Achieving Optimal Esthetic Results Using Custom Healing Abutments for Restorations Over Dental Implants

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PURPOSE

To understand the benefits of using a custom healing abutment (HA) as opposed to a standard healing abutment before delivering a final restoration over an implant, particularly in the esthetic zone, and how to transfer the tissue mold to the laboratory.

INTRODUCTION

Especially in posterior implant surgical sites, standard healing abutments are placed to allow for gingival contour and access to the implant, with a standard impression coping used to take a final impression once osseointegration has occurred.

Though for implants placed in the esthetic zone, developing natural looking peri-implant tissues is a challenge that can be addressed using custom healing abutments. Conditioning the soft tissue involves multiple appointments to adjust the provisional in order to obtain the morphology desired, which can also cause trauma leading to an unaesthetic result due to constant removal of the provisional– thus delicacy and timing are key.

It is understood that important factors in developing the soft tissue around an implant include the amount of keratinized tissue present, the position of the implant, buccal bone present post-extraction, the provisional's contour, gingival biotype, and oral hygiene. It is critical to begin developing the soft tissue immediately after surgery to achieve optimal esthetic results.

It is important to not only fabricate custom abutments, but to also capture the tissue using custom impression copings for the laboratory to accurately fabricate a final restoration that allows for both the dentist and the patient to be pleased.

CLINICAL DEMONSTRATION

A fifty-eight-year-old Caucasian male presented to the Southern Illinois University- School of Dental Medicine clinic in January 2020 edentulous in the area of #12 since June 2019 when extraction and site preservation was done of the area .

In June 2020, a Straumann BLX implant was placed during a fully guided surgery. The size was a 4.5 RB x SLActive 10mm placed 2 mm subcrestal to increase interocclusal space, which was limited at 7 mm.

The same day the custom healing abutment, which was prefabricated by the dental laboratory, was delivered. It was more buccal than the surrounding teeth and taken completely out of occlusion. The patient was monitored monthly until it was time to fabricate the final restoration.

A custom impression coping was fabricated by making a replica of the custom healing abutment in Siltek putty. This was used to take the final impression.

The papilla followed the proper contours of the custom healing abutment and final crown.

The final restoration was a Porcelain Fused to Zirconia crown with an Atlantis Custom Abutment delivered in January 2021. The patient was very pleased with the final result.

DISCUSSION

Cases at Southern Illinois University, School of Dental Medicine (SIU-SDM), were and are being monitored while using standard healing abutments in the anterior region, as well as custom healing abutments. The tissue is sculpted using the custom healing abutments so that the final restorations are able to emerge from the tissue with aesthetically pleasing outcomes, profile, and tissue support. Anatomical impressions are taken using customized impression copings to transfer the molds to the dental laboratory and allow for accurate fabrication and delivery of the final restorations.

Patients feel more comfortable at delivery appointments when custom healing abutments are used, as the tissue is not impinged upon as when a standard healing abutment is used. Photographic evidence shows that the tissue can be sculpted to allow for a more aesthetically pleasing outcome and emergence profile upon final delivery.

Patients are also more pleased to have a tooth like restoration versus a standard healing abutment.

Being able to transfer the record of the custom healed tissue using a custom impression coping is also of importance to be able to allow the lab to make an appropriate restoration to the contours that have been achieved, as well as to allow for a more precise delivery of the final restoration. According to previously published research, by having a custom healing abutment, emergence profile can be generated to allow for the tissue to heal to how the final restoration will look, and this can then be used as a guide for the laboratory technician to create an ideal final restoration.

CONCLUSION

Within the parameters of the research and observations, there are tremendous benefits to the use of custom healing abutments not only for patient comfort and esthetics of the final restoration, but also for the dentist to deliver it, and the dental laboratory to fabricate the most clinically accurate restoration.

ACKNOWLEDGEMENTS

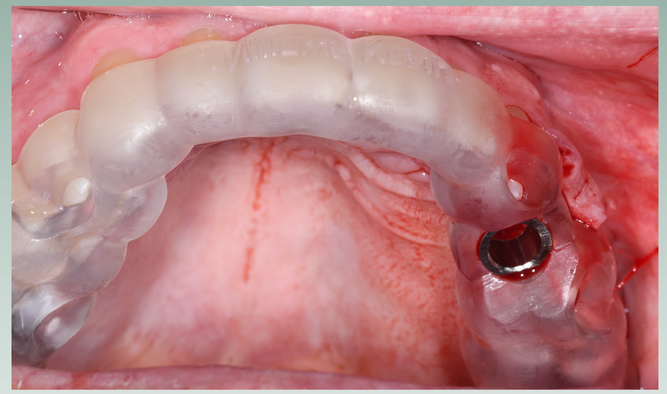
Southern Illinois University- School of Dental Medicine; Robert Blackwell, DDS; Lucas Winebaugh, DMD; Joe Mazur; Straumann Dental Implants; Tom Turntine, CDT; Verch Dental Ceramics.

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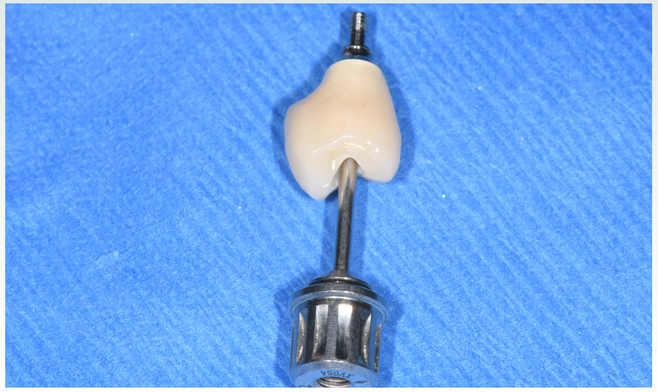
INITIAL PRESENTATION #12



SURGICAL GUIDE IN PLACE



STRAUMANN BLX IMPLANT



CUSTOM HA EXTRAORALLY



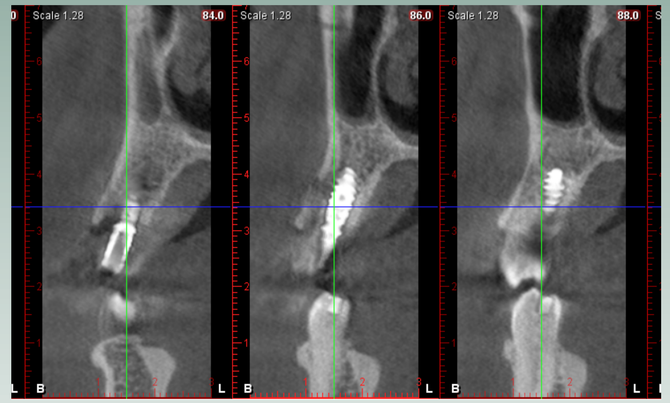
CUSTOM HA ON SURGERY DAY



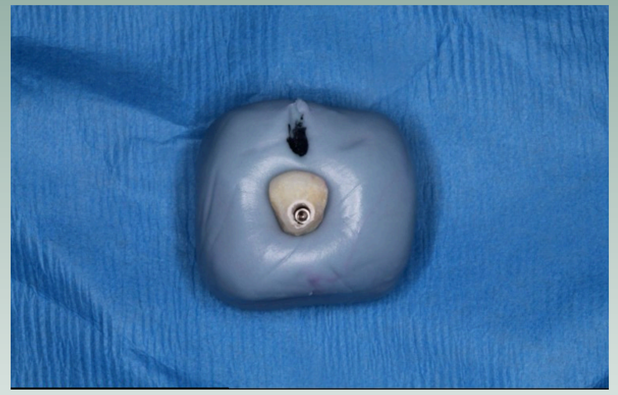
CUSTOM HA EMERGENCE (1 WEEK)

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FINAL IMPLANT PLACEMENT



CUSTOM IMPRESSION



SOFT TISSUE



FINAL CROWN (OCCLUSAL VIEW)



FINAL CROWN (BUCCAL VIEW)



FINAL PFZ RESTORATION (FULL VIEW)