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AEGIS COMMUNICATIONS

Step-by-Step

ARTICLE REPRINT VOL. 8 NO. 2

A Unique Reconstruction of an Implant-Retained Denture

USING SHOFU'S VERACIA SA TEETH TO CREATE A RESTORATION WITHOUT DISTURBING EXISTING BARS IN THE MOUTH

By Jim Collis, CDT

AN ELDERLY FEMALE PATIENT presented with an existing upper overdenture retained by two separate implant bars with mesial ERA attachments and two distal Hader bar clips (Figure 1). The existing lower overdenture had two individual implants with ERA overdenture attachments. Both dentures needed replacement (Figure 2); however, due to the patient's financial constraints, only the upper denture was being reconstructed at the time.

The dentist expressed concern about removing the well-functioning upper implant bars due to the risk of breaking the screws or damaging the bars, which had been in the mouth for a number of years. In formulating the treatment plan, the dentist and technician determined that they needed to reconstruct the upper denture completely with new teeth, new acrylic, and new attachments but without removing the existing upper implant bars from the mouth. The dentist said he did not want a treatment plan that would involve cold curing an appliance in the mouth, as he was concerned that this would unduly stress the patient. The following steps describe how the team accomplished replacing the implant-retained upper denture.

The Process

With the upper bars in the mouth, a final impression was taken inside the existing upper denture (Figure 3), picking up the ERA attachments. The next step was to place analogs in the ERA attachments (Figure 4) and to prepare bent braid wires for the retention of the metal bars into the stone cast. Next, the bar areas were poured up in low-fusing metal (Figure 5 through Figure 8). The reason for using low-fusing metal instead of stone was that the metal would not break off during the handling or processing. While the metal was still soft, the braid wires were pressed into the underlying metal. The metal was allowed to cool until solid. Then the final cast was poured into the impression. Once the cast was poured, it was trimmed up and mounted against an opposing cast. Midline and incisal lines were marked on the opposing cast and then the incisal guidance pin on the articulator was set to the existing vertical.

The denture was removed from the cast. The cast was duplicated and an internal metal framework was fabricated for additional support. A try-in was prepared with new teeth on the cast following the markings and measurements that were taken on the old denture. For the setup, Shofu's Veracia SA teeth were chosen because they are a homogenous, micro-filled hybrid composite reinforced with layered glass to provide superb esthetics, long-term durability, and exceptional bonding strength with the denture base. Also, the abrasion zones of the posterior teeth were pre-milled to afford better mastication and movement in the mouth.

After a successful try-in, the case was ready for the processing phase. The case was waxed for a finish and the model was removed from the articulator. The case was then invested following normal press pack procedures. The case was boiled out, removing all wax, and the model was cleaned.

The next step was the placement of the attachments. The black processing pieces of the new ERA attachments were used on the replicas (Figure 9). These black processing pieces were designed to provide for tissueward movement that allows the final attachments to lock

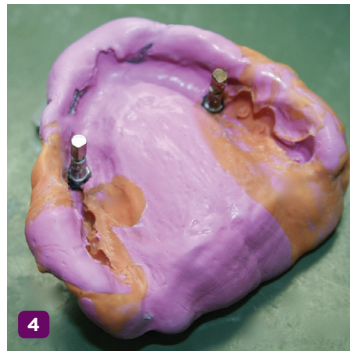

Fig 1. The patient's existing upper overdenture is retained by two separate implant bars with mesial ERA attachments and two distal Hader bar clips. **Fig 2.** Both of the patient's dentures must be replaced. **Fig 3.** With the upper bars in the mouth, a final impression is taken inside the existing upper denture. **Fig 4.** Analogs are placed in the ERA attachments.

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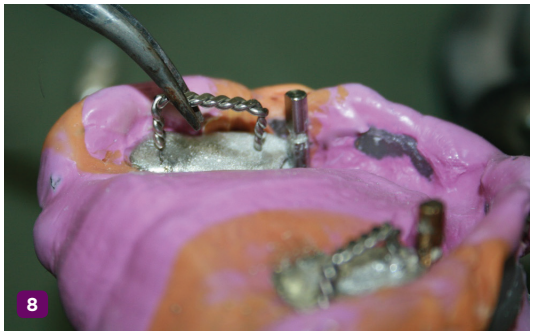
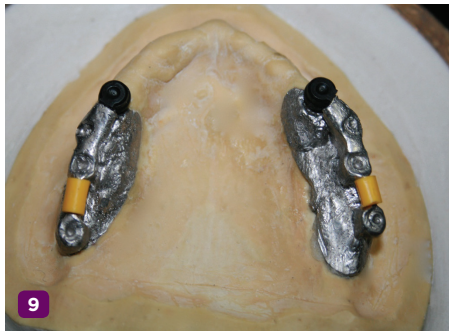


Fig 5 through Fig 8. The bar areas are poured up in low-fusing metal. **Fig 9.** The black processing pieces of the new ERA attachments are used on the replicas. **Fig 10.** The metal housings are placed over the Hader bar clips in preparation for processing.
Fig 11. The case is ready to be pumiced and polished using standard polish procedures. **Fig 12.** The case is delivered for insertion.

into place and sit passively in the mouth after tissue compression. By contrast, if the case had been processed with regular attachments that did not provide for such movement, the processed case could have rocked in the mouth and resulted in breakage.

New Hader bar clips were placed in the distal bar areas. Inside each of these clips was placed a tiny spacer (the length of the clip) that likewise provided for tissueward movement and passive placement following tissue compression. The next step was to place the metal housings over the Hader bar clips in preparation for processing (Figure 10).

The undercuts under the bar and the attachments were blocked out and space was provided around the bars to allow the denture to be inserted and removed from the mouth. Next, separator was applied and allowed to dry. Acrylic was mixed into a doughy state and then half was placed into the tooth half of the flask. Most of the remaining half of the acrylic was placed on the bar side of the flask and the metal framework was settled into place through the acrylic. The remaining acrylic was placed over the framework and the two halves of the flask were pressed together. It should be noted that two trial packs were performed using plastic sheets between the flask halves before final closure. This allowed for trimming of excess acrylic to result in a clean closure.

This case was press packed and processed overnight; however, alternate curing procedures could be used. After the case was removed from the flask, it was trimmed and finished. The black processing pieces of the ERA attachments were removed and replaced with the new permanent attachments. The yellow Hader clips were also replaced in the event of any damage that might have occurred during processing. The case was naturalized using Shofu's Ceramage Gum Color Kit to esthetically enhance the natural gum colors of the denture base. Ceramage is uniquely composed of 73% zirconium, which adds to the product's longevity, luster, and color stability. The manufacturer's directions were followed and after the final light cure, the case was ready to be pumiced and polished using standard polish procedures (Figure 11).

The case was delivered for insertion (Figure 12). The dentist and patient were extremely pleased that it had been possible to accomplish this beautiful, functional restoration without the need to disturb the existing bars in the mouth.

Jim Collis, CDT, is the Owner of Collis Prosthodontic Laboratory in Elmhurst, Illinois.

Manufacturer Contact Information

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