RESTORATION OF GINGIVAL FORM IN MALALIGNED DENTAL IMPLANT THROUGH CUSTOM FABRICATED HEALING ABUTMENT: A CASE REPORT

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ABSTRACT
The physiologic and biologic hard and soft tissue changes that occur following loss of tooth are inevitable. The functional and aesthetic replacement of lost natural hard and soft tissue via dental implant and its restorative components is in common practice now days. Placement of dental implant without considering these anatomical changes leads to malpositioning in vertical, mesial/distal, and/or facial/lingual plane. It is a challenge to re-establish soft tissue contour during the restorative process. This clinical report presents use of custom fabricated healing abutment to restore the gingival form in a malaligned dental implant.

Key words: Custom fabricated abutment, Implant Abutment, Gingival Form.

INTRODUCTION
In ideal situation, healing abutments should conform to the size of tooth being replaced. Healing abutment can be placed either during single stage surgical procedure or at two-stage surgical protocol to guide the healing of soft tissue and definitive abutment placement. However, dental implant may be malpositioned in vertical, mesial/distal, and/or facial/lingual plane under varying hard and soft tissue anatomical variation. These could be most common reason for using custom-processed abutments. Hence, in area with optimum esthetic requirement, interim/provisional abutments may be used to contour the periimplant soft tissue and to develop optimal, anatomic, emergence profile. The re-creation of soft tissue form may occur by re-establishment of a gingival form with the custom made healing abutment/provisional restorations. This technique may benefit patients with a malpositioned dental implant and also it added simplification to the final restorative procedure via initial soft tissue contouring.[1-3]

CASE REPORT
A 22-year-old patient presented to the Department of Prosthodontics with a malaligned dental implant replacing left maxillary central incisor. The dental implant was malaligned in both facial/palatal and mesial/distal plane. (Figure 1)

Hence, in an effort to maximize the esthetic result, the second stage surgical procedure was planned with placement with a custom-healing abutment followed by definitive restoration.

Procedure followed:
1. Under local anesthesia, a small incision was placed and following removal of prefabricated healing abutment, tissue was allowed to heal for a week.
2. After a weak second stage surgery was performed and mucoperiosteal flap was elevated.(Figure 2)
3. A custom healing abutment was prepared extraorally with incremental addition of flowable composite resin. Adjustment of composite resin then initiated to customize the emergence profile specific to the site. Incremental addition and curing was recommended with care to prevent resin from flowing onto the screw surface. (Figure 3)

![Figure 3. The custom fabricated abutment.](image)

4. The custom made healing abutment was tried to check the emergence profile.

5. After a final polishing, the supragingival extension of the custom healing abutment was adjusted to the level of the gingival margin. The custom made abutment was then inserted and torque onto the implant. The custom made healing abutment maintained the support for gingival architecture. A week later, the abutment was removed and gingival architecture was checked. (Figure 4,5)

![Figure 4. Post healing phase.](image)

![Figure 5. Gingival cuff formed around implant.](image)

6. A standard impression is then made using closed tray impression technique.

7. The custom-healing abutment was returned to the implant to continue to support the gingival tissues while the impression was being prepared. The impression was prepared in the standard manner using a soft tissue replacement material around the impression coping before it is poured with die stone.

8. The proper contoured wax-up was made for final restoration fabrication. Abutment was torque to 35 Ncm. The final restoration with results can be seen in as (Figure 6,7)

![Figure 6. Modified standard abutment in place.](image)

![Figure 7. Post operative view.](image)

**DISCUSSION**

Generally the clinician attempts to align the implant body with the facial aspect of adjacent teeth, the implant body may inadvertently be inserted too facially. No single method exists to restore proper aesthetics when the implant abutment is located above the free gingival margin of the adjacent teeth. Soft tissue graft and/or bone augmentation does not improve the condition after implant insertion. At the best, final crown appears too long and too facial.[4,5] This article described easy and convenient technique for the maintenance of gingival form using a custom-fabricated abutment. Utilization of custom healing abutment over prefabricated healing abutments is advantageous as prefabricated abutment are round in shape and failed to provide support for the supracrestal soft tissue under such case scenario. The problem of adding and removal of material with these versions is difficult. Hence a custom made healing abutment over temporary abutment was planned.[6]
CONCLUSION

Precise contouring of the gingival emergence profile allows for the preservation of the original soft tissue levels. Hence, careful patient selection and execution of this treatment modality provides an effective method to optimize implant aesthetics.

REFERENCES