

TIPS FROM OUR READERS

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.



Figure 1. Incisal view of stock titanium dental implant healing abutments. Gingival tissue overgrowth obscures space for definitive cementable abutments and impressions.

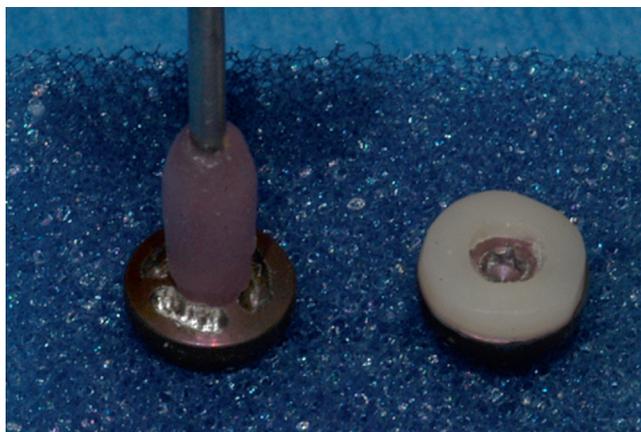


Figure 2. Left, Stock titanium healing abutment with multiple 2-mm-deep channels. Hand driver diameter enlarged with wax to maintain access channel during composite resin addition. Right, Stock titanium healing abutment with increased contours in composite resin for proper gingival support.

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

1. Pow EH, McMillan AS. A modified implant healing abutment to optimize soft tissue contours: A case report. *Implant Dent* 2004;13:297-300.
2. Petsch M, Spies B, Kohal RJ. Socket shield technique for implant placement in the esthetic zone: a case report. *Int J Periodontics Restorative Dent* 2017;37:853-60.
3. Stumpel LJ, Wadhvani C. Development and capture of soft tissue contours at time of implant placement. *J Prosthet Dent* 2017;117:709-13.
4. Akin R. A new concept in maintaining the emergence profile in immediate posterior implant placement: the anatomic harmony abutment. *J Oral Maxillofac Surg* 2016;74:2385-92.
5. Alshhrani WM, Al Amri MD. Customized CAD-CAM healing abutment for delayed loaded implants. *J Prosthet Dent* 2016;116:176-9.
6. Finelle G, Lee SJ. Guided immediate implant placement with wound closure by computer- aided design/computer-assisted manufacture sealing socket abutment: case report. *Int J Oral Maxillofacial Implants* 2017;32:e63-7.
7. Lopez-Lopez PJ, Mareque-Bueno J, Boquete-Castro A, Aguilar-Salvatierra Raya A, Martinez-Gonzalez JM, Calvo-Guirado JL. The effects of healing abutments of different size and anatomic shape placed immediately in extraction sockets on peri-implant hard and soft tissues. A pilot study in foxhound dogs. *Clin Oral Implants Res* 2016;27:90-6.
8. Delgado-Ruiz RA, Calvo-Guirado JL, Abboud M, Ramirez-Fernandez MP, Mate-Sanchez de Val JE, Negri B, et al. Connective tissue characteristics around healing abutments of different geometries: new methodological technique under circularly polarized light. *Clin Implant Dent Relat Res* 2015;17:667-80.
9. Wadhvani C, Schonnenbaum TR, Audia F, Chung KH. In-vitro study of the contamination remaining on used healing abutments after cleaning and sterilizing in dental practice. *Clin Implant Dent Relat Res* 2016;18:1069-74.

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