

Implant-Supported, Screw-Retained Prostheses:

Options for Every Case Situation!



Gary Wakelam, RDT, CDT

The CAD/CAM process has revolutionized the treatment of both edentulous and partially edentulous restorative implant patient. While the most common implant-based prosthesis options are still the separate abutment and cement retained crowns and bridges, there are many times when another option is required. Aurum Ceramic/Classic offers a tremendous array of CAD/CAM manufactured, one-piece, screw-retained bar and bridge framework alternatives. Each supplies greatly improved precision, passive/stress-free fit, light weight, retrievability and biocompatibility in their particular indication over the possible weakness, inaccuracy and distortion of their traditionally cast, soldered and laser-welded counterparts. The predictability and accuracy of these dental structures eliminates try-in steps and reduces costly chairtime while freeing up the restorative team of clinician and technician to concentrate on creating the best design. We will explore a few of these options in this article.

3i CAM Structure Precision Milled Bars

This leading edge technology provides one-piece milled titanium clip bars (Hader or Dolder) for implant-retained overdentures and fixed hybrid prostheses. The result is a lightweight yet durable restoration that is extraordinarily accurate and can be manufactured on most major brand implant and abutment interfaces. The system is contraindicated in case situations with more than 10 implants, greater than 30° divergence between implants, less than 7 mm of interarch space or more than 4 mm of tissue depth.

Design and manufacture is a simple and efficient process. Mounted casts with an acceptable wax-up are shipped to Aurum Ceramic/Classic for construction of a verification matrix. This matrix is returned to the clinician and used to veri-



Procera hybrid framework.

fy the transfer impression in the mouth (doctor can alter the matrix as necessary to achieve a passive fit). After model verified, Aurum Ceramic/Classic constructs a resin pattern, which is either scanned in-lab or at the manufacturer with measurements recorded for both the cast and the resin pattern. The scanned information is sent to the manufacturer where the bar or framework is precision-milled from a solid piece of titanium (in one instance, hardened Zirconia is available as well). The milled bar/framework is returned to the dental office via Aurum Ceramic/Classic where it is checked in the mouth again for accuracy and then returned to the laboratory for final processing.

Procera® Implant Bridge

Available as either Procera Implant Bridge Titanium (since 1996) or the new Procera Implant Bridge Zirconia (just introduced in 2007), each screw-retained full or partial bridge substructure is custom milled from a single piece of either titanium or hardened Zirconia. Both alternatives follow the same basic clinical and technical protocols as outlined for 3i CAM Structure. The abutment and/or implant interfaces are precision milled and become an integral part of frameworks up to 14 units in length (maximum size 60 mm in length x 300 mm in diameter). Supplying a consistent precision fit to less than 20 microns and super



Hybrid in position.

strong (flexural strength of 1200 MPa), they have proven to be an effective replacement for removable prostheses and can be used anywhere in the mouth. Procera Implant Bridge Zirconia is the only all-ceramic CAD/CAM bridge available for screw-retained, implant-level installation (supplying enhanced soft tissue integration and superb esthetics even in cases where soft tissue has receded). However, this alternative is contraindicated in bruxism cases, where mesial/distal cantilevers have a length of more than one unit, or where there are more than two pontics between supporting implants.

Cresco™

Until now, one of the major reasons for avoiding screw-retained bars, partials or full arch bridges has been the risk of compromised esthetics. With Cresco, the screw holes of the framework can be angled to compensate for less than optimal implant placement or poor bone quality or quantity (no need for sinus elevation and/or bone substitutes). The system provides the flexibility needed to eliminate the risk of access holes buccally or in positions where optimal esthetic results might be compromised. The access hole(s) can be placed in the center of the occlusal surface, even when implant angulation is less than ideal.

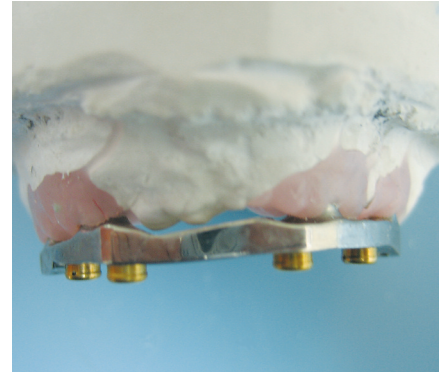
Additionally, as the restoration can be screwed directly onto the implant with a single bridge screw, complicated and expensive angled abutments are eliminated.

Cresco is non-system specific (works on most common implant systems) and allows frameworks crafted from titanium, precious metals or even non-precious options like chrome-cobalt. The patented Cresco machine systematically corrects any distortion that occurs in the framework during the process. Working with a calculating value of 0.01 mm, this ensures a perfect passive fit between the final restoration and the implant, whether the restoration is a partial bridge, full arch or a bar construction, eliminating “built-in” mechanical stresses.



Upper Locator bar.

For more information on implant-supported, screw-retained prostheses and other aspects of implant-based techniques, please contact the Advanced



Anterior view of bar.

Esthetic Implant Specialists at your closest Aurum Ceramic/Classic laboratory location (See Page 2 for locations and contact information).