

Implant-Supported Hybrid Fixed Denture

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In early 2008, a forty-five-year-old female came to our office to replace her old, unaesthetic full upper denture. She had become edentulous on her upper jaw at a very young age [Figure 1]. We fabricated a new full upper denture that satisfied her need at that time by changing the size, shape and color of teeth, following basic guidelines of a full upper denture [Figure 2].

In early 2013, she decided to restore her upper jaw with an implant-supported hybrid fixed denture. Due to the need for extensive bilateral sinus grafts and a deficient maxillary ridge, she was referred to Loma Linda University, School of Dentistry to perform the surgical procedures.

Based on her records from the University to reconstruct her maxilla, Infuse bone graft (rhBMP-2/ACS) by Medtronic and Puros cortical particulate allograft by Zimmer Co. and Bio-Oss by Geistlich, along with titanium mesh were used to augment the deficient ridge vertically and horizontally—both posteriorly and anteriorly and for the bilateral sinus graft under IV sedation.

After those augmentations and a healing period, eight Dentium implants were placed on her maxilla [Figure 3]. Four Dentium implants were also placed on her posterior mandible—two on each side [Figure 6]. After the

integration of the implants, the patient returned to continue with the restorations.

Two preliminary impressions were taken of the upper and lower jaws using Counterfit quick-set silicone by Clinician's choice to fabricate acrylic custom trays. All healing caps were removed and open tray impression copings were placed and hand-tightened [Figures 4 and 5]. Affinis (Coltene/Whaldent) regular body and Colorise (Zhermack) rigid heavy body were used to capture an accurate impression. A verification jig was used in the patient's mouth [Figures 7 and 8] and sections were glued together using Primopattern LC gel made by Primotec and verified on the cast sent by the lab to make sure of the accuracy of the impressions taken [Figure 9]. Then centric relation and vertical dimensions were recorded using basic denture fabrication techniques.

At the following visit, we tried in the upper teeth set in wax and made some corrections and sent back to the lab to complete the case.

At the delivery appointment, we removed all the healing caps. For her fixed hybrid denture, abutments were placed and torqued to 30 N/cm, all eight screws were torqued to 10 N/cm and the holes were sealed by cotton pellets and tooth colored flowable composite [Figure 13]. Holes on the pink part of the denture were sealed with PermaFlow pink by Ultradent [Figure 11]. Lower screw retained implant crowns were torqued to 30 N/cm and the holes were sealed with cotton pellets and flowable composite (Beautiful F00) by Shofu [Figure 12].

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Figure 1: Patient's old denture (2008)



Figure 2: Patient's new denture (2008)



Figure 3: Healing caps



Figure 4: Impresion copings



Figure 5: Impresion copings



Figure 6: Mandibular cast

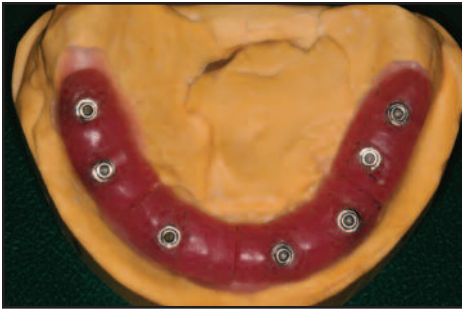


Figure 7: Verification jig



Figure 8: Verification jig in the patient's mouth

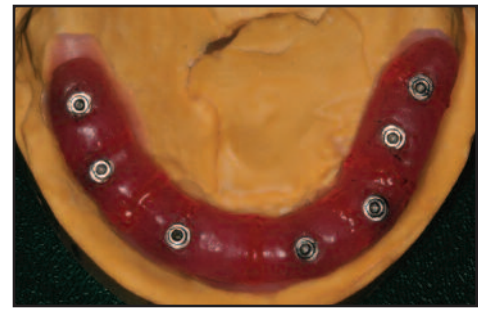


Figure 9: Verification jig on the cast



Figure 10: Fixed upper hybrid denture



Figure 11: Fixed upper hybrid denture



Figure 12: Mandibular posterior implant restorations



Figure 13: Fixed upper hybrid denture



Figure 14: Fixed upper hybrid denture

Instructions on how to keep the restorations clean using woven and tape floss, interdental brushes, the Waterpik, etc. were provided to patient. The patient was scheduled to come in every three months for cleanings.

I thank Creative dental lab in Scottsdale Arizona and Marco Rocha, the Dentium company representative for their assistance with this case.

Dr. Ohanesian is in solo private practice in Anaheim Hills and was a participant in the California AGD's MasterTrack program conducted by Dr. Rich Ringrose.



Figure 15: Fixed upper hybrid denture