

Step by Step

Milled Bar Overdentures- Protocol and Procedures

CAREFUL PLANNING AND FOLLOWING PROTOCOL TO YIELD PATIENT SATISFACTION

BY Dennis Urban, CDT

WHEN FULL IMPLANT DENTURES requiring a milled bar are prescribed, the proper protocol and procedure are vital. The proper impression, bite registration, verification index, denture tooth setup, internal framework, and bar design are of the utmost importance. There are too many instances where the doctor wants to take a short cut by eliminating the verification index or the setup. Both of these procedures are required for a successful overdenture case.

The author always recommends an internal metal framework for support of the attachments and to increase the strength of the overdenture. Most of the time, when a framework is not incorporated into the overdenture, breakage will occur in the attachment areas. These areas are the weakest because they are not supported by metal and acrylic.

How often has a doctor has asked you to eliminate the metal framework just to save money? A few weeks later, the case is back in the laboratory for a repair and continues to come back until an embedded frame is in placed for support.

The Case

The following case was sent to the laboratory for completion after the models and bite registration were completed by another laboratory. A verification index was previously made (Figure 1), and the doctor was sure the impression and model work were accurate.

The first step was to perform a denture setup so the doctor could check the patient's occlusion to give the dental technician an idea of how much room was available for a milled bar.

After a case consult, it was decided that the best direction to take was to make a milled bar using Rhein83's OT Equator attachments. The laboratory team had completed numerous cases in the past with Equator attachments with complete success, and this was the perfect case for Equator attachments.

The denture tooth setup (Figure 4) was sent to the doctor, who verified that the bite was perfect. The next step was to send the case out for milled bar fabrication. Before it was sent out, a putty matrix was made of the waxed setup. The matrix and the setup were sent along with the case. When the setup was taken off the model and the matrix was put in place, the dental team was confident that they had enough room for a nicely designed bar with OT Equator attachments.

The bar was milled with four 2-mm threads to accept the Rhein83 OT Equator abutments and was made in accordance with the specific implants placed (Figure 5). You can see OT Equator's low profile on the finished milled bar with abutments (Figure 6) and with the OT Equator housings

Fig 1. Verification index in pattern resin.

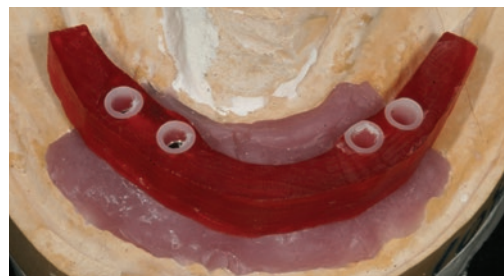


Fig 2. Equator retentive caps with housing.

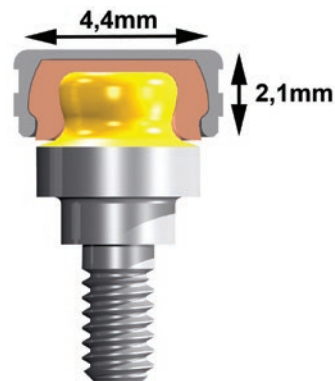


Fig 3. Rhein83's OT Equator.

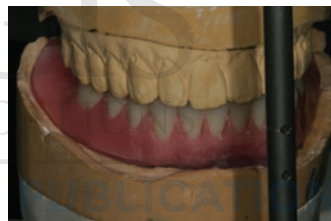


Fig 4. Setup for try-in.



Fig 5. The bar was milled in accordance with the placed implants.

Fig 6. The finished milled bar with OT Equator abutments.



Fig 7. The finished milled bar with OT Equator housings over attachments.



(Figure 7). After the bar was received back at the laboratory, the next step was to make an internal cast metal framework. A refractory model was made and a wax-up was completed to fit over the milled bar (Figure 8). After the framework was cast and finished (Figure 9), another wax denture setup with Equator housings and retentive caps in place was fabricated (Figure 10). The abutments were screwed into place, and the housings were processed to the mesh framework before the setup was completed.

When selecting denture teeth for an overdenture case, many doctors are not aware of the various available choices. Esthetics, wear resistance, shade integrity, and the proper occlusal scheme are of the utmost importance. The

ultimate choice in denture teeth for an implant overdenture case is VITA teeth (Vident, www.vident.com). The esthetic value and shade consistency alone surpasses any tooth on the market. The author's recommended choice for implant overdentures are VITAPAN® PLUS anteriors and VITA Lingoform® posteriors. Both are available in VITA classic shades and 3D Master shades. VITAPAN PLUS are made with MRP (microfiller reinforced polyacrylic), which has the lowest abrasion levels of acrylic teeth. Lingoform posteriors are designed to be set in lingualized occlusion. Lingualized occlusion (Figure 11) relieves any off-axis stress on the implant and is the perfect occlusal scheme for implant overdentures.

On this particular setup, the doctor requested that the second molars be left out. The author always includes the second molars in denture setups, but occasionally there are space limitations or special requests from the doctor and patient. The bar and waxed denture try-in was then sent to the doctor to ensure that everything fit and that the bite was correct (Figure 12). All aspects of the necessary protocol had been followed on this particular case and try-in went perfectly. After the case came back to the laboratory for a finish, the dental team was ready to process the case. The case was processed in high-impact denture acrylic. The combination of the mesh framework and high-impact acrylic ensured a premium case where the fracturing of the denture base would not be a concern (Figure 13 and Figure 14).

Conclusion

This case was successful since all the implant overdenture protocol was followed and planned correctly. Case planning, following the correct protocol, and using the best materials including Rhein83's OT Equator abutments and attachments and VITA teeth yielded the ultimate goal—patient satisfaction.

About the author Dennis Urban, CDT has worked in dental technology for over 35 years and was the recipient of the 2007 NADL Excellence in Education award. He is currently senior account manager and prosthetic specialist Vident—a Vita Company.

DISCLAIMER: The preceding material was provided by the manufacturer. The statements and opinions contained therein are solely those of the manufacturer and not of the editors, publisher, or the Editorial Board of *Inside Dental Technology*.

Rhein83's OT Equator

The OT Equator has the lowest profile (Figure 2 and Figure 3) and smallest diameter—4.4 mm—available, as well as a vertical height of 2.1 mm. It is compatible with all implant brands with cuff heights from 0.5 mm to 7 mm and includes multiple levels of retentive caps, which are retained by steel housings. OT Equator abutments are available in three versions—implant abutment, prefabricated titanium threaded for all CAD/CAM, or cast bar connections with a standard 2-mm thread and castable. For this case, prefabricated abutments were used.

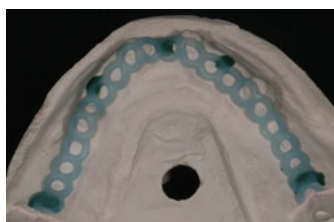


Fig 8. Waxed framework for support.

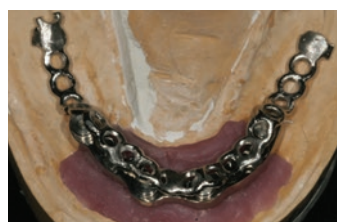


Fig 9. Cast and finished support framework.



Fig 10. Rhein83 housings processed to framework for try-in.



Fig 11. Lingoform® teeth in lingualized occlusion.



Fig 12. Final waxed try-in.



Fig 13. The processed and finished implant overdenture.

Fig 14. The tissue side of the processed denture showing Equator attachments.



For more information, contact:

Rhein83 USA, Distributed by American Recovery Inc.

P 877-778-8383

W www.rhein83usa.com

E info@rhein83usa.com