Contour correction for stock titanium healing abutments

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Healing abutments (HAs) initiate the formation of optimal gingival contours after dental implant placement, which can be refined later by anatomic interim restorations. The restorative dentist should specify the ideal HA dimension to the surgeon. A wider HA than a definitive cementable abutment facilitates accurate impressions. A narrower HA than the definitive restoration creates increased gingival thickness for manipulation with the contours of the interim restoration.

Biocompatible HA materials, designs, and fabrication techniques are varied. One-piece stock titanium, zirconia, and polyetheretherketone HAs screw into the implant, forming a circular outline.\(^1\) A customized, anatomic outline can be achieved with 2-piece components and composite resin registration of the implant-gingival sulcus or computer-aided design and computer-aided manufacturing (CAD-CAM) fabrication with titanium or poly(methyl methacrylate) resin.\(^2\)\(^-\)\(^6\)

A common problem is inadequate height or width of the HA that leads to gingival overgrowth, obscuring the space for definitive abutment placement and impression making (Fig. 1). This can occur when the apical placement of the implant exceeds the gingival cuff dimension of a stock HA. Although surgeons typically keep a selection of HA sizes, if the correct height or width is unavailable, a compromise in gingival contour will result. Proper HA contour avoids tissue collapse during cementable abutment impression, stretching trauma on the insertion of screw-retained prostheses, or the need for tissue sculpting under local anesthesia. Tissue support from flared, anatomic HAs increases the thickness of connective tissue and decreases crestal bone loss compared with straight HAs.\(^7\)\(^-\)\(^8\)

The technique described here enables correction of contour deficiency in stock titanium HAs by using 3 high-speed burs and materials commonly found in a simple armamentarium appropriate for a surgical office. A titanium HA is augmented with composite resin to create an enlarged symmetric or customized asymmetric contour. HAs should be single use and not resterilized,\(^9\) so alteration precluding future use is not a concern.

**PROCEDURE**

1. Extraorally, create multiple 2-mm-deep retention channels in the HA by using a pear-shaped bur (330 FG Pear Ccarbide; Brasseler) (Fig. 2, left).
2. Adapt wax (Baseplate Wax Regular Pink baseplate; Henry Schein) to the hand driver and insert into the HA to maintain an access channel.
3. Condense composite resin (Renamel Microhybrid; Cosmedent) into the channels and light polymerize.

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Add composite resin layers to the composite resin filled channels and light polymerize until the abutment is extended 1 mm supergingivally with a flat occlusal surface and has intimate contact with the flared gingival sulcus.

4. Polish the composite resin with rubber points (Brownie Sil Polisher Friction Grip Mini Pt; Shofu) (Fig. 2, right), and insert the HA into the implant with the hand driver.

5. To create a custom asymmetric outline, once the composite resin-augmented HA is fully inserted, roughen the area with a straight, diamond rotary instrument (847 KR Medium Modified Flat End Diamond; Brasseler) for retention, add composite resin, contour with a hand instrument, and light polymerize in situ. Any extension of composite resin that prevents rotation of the HA on removal can be sectioned off at that time with the pear-shaped bur.

REFERENCES


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