minimal preparation with feldspathic porcelain veneers is an ultra-conservative choice for aesthetic treatment that can enhance the shape and color of teeth. When tooth preservation is the patient's priority, the combination of supportive orthodontics, minimal preparation, and good communication with the dental lab technician is key to accomplishing these aesthetic goals.

CC: "I just finished my Invisalign and hate my smile. They're straight, but I have translucent, chipped edges. I want white, straight across teeth" This case shows a method in elevating a patient's smile, by rejuvenating shape and color, using aesthetic principles and materials, when orthodontics alone can't fulfill a desired result.

Faculty Mentors: Dr, John Calamia, Dr. Nicholas J. Giannuzzi, Larry Passaro



2nd Place Winner Undergraduate Clinical Case Andrew Shupe New York University College of Dentistry

Esthetic and Functional Synchrony Established Through Modern Esthetic Smile Design Techniques

Chief Complaint: "I don't like the gaps between my teeth, and I want to have a beautiful white smile"

Open gingival embrasures, or "black triangles", are caused by gingival recession, which occurs when the gum recedes away from the teeth. Gingival recession stems from a variety of different factors including, but not limited to, aging, abrasive dental hygiene methods, and gum or bone disease. This issue, no matter the origin, can cause a person to become insecure about their teeth and the overall look of their smile.

Previous dental history included a 5-unit bridge placed on teeth 23-27 which now presented loose and deemed to be no longer acceptable to the patient.

Most recent dental therapy done at NYUCD included newly placed implant crowns on teeth 3, 14, 19 and 30.

A comprehensive treatment plan was established in order to address the patient's goals/expectations without sacrificing oral function. The treatment plan included feldspathic porcelain veneers on teeth 4-13, 20, 21, 28, 29, extraction of teeth 23/26 and a PFM bridge #22-27.

Faculty Mentors: John Calamia, DMD, Larry Passaro



3rd Place Winner Undergraduate Clinical Case Sara Alonso New York University College of Dentistry

Laser Gingivectomy and Polychromatic

Gingival symmetry and biologic width play a vital role in the perception of an overall pleasing smile. When planning procedures such as soft tissue crown lengthening, the successful outcome of a direct restoration will be related to the ability of the clinician to control the surgical site. The use of lasers provide benefits that not only enable the dentist to better visualize the site but allows for better control in contouring soft tissue, keeping a harmonious esthetic and functional relationship between the soft tissues of the periodontum and the tooth structure to be restored.

Faculty Mentor: Kenneth Magid, DDS



1st Place Winner Post Graduate Material Science

Nasreen Akbar Tufts University School of Dental Medicine

The Effect of Milling and Sintering Methods on the Translucency of Polychromatic Zirconia Ceramics

The purpose of this in-vitro study was to investigate and compare the effects of speed sintering and slow sintering duration on the translucency of zirconium oxide ceramics using ZirCAD MT Multi blocks and discs, and Katana STML blocks and discs via spectrophotometry. The null hypotheses were 1) there was a difference between slow sintering and speed sintering, and 2) there was a difference between the two Zirconium materials in translucency.

Faculty Mentors: Aikaterini Papathanasiou, DDS, DMD, Aikaterini Kostagianni, DDS, DMD, MS, Yukio Kudara, CDT, MDT, RDT, Matthew D. Finkelman, PhD, Ali Muftu, DMD, MSc



1st Place Winner Post Graduate Clinical Case Shahad Abulhamael Tufts University School of Dental Medicine

Esthetic Rehabilitation of Maxillary Anterior Teeth Using a Minimal Invasive Approach: A Case Report

A 31-year-old male presented for rehabilitation of his missing maxillary central and lateral incisors. The treatment rendered demonstrates the restoration of severely facially-inclined implants in the esthetic zone. The final prosthesis included the fabrication of a multilayered cement-retained zirconia partial denture (FPD) replacing #7-10 teeth with pink porcelain and full coverage crowns on maxillary canines.

Faculty Mentors: Maria Avrampou, DDS, MS, Dr.med.dent, MAS, DMD, Gustavo Mahn Arteaga, DDS, MS, Aikaterini Papathanasiou, DMD, DDS, Aikaterini Kostagianni, DDS., DMD., MS



2nd Place Winner Post Graduate Clinical Case Mohanned Alghamdi

Tufts University School of Dental Medicine

The Use of Angulated Screw Abutments in the Esthetic Zone: A Case Report

A 46-year-old male presented for rehabilitation of his maxillary central and lateral incisors. The teeth were periodontally compromised and deemed non restorable. Extraction of teeth #7-10 was recommended followed by a screw-retained implant supported fixed dental prosthesis (ISFDP) and crowns on teeth #6 and #11. Inclination of implants #7 and #10 was too facially and did not allow for a conventional screw retained prosthesis. Thus, this case report describes an alternative design that facilitated the fabrication of a screw retained ISFPD.

Faculty Mentors: Aikaterini Papathanasiou DMD, DDS, Aikaterini Kostagianni, DDS, DMD, MS, Panagiotis Papaspyridakos DDS, MS, PhD, Maria Avrampou, DDS, MS, Dr.med.dent, MAS, DMD.



3rd Place Winner Post Graduate Clinical Case Nasreen Akbar Tufts University School of Dental Medicine

Esthetic Rehabilitation of Maxillary Anterior Teeth

A 50-year-old female presented for replacement of her existing maxillary anterior crowns. Her chief complain was the unnatural appearance of her smile and perception of aged appearance due to the lack of incisal display. Clinical examination revealed:

-PFM crowns #7-#10, which depicted nonesthetic appearance (axes, shade, form, proportions, texture, etc.)

Faculty Mentors: Aikaterini Papathanasiou DMD, DDS, Panagiotis Papaspyridakos DDS, MS, PhD, Maria Avrampou, DDS, MS, Dr.med.dent, MAS, DMD



HEAPS Winner Paula Barbisan Harvard School of Dental Medicine

Optimizing Esthetics and Function of Anterior Maxillary Teeth Using Lithium Disilicate Ceramic Restorations: A Case Report

45-year-old patient presented with a chief complaint of "I'm not happy with my front teeth appearance. I have fillings on my front teeth, and they have different colors"

- The patient presented with multiple composite resin restorations, performed due to previous caries and black triangles as a result of history of periodontal disease.
- Patient's expectation: achieve a natural smile with a higher value and uniform shade of anterior teeth.
- Provider's expectation: improve form, function and esthetics.

Faculty Mentor: Hiroe Ohyama DMD, MMSc, PhD, DMD

Optimizing esthetics and function of anterior maxillary teeth using lithium disilicate ceramic restorations: a case report



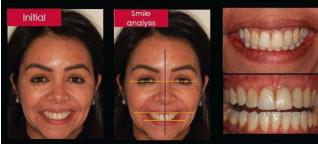
Paula Furlan Bavia¹; Peter C. Grieco, DDS, DMSc²; Hiroe Ohyama, DMD, MMSc, PhD, DMD³, Russell Haywood Taylor, DMD, MSc, BSc⁴.

¹DMD Candidate, Class of 2022; ²Instructor in Restorative Dentistry and Biomaterials Sciences, Harvard School of Dental Medicine; ³Assistant Professor in Restorative Dentistry and Biomaterials Sciences, Harvard School of Dental Medicine. ⁴Lecturer in Restorative Dentistry and Biomaterials Sciences, Harvard School of Dental Medicine.

Harvard School of Dental Medicine

Introduction

- 45-year-old patient presented with a chief complaint of "I'm not happy with my front teeth appearance. I have fillings on my front teeth, and they have different colors"
- The patient presented with multiple composite resin restorations, performed due to previous caries and black triangles as a result of history of periodontal disease.
- Patient's expectation: achieve a natural smile with a higher value and uniform shade of anterior teeth.
- Provider's expectation: improve form, function and esthetics.



Pre-treatment clinical analysis – Smile arc: consonant; incisor display: 100% maxillary and 10% mandibular teeth; gingival display: 1-2 mm (moderate smile); over contoured and discolored composite restorations.



Pre-treatment occlusal view.



Pre-treatment radiographic analysis — Moderate anterior bone loss; over contoured composite resin restorations (teeth #7; 8; 9 and 10). Root canal treatment (RCT) teeth #9 and #11.

Assessment & Treatment plan

- Clinical analysis demonstrated heavily restored dentition with over contoured and discolored composite resin restorations compromising esthetics.
 In addition, there was absence of right canine guidance during dynamic
- excursive movements.

 o Tooth #5: secondary caries on a MOD composite resin + defective class V
- olooth #5: secondary caries on a MOU composite resin + defective class v composite resin, thus a full-coverage crown was recommended.

 Tooth #6: sound, with absent canine guidance, a full-coverage crown was
- recommended to re-establish canine guidance.

 Teeth #7-#11: restored with over contoured and discolored restorations and
- RCT (teeth #9 and #11), thus full-coverage crowns were recommended.

 Tooth #12: defective class V composite resin and tooth was lingualized. A facial veneer was recommended to re-establish arch contour.
- Current clinical evaluation and long-term prognosis for esthetic and function improvement were considered to establish the treatment plan.

Methods

- Teeth #5-11 were prepared for full-coverage lithium disilicate crowns.
- Tooth #12 was prepared for a lithium disilicate facial veneer.
- Provisional crowns were fabricated with bis-acryl composite (Integrity®, Dentsply Sirona) based on diagnostic analysis and delivered with functional occlusion.
- Function, phonetics and esthetics were evaluated and approved by the provider and the patient prior to fabrication of final restorations.
- Final impression was taken with heavy and regular PVS impression material (Examix™, GC America).
- B1 shade was selected using VITA classical A1-D4° (Vita North America).
- Final lithium disilicate crowns and veneer were fabricated and cemented with dual cure 3M™ RelyX™ Ultimate adhesive resin cement.



Pre-treatment lateral excursions with absence of right canine guidance.

Final Outcomes





Final

















Post-treatment radiographs showing good marginal adaptation of crowns.

 All the patient's expectations were achieved by providing an esthetic, functional, and predictable treatment with an excellent long-term prognosis.

Reference: Ohyama H, Nagai S, Tokutomi H, Ferguson M. Recreating an esthetic smile: a multidisciplinary approach. Int J Periodontics Restorative Dent. 2007 Feb;27(1):61-9.



HEAPS Winner

Homais Qadri University of Texas Science Center at Houston School of Dentistry

A New Beginning: Creating Esthetic Results with Non-Ideal Parameters

As the importance of esthetics continues to become more prevalent in our society, clinicians frequently face the task of creating the seamless smile for their patients. Although it is very easy to say, there are numerous clinical variable that are taken into consideration when addressing a patient's esthetic complaint. The objective of this case is to exhibit how to manage non-ideal situations while creating an esthetically pleasing smile.

In this case, many factors played a role in the treatment planning process and during treatment. The patient ES in this case presented with lingual tipping of #8, three missing anterior teeth, and an occlusal cant. However, with proper treatment planning, great esthetics can be achieved. FPDs/crown were fabricated using esthetic zirconia and the patient was overjoyed with the final result

Faculty Mentors: DS4; Mentor Claudia Ruiz Brisuela, DDS; Mentor Joe C. Ontiveros, DDS, MS.



School of Dentistry

Homais Qadri*, DS4; Mentor Claudia Ruiz Brisuela, DDS1; Mentor Joe C. Ontiveros, DDS, MS1. University of Texas School of Dentistry, Houston, Texas, USA

A New Beginning: Creating Esthetic Results with Non-Ideal Parameters

1 Department of Restorative Dentistry and Prosthodontics

ABSTRACT

As the importance of esthetics continues to become more prevalent in our society, clinicians frequently face the task of creating the seamless smile for their patients. Although it is very easy to say, there are numerous clinical variable that are taken into consideration when addressing a patient's esthetic complaint. The objective of this case is to exhibit how to manage non-ideal situations while creating an esthetically pleasing smile.

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CASE DESCRIPTION

ES is a 41-year-old male that presented to UTSD predoctoral clinic with a chief complaint of "I want all the metal on my front teeth out of my mouth and replaced with something more esthetic as soon as possible." Patient stated that #10 was congenitally missing and #6 and #11 were extracted at a young age due to ectopic eruption. Additionally, the patient explained that he had open-window metal FPDs placed 21 years ago without anesthetic and avoided the dentist as much as possible ever since. Orthodontic therapy was recommended to restore proper occlusion and crown lengthening to create proper gingival contour, but patient declined treatment options. In order to satisfy patient's chief complaint, it was recommended that teeth be restored with esthetic zirconia. A treatment plan was created by replacing FPDs on #5-#7 and #9-#12 and a crown on #8 with esthetic zirconia. Patient presented with occlusal cant and lingual tipping of #8. It was explained to patient the increased complexity due to three missing anterior teeth, lingual tipping, and canting and that we would try for the best results. Other treatment planned were SRPs and two posterior restorations.

Problem list:

Missing #6, #10, and #11 Lingual tipping of #8

Anterior spacing Occlusal cant







Preparation of FPDs and crown

Removal of existing FPDs



Provisional restoration

RESULTS









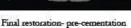






Post-treatment view Pre-treatment view







Pink porcelain on pontic

METHODS

A full mouth series and a comprehensive oral examination was completed at initial appointment. Extraoral and intraoral photos were taken during the treatment planning appointment. At following appointment, SRPs and patient's restorative needs were completed before moving to esthetic treatment plan. Diagnostic impressions were taken and casts were sent for a diagnostic wax-up. Patient was presented with diagnostic wax-up and was satisfied with initial esthetics.

Shade was first chosen and photographed for laboratory reference. Existing FPDs were removed from #5-#7 and #9-#12 and abutments were visualized. All caries were removed, and necessary build-ups were completed. Teeth #5, #7, #8, #9, and #12 were prepared for esthetic zirconia crown/FPDs using a preparation guide made from the diagnostic wax up. PVS (Aquasil) impressions were taken and blue mousse bite registration was taken. Provisional restoration was fabricated from bis-acrylic resin (Integrity, Dentsply Caulk) using an impression of the diagnostic wax up. The patient was ecstatic with temporary results and was ready for final restorations. Detailed lab prescription was sent along with photos.

In preparation for try-in and cementation, the internal of FPDs/crown were coated with MDP primer (Z-Prime, Bisco). Restorations were tried in for fit, and color using try-in paste, and presented to patient. Patient consented for shade/shape of FPDs/crown. The teeth were cleaned with a chlorhexideine antibacterial slurry (Consepsis Scrub, Ultradent) before etching with 37% phosphoric acid) and bonded with universal adhesive (Scotchbond Universal, 3M ESPE) The FPDs/crown were then cemented with light-cure resin cement (RelyX Veneer, 3M ESPE). Impressions were taken for night guard and patient was presented with final results. Patient was emotional and said that he was waiting for this day for 21 years and that his life has completely changed.

CONCLUSION

Overall, this case showed the importance of detailed treatment planning and patient management in creating an esthetically pleasing smile. Good communication with laboratories is critical in order to produce the high level of quality of results that is desired. It is important to establish realistic expectations with the patient considering non-ideal parameters that can complicate treatment. Through the cooperation of the dentist, the laboratory, and the patient, a beautiful smile was created and ultimately left the patient thrilled with the final results.

ACKNOWLEDGEMENTS

Diagnostic wax-up- Champions Crown & Bridge Laboratory Final Restorations- NanoArts Dental Studio, Shin Ashina



HEAPS Winner Fareed Tareen New York University

Esthetic and Functional Rehabilitation Using Porcelain Fused to Zirconia (PFZ) Restorations

• 82-year-old male presented to Honors Esthetics with chief complaint:

"I want to look like a Hollywood star."

- Initial conversation focused on understanding patient's goals and presenting and informing patient about treatment options
- After comprehensive exam, full coverage restorations were decided upon due to patient's pre-existing heavily restored dentition

Faculty Mentors: Dr. Fred Puccio, Dr. Kenneth Magid, Mr. Larry Passaro



Esthetic and Functional Rehabilitation Using Porcelain Fused to Zirconia (PFZ) Restorations

Fareed Tareen | Honors Esthetics | NYU College of Dentistry



results



abstract

- 82 year old male presented to Honors Esthetics with chief complaint: "I want to look like a Hollywood star."
- Initial conversation focused on understanding patient's goals and presenting and informing patient about treatment options
- After comprehensive exam, full coverage restorations were decided upon due to patient's pre-existing heavily restored dentition





methods

- NYU Dentistry's Smile Evaluation Form utilized for dentofacial analysis
- Study models were articulated using the Kois Dento-Facial Analyzer
- Shade A1 Selected











 Preparation of upper right quadrant completed upon sectioning pre-existing crown on #4 and CompCore buildup of #3 & #5. Chamfer margins. Temporized quadrant with PVS matrix created on original upper right sextant utilizing Luxatemp, DMG.



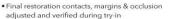
 Preparation of upper anteriors and lower arch conducted through Aesthetic Pre-Evaluative Temporaries (APT) fabricated with Luxatemp, DMG



 BIOLASE Diode Laser utilized in select region (#13) for gingivoplasty during final impression



 Upper & Lower arches simultaneously temporized with Shade A1 Luxatemp, DMG using PVS matrix created on final wax up







summary

- 20 full coverage restorations (12 upper units and 8 lower units) were utilized to achieve both esthetic and functional harmony
- Patient's esthetic desires met

referances

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Monley J. Elbosei J. Marcrestellance sements of energy and begin J. Am. Dec. 2001 Jan. 193(1):034-56. doi: 10.1410/jasis-service.2002. PMIC: 1194937.



HEAPS Winner

Rachel Travieso
Nova Southeastern University College of
Dental Medicine

Restoring Missing Teeth and Function, Anterior Diastema Closure and Esthetic Improvement Using Implants and Porcelain Fused to Zirconia Crowns

Chief Complaint: "I want to have implants" Medical History:

74-year-old male patient taking Losartan 100 mg qd for HTN, Atorvastatin 20 mg qd for high cholesterol, Tamsulosin 0.4 mg qd for benign prostatic hyperplasia, Levothyroxine 50 micrograms gd in the morning for Hypothyroidism and Allopurinol for gout every other day. Patient denies any allergies, tobacco or drug use, drinks wine socially.

Dental History: Patient presents missing teeth for more than 10 years ago.

Faculty Mentors: Liliana Mosqura, DDS



Restoring missing teeth and function, anterior diastema closure and esthetic improvement using implants and Porcelain Fused to Zirconia crowns

College of Dental Medicine NOVA SOUTHEASTERN UNIVERSITY

Rachel Travieso, Senior Dental Student; Aryia Amini, Department of Restorative Sciences and Public Health Dentistry
Nova Southeastern University, College of Dental Medicine

Clinical Case

Chief Complaint: "I want to have implants"

Medical History: 74-year-old male patient taking Losartan 100 mg qd for HTN, Atorvastatin 20 mg qd for high cholesterol, Tamsulosin 0.4 mg qd for benign prostatic hyperplasia, Levothyroxine 50 micrograms qd in the morning for Hypothyroidism and Allopurinol for gout every other day. Patient denies any allergies, tobacco or drug use, drinks wine socially.

Dental History: Patient presents missing teeth for more than 10 years ago.

Assessment

Clinical Exam: Clinical evidence of staining on the central grooves of maxillary molars, missing crown with previous core-build up on #4 (fig 4a), diastema between #8 & 9, super erupted # 11 and missing #10, 12 & 13 (fig 3a).

Radiographic Exam: Radiographic evidence of mild to moderate horizontal bone loss

Esthetic & functional evaluation: Patient presented the midline shifted to the right due to diastema between teeth #8 & 9. A low lip line was also evident (fig 2a), which will help with any asymmetry at the cervical areas in future restorations. Patient exhibits no anterior guidance due to severe wear anteriorly (fig 3a) and lack of left canine guidance.

The patient would like to have esthetic improvement with minimum teeth involved and not a complete smile makeover of the entire

Treatment Plan

In order to achieve optimal oral health, a multiple phases treatment plan needed to be completed. The disease control treatment plan included OHI, high concentration Fluoride toothpaste and Fluoride varnish at every hygiene appointment, periodontal debridement and scaling and maintenance recare appt every 3-4 months. The definitive phase included a zirconia crown for tooth #4 and three implants on-site of #10, 12 & 13 to address the patient's chief complaint. A cosmetic treatment plan was presented to the patient. A diagnostic mock-up (fig 5) was done, and the patient decided to follow the treatment plan that included anterior crowns and implants from tooth #8 to 13.

Before After Flg 3b

References

Gomez-Mada R., Esquivid J., Bitat MB. The enthetic biological contour concept for implant restoration emergence profile lessing. I Sichar Besto Pears. 2013;31:73-544.

Ferrieri M., Carrativa M., Vichi A., Goracci C., Cagdileco MC., Influence of Abutment Color and Mucosal Thiotness on Soft

Clinical procedure steps

Tooth #8, 9 and 11 were prepared for PFZ (Porcelain Fused to Zirconia) crowns. Provisionals for crowns 8, 9 & 11 as well as implant provisionals for teeth #10, 12 & 13 were done using Acrylic material (fig 6). The emergence profile designs of the implants (fig 7) were created during several appointments to obtain a more stable peri-implant tissue.

To achieve optimal esthetics results, a Titanium Nitride (TiN) abutment was used for implant #10 (Fig 8). A study published in The International Journal of Oral & Maxillofacial Implants found that different abutment materials can highly influence soft tissue color, especially in anterior implants. Posterior implants #12 & 13 were chosen as Titanium (Ti) abutments. Atlantis custom titanium abutments were tried-in and an x-ray was taken to check the position of the abutment and proper seating (Fig 9 &10)







Ela 9 8 10

Individual PFZ crowns were chosen for teeth #8, 9 & 11 due to minimum lingual clearance of the crown preparations in relation to the lower incisors. PFZ was also selected as the material of choice for implant crowns #10,12 & 13 to provide strength and maximize color match with the crowns and adjacent teeth in the arch. Implant #10 was a cement-retained implant crown due to facial access of the screw, and implants #12 & 13 were screw-retained.

Shade D2 was selected from Vita Classical Shade Guide for the incisal % of the crowns and shade B3 for the gingival % of the crowns.

Scanning and Cementation

Digital scan was used for scanning individual crown preparations, tissue profiles and scan-bodies for the implants (Fig 11). Final crowns were tried-in, occlusion was checked and adjusted accordingly. GC Fuji Plus [®] was used for cementation.













Initial visit Mock-up (fig 5)

Provisionals from #8-#13 (fig 6)

Emergence profiles (fig 7)

Digital Scan (fig 11)

Final restorations