Transfer of Soft Tissue Profile to Master Cast
Technique I. Custom Tissue Model

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Probably the most challenging aspect of an implant-supported restorative procedure in the esthetic zone is the creation and subsequent capture of the desired soft tissue emergence profile and transferring it to the master cast. Without a way to duplicate the in vivo emergence profile onto the master cast, the laboratory technician is missing information crucial to the desired esthetic result.

In this document are step-by-step instructions on one of many techniques restorative dentists use to impart clinical information to the laboratory technician. The choice of the Custom Tissue Model technique for presentation herein is due to (a) simplicity, (b) minimal laboratory time for the dentist, (c) minimal time in the chair for the patient, and (d) complete transfer of the necessary information to the laboratory technician.

Custom Tissue Model Technique – Screw-Retained Abutment

1. In this case, a Straumann Narrow-Neck implant is ready to begin the restorative phase. In figure 1 above, a titanium coping is placed and prepared. Notice the soft tissue encroachment upon the abutment with the lack of papilla support. In figure 2, the provisional restoration has created ideal soft tissue contours (figure 3) that need to be replicated in the final impression that is sent to the laboratory.
2. After the impression is taken using the Straumann (ITI) Narrow-Neck snap-on coping with a closed tray impression technique, the analog is situated in the impression and the cast poured in the typical fashion (Figs. 4-6 below).

3. Master casts for implant-supported restorations are usually poured up with a soft tissue model. However, this soft tissue model does not usually capture the contours created intraorally due to soft tissue collapse that occurs rapidly once the provisional is removed. The lab is asked to return the master cast once it is poured up in order to fabricate the custom tissue model. The first step is to remove the soft tissue model sent with the master cast (Fig. 7 below).

4. The patient is asked to return to the office and the provisional and abutment is removed and seated onto the master cast (Fig. 8). (To prevent uncontrolled soft tissue collapse, it is recommended to seat another snap-on coping over the implant to limit soft tissue encroachment while this lab technique is performed.) Next, a line is drawn with a pencil tracing the present gingival margin on the provisional (Fig. 9).
5. Adhesive is carefully painted onto the stone and Vaseline is applied to the provisional. Light-body impression material (Fig. 10) is injected around the analog and provisional (Fig. 11). Excess can be removed by carefully wiping the buccal surface of the provisional (Fig. 12).

6. Once the material is set, remove the provisional and recement on patient. The final soft tissue model successfully reproduces the soft tissue contours created in the patient’s mouth onto the master cast (Fig. 13, 14).
7. The technician is now asked to create a restoration that completely fills the created contours (Fig 15, 16). A custom cast abutment or CAD-CAM zirconia/titanium abutment is usually created with a finish line approximately 2 mm below the gingival margin circumferentially as noted on the cast. This facilitates cleaning cement from the sulcus after cementing the final crown.

8. The final abutment, screw, and crown (Fig. 17).

9. 3 months post-delivery (Fig. 18), and the final radiograph (Fig. 19).
Custom Tissue Model Technique – Solid Abutment

1. An acrylic provisional was fabricated on a Straumann (ITI) 5.5 mm solid abutment in order to form the tissues to an ideal emergence profile.

2. An impression was taken in the traditional fashion using the impression kit for the 5.5 mm solid abutment. The impression was poured up with a soft tissue model, which was subsequently removed.

3. The provisional is shown removed from the patient and seated onto the cast.
3. Adhesive is carefully painted onto the stone and Vaseline is applied to the provisional. Light-body impression material is injected around the analog and provisional. Excess can be removed by carefully wiping the buccal surface of the provisional.

Once the material is set, remove the provisional and recement on patient. The final soft tissue model successfully reproduces the soft tissue contours created in the patient's mouth onto the master cast. The technician is now asked to create a restoration that completely fills the created contours.

4. The final restoration in place 2+ years after insertion.

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