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Implant-retained OVERDENTURES

Have you heard and read all the buzz about implant-retained overdentures and would like to extend your existing prosthetic product line to include implants? I recommend starting out with free-standing implant retained overdentures before going to bars or an implant-supported prosthesis.

First, let's define implant-retained versus implant-supported overdentures. Implant retained overdentures are retained by attachments on the implants (free-standing studs or splinted bars) and supported by the mucosa. Implant-supported overdentures rely on implants for retention and support of the entire prosthesis. The implant-supported prosthesis is retained by attachments on bars that splint the implant abutments. The hybrid fixed detachable implant supported prosthesis is screw retained and does not utilize attachments.

I recommend starting out with a simple and predictable implant system like Locators (Zest Anchors, www.zestanchors.com) using the direct processing technique. Direct processing is when a

clinician seats the overdenture and processes the attachments intra-orally. In the indirect technique the overdenture attachments are technically processed to the overdenture base in the laboratory. The advantage of indirect processing is it saves clinical chairtime and is easier than an intra-oral procedure. The disadvantage of direct processing is that it does not allow for soft tissue compressibility on the denture-bearing surface.

The technique shown utilizes duplicate models for processing and was performed without a try-in.

01 The clinician picked up an impression coping in the old denture with wash coping in the old denture with wash impression. A new model with implant abutment female analog is created and mounted to opposing denture on articulator (**Fig. A**).

02 Create a master model with implant female analogs and processing caps (**Fig. B**). Note: The caps are visible in photo and analogs are not.

03 If the clinician uses the direct intra-oral technique to process the caps to the overdenture, fabricate a cast framework structure to reinforce the mandibular overdenture and provide a vertical stop for the titanium processing caps (**Fig. C**). This cast Wironium framework was made by Lords Dental Studio, Inc. and Sili-coat applied to provide better acrylic bonding and mask out the metal frame.

04 Add two sections of cold cure acrylic on the right and left posterior areas to ensure the cast framework does not move during injection processing. Extend the acrylic to the land areas on a duplicate model to provide added stability and displacement of cast framework (**Fig. D**).

05 Transfer the new denture set-up and wax-up onto the duplicate model and complete final wax modeling (**Fig. E**).

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Fig. A Create a new model with the implant abutment female analogs and mount to opposing denture on articulator.



Fig. B Create a master model with implant female analogs and processing caps.



Fig. C If the direct technique is used by the clinician, fabricate a cast framework structure to reinforce the mandibular overdenture and provide a vertical stop for the titanium processing caps.



Fig. F Cover the invested waxed denture with Sil-Tech Super PVS material before the second half is poured.



Fig. G Duplicate of master model after boil-out of the positive mold, showing the Locator processing caps duplicated in gypsum model.



Fig. H After boil out, clean the framework and cold cure acrylic extensions of all wax or oils. Seat the framework back on the duplicate model before Ivocap injection processing.

06 Waxed denture is invested in Sr-Ivocap (Ivoclar Vivadent, www.ivoclarvivadent.us) flasks and sprued accordingly. Sprues should be placed at the most posterior bulk of wax.

07 The invested waxed denture is covered with Sil-Tech Super PVS (Ivoclar Vivadent) material before second half is poured (Fig. F).

08 After boil-out of the positive mold, the duplicate of master model is visible and shows locator processing caps duplicated in gypsum model (Fig. G).

09 After boil-out of the negative mold, apply Sil-Tech Super before the Ivocap injection (Ivoclar Vivadent) processing. The Sil-Tech Super (95 Shore Hardness) adds predictability to processing by eliminating the possibility of stone adhering to processing acrylic denture base.

10 After boil out, clean the framework and cold cure acrylic extensions of all wax or oils. Seat the framework back on the duplicate model before Ivocap injection processing (Fig. H). Note: It is very important when processing to any acrylic base (relines, rebases, processed bases etc.) to always coat acrylic surface with heat cure monomer (I use ProBase Heat Cure Monomer from Ivoclar). This will wet the surface and create a better bond while eliminating any white processing line.

11 Labial view of cast overlay and duplicated titanium processing caps before injection of Ivocap acrylic (Fig. I). Note the .5-mm relief between the cast overlay and the duplicated processing cap. This space will allow for soft tissue compressibility after the denture is seated. The Locator attachment system factors in a .005-mm differential in space between the black blackout processing spacer and the Locator Replacement Males (LRM). The LRM have extended range replacement males that can accommodate up to a 40-degree divergence between implant abutments. Always use the red extended range replacement males if you have four implant abutments to retain on an overdenture.

12 Process and deflask the overdenture. The intaglio (tissue bearing) surface of denture and sprues are shown with space for titanium processing caps.

13 Fig. J shows the negative space for titanium implant processing caps created when attachments are processed intra-orally with the direct technique. The cast overlay is visible and aids as a mechanical stop during direct intra-oral placement of the processing caps. To ensure static placement of the processing caps, it is very important that there is no contact between cast overlay or denture base and female implant abutment. Contact would create excess pressure on the implant abutment and the denture will not fully seat into tissue-bearing surfaces. The patient should wear the overdenture for one week unloaded with the male attachment on. That will allow the overdenture to fully seat into the soft tissue-

bearing surface. After one week, the clinician can load the overdenture with replacement males and processing caps using the intra-oral direct technique.

After final processing denture was seated back on the master model, equilibrated, finished and polished, and then delivered to the clinician for seating. **lab**



Fig. D Add two sections of cold cure acrylic on the right and left posterior areas to ensure the cast framework does not move during injection processing.



Fig. E Transfer the new denture set-up and wax-up onto the duplicate model and complete final wax modeling.

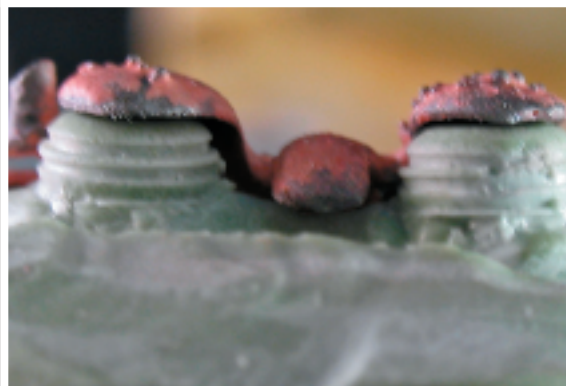


Fig. I Labial view of cast overlay and duplicated titanium processing caps before injection of Ivocap acrylic.



Fig. J For attachments processed intra-orally, there is negative space created for titanium implant processing caps.

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