Customised aesthetics for provisional profile prosthesis with ceramage gum

By Dr Alisa Tapananon & Dr Pongrapee Kamolroongwarakul, Thailand

Case Presentation
A 61-year-old Thai female presented with loosening 9-unit fixed dental prostheses (FDPs). Her chief complaint concerned her loose and unappealing front teeth with unsatisfactory removable gingiva. The initial clinical examination revealed a long span Porcelain-Fused-to-Metal (PFM) FDPs of teeth 14-25 fixed with temporary cement since 2009 at private hospital (Fig 1,2). The patient had maxillary hard and soft tissue defects associated with alveolar ridge resorption and loss of lip support. Removable Acrylic Gingival Veneer (AGV) (Fig 3) was used to cover those FDPs in order to improve extra-oral soft tissue profile (Fig 4). Without AGV, the patient has concave profile (Fig 5). FDPs were removed to evaluate the existing abutments condition (Fig 6). Abutment teeth 13,24,25 had first degree mobility. Panoramic XRAY (Fig 7) revealed that tooth 25 had cast post and core with vertical root fracture. Tooth 25 was endodontically treated with periapical lesion. After thorough diagnosis and analysis, the treatment plan was presented to the patient with the following phased treatment approach:

1) Aesthetic evaluation
2) Restorative phase with fabrication of provisional full arch bridge
3) Flapless guided-surgery with immediate loading protocol

Phase 1
Aesthetic evaluation
Aesthetic analysis was performed with evaluation of the smile line, incisal profile, length and proportion. Diagnostic wax-up was fabricated according to the aesthetic evaluation. (Fig 8)

Phase 2
Provisional full arch bridge fabrication (Fig. 8-19)
Preparation cast with a diagnostic wax-up was sent to a local laboratory for scanning and transforming into STL (Stereolithography) digital impression file. (Fig 9) Two sets of STL impressions were super-imposed in the software in order to subtract the overlapping data. This process was done in order to transform the diagnostic wax-up into the STL digital impression. Consequently, the STL data was sent to the laboratory for milling. (Fig 10) A monochromatic milled PMMA temporary bridge was fabricated in a local laboratory and returned to the dentist for composite layering. (Fig 11) Gingival cutback was made to create sufficient gingival space for pink composite layering (Fig 12). Prior to composite layering Ceramelight Bond 1 was applied and left for 10 seconds to prime the surface, followed by application of Ceramelight Bond 2 for 10 seconds and light cured for 20 seconds (Fig 13). Ceramage Indirect Composite gingival shade GUM-O (GUM Opaque).
was applied to mask the color of PRIMA (Fig 14). GUM-D (GUM Dark) was applied on the attached gingiva area to the buccal flange (Fig 15). GUM-L (GUM Light) was applied in order to imitate the free gingival area.

Fig 16. Ceramage GUM light (GUM-L) was applied in order to imitate the free gingival area.

Tour the macro anatomical details of the restoration is a crucial step to achieve the desired aesthetics. Meticulous finishing and polishing were placed according to the pre-operative planning (Fig 23). Suture was removed after surgery 14 days. A final profile prosthesis will be fabricated after implant integration.

Fig 17. Ceramage Flowable GUM Red (F-GUM-R) and White (F-W) were applied to reproduce of reddish translucent gingiva areas.

Flapless guided-surgery with immediate loading protocol was utilized for converting to a provisional screw-retained prosthesis. An immediate loading protocol was utilized. Metal temporary abutments were connected on each implant. The existing provisional bridge was utilized for converting to a provisional screw-retained prosthesis. An immediate loading protocol was utilized. Metal temporary abutments were connected on each implant. Full arch bridge was performed to match the position of the metal temporary abutments, placed in their correct position and OVD, torqued 15 Ncm on each implants (Fig 23).

Phase 3

Flapless guided surgery with immediate loading protocol. The questionable teeth (31, 25) were extracted under local anesthesia. The surgical site was secured in place on the maxillary arch with two anchor pins. (Fig 20) Flapless surgery was performed using guided tissue punch. Sequential drilling were made according to the manufacturer’s protocol. All implants were placed through the surgical template. All implants were torqued 35 Ncm. to ensure primary stability. The extraction socket were filled with small particle Xenograft Bio-Oss, (Geistlich) and covered with resorbable collagen plug (Collar, Zimmer Inc). Straight and angle multi-unit abutments were sealed and torqued 35 Ncm on each implants (Fig 23).

The existing provisional bridge was utilized for converting to a provisional screw-retained prosthesis. An immediate loading protocol was utilized. Metal temporary abutments were connected on each implant. Provisional full arch bridge was performed to match the position of the metal temporary abutments, placed in their correct position and OVD, torqued 15 Ncm on each implants (Fig 23).

AESTHETICS

Contouring finishing and polishing of temporary restoration was applied to mask the color of PRIMA (Fig 14). GUM-D (GUM Dark) was applied on the attached gingiva area to the buccal flange (Fig 15). GUM-L (GUM Light) was applied in order to imitate the free gingival area.

Fig 16. Ceramage GUM light (GUM-L) was applied in order to imitate the free gingival area.

Tour the macro anatomical details of the restoration is a crucial step to achieve the desired aesthetics. Meticulous finishing and polishing were placed according to the pre-operative planning (Fig 23). Suture was removed after surgery 14 days. A final profile prosthesis will be fabricated after implant integration.

Fig 17. Ceramage Flowable GUM Red (F-GUM-R) and White (F-W) were applied to reproduce of reddish translucent gingiva areas.

Flapless guided-surgery with immediate loading protocol was utilized for converting to a provisional screw-retained prosthesis. An immediate loading protocol was utilized. Metal temporary abutments were connected on each implant. The existing provisional bridge was utilized for converting to a provisional screw-retained prosthesis. An immediate loading protocol was utilized. Metal temporary abutments were connected on each implant. Full arch bridge was performed to match the position of the metal temporary abutments, placed in their correct position and OVD, torqued 15 Ncm. to ensure primary stability. The extraction socket were filled with small particle Xenograft Bio-Oss, (Geistlich) and covered with resorbable collagen plug (Collar, Zimmer Inc). Straight and angle multi-unit abutments were sealed and torqued 35 Ncm on each implants (Fig 23).

The existing provisional bridge was utilized for converting to a provisional screw-retained prosthesis. An immediate loading protocol was utilized. Metal temporary abutments were connected on each implant. Provisional full arch bridge was performed to match the position of the metal temporary abutments, placed in their correct position and OVD, torqued 15 Ncm on each implants (Fig 23).

Conclusion

When treatment planning for restored maxilla, it is important to consider a holistic approach which includes replacement of missing teeth, restoration of significant segments of missing alveolar bone and soft tissue contours to achieve optimal esthetics. This case helps to showcase the benefits of using a provisional profile prosthesis fabricated with CRANAGE Gum Colors to help improve extra oral soft tissue profile and result in an aesthetically pleasing maxillary full arch restoration.

Editorial note: A list of references can be obtained from the publisher.

Page 26

About the author

Alisa Tapananon DDS (Mahidol), M.Sc. (Prosthodontics, Mahidol)
Cert. of Advanced Clinical Programme in Aesthetic and Restorative dentistry, UCLA, USA
Full-time faculty, Department of Prosthodontics, Mahidol University, Bangkok, Thailand
Part-time dentist Phayathai 2 Hospital, Bangkok, Thailand

Porprapa Karndroongwanakk DDS (Mahidol), M.Sc (Prosthodontics, Mahidol), AFFAAID
Cert. of Fellowship in Implant Dentistry, Loma Linda University, USA
Part-time faculty, Department of Prosthodontics, Mahidol University, Bangkok, Thailand
Full-time dentist Phayathai 2 Hospital, Bangkok, Thailand
Associate Fellow of American Academy of Implant Dentistry