

Using a Novel Double-up Technique to Contour Ridge Augmentation for Optimal Dental Implant Esthetics: A Clinical Case Report

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Abstract

Achieving an ideal esthetic outcome in implant placement is challenging when moderate bone and soft-tissue defects exist. Ridge augmentation is often required to create ideal gingival contours and esthetics.¹ To optimize esthetics when replacing teeth with dental implants, contour ridge augmentation with soft-tissue grafts, bone grafts, or the combination of soft-tissue and bone grafts is often indicated at second-stage implant surgery prior to definitive restorative treatment.² Advancement in regenerative materials, and their potential to meet treatment objectives whilst offering unique properties, has seen adoption of diverse surgical techniques and biomaterials.³⁻⁴ This case series describes a novel surgical “double-up” technique which can be used to fulfil the remaining ridge deficiency that is affecting the esthetics. Historically, soft tissue re-augmentation, and bone re-grafting have been utilised to make up for such deficiency. Additionally, a double-up technique using a ribose-based cross-linked multilayered dual soft- and hard-tissue absorbable scaffold can be used in the same manner to yield exceptional dental implant esthetics.

Case Reports

This case report displays two cases where both the patients presented a diagnosis of mucogingival deformities and conditions on edentulous ridge: hard-tissue deficiencies prior to implant placement associated with tooth loss (Figure 1 and 2). In bot cases, treatment included staged implant placement. During implant exposure, a full-thickness flap was elevated and buccal pouch created. “Double-up” technique for placement of a dual absorbable scaffold (DAS) at the level of the osseous crest on the buccal aspect of the implant and placement of a healing abutment.

Patient 1: 36 year-old female presented with a chief complaint: “I want an implant to replace my lost tooth [#4]”.

Patient 2:: 41 year-old female presented with a chief complaint: “I need implant to replace my missing tooth [#30]”.

Results

Healing was uneventful in both patients. At 3-month re-evaluation, patient 1 presented with a 28% increase in ridge width. At 6-month re-evaluation, patient 2 demonstrated a 51% increase in ridge width.

Conclusion

With reliable outcomes the double-up technique can be used as an alternative solution to contour ridge augmentation and enhance dental implant esthetics.

Case 1

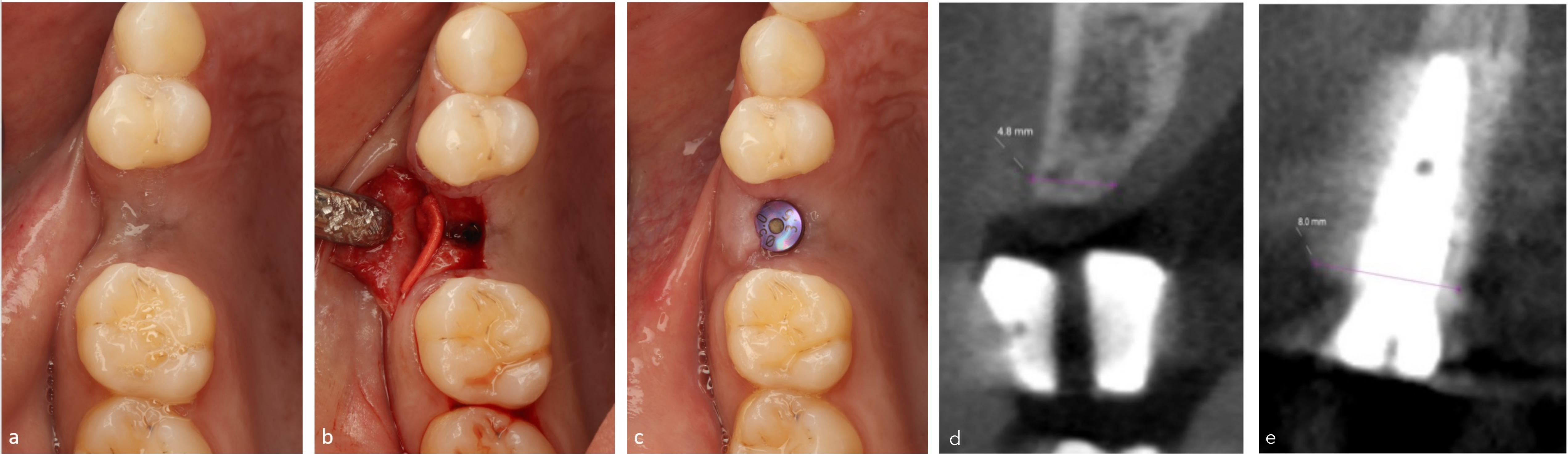


Figure 1. (Patient 1): (a) Pre-operative view with horizontal ridge deficiency (b) Implant exposure: Placement of “Double-up” scaffold on the buccal aspect (c) Healing: correction of ridge deficiency (d) CBCT pre-op (e) CBCT 6-months post-op

Case 2

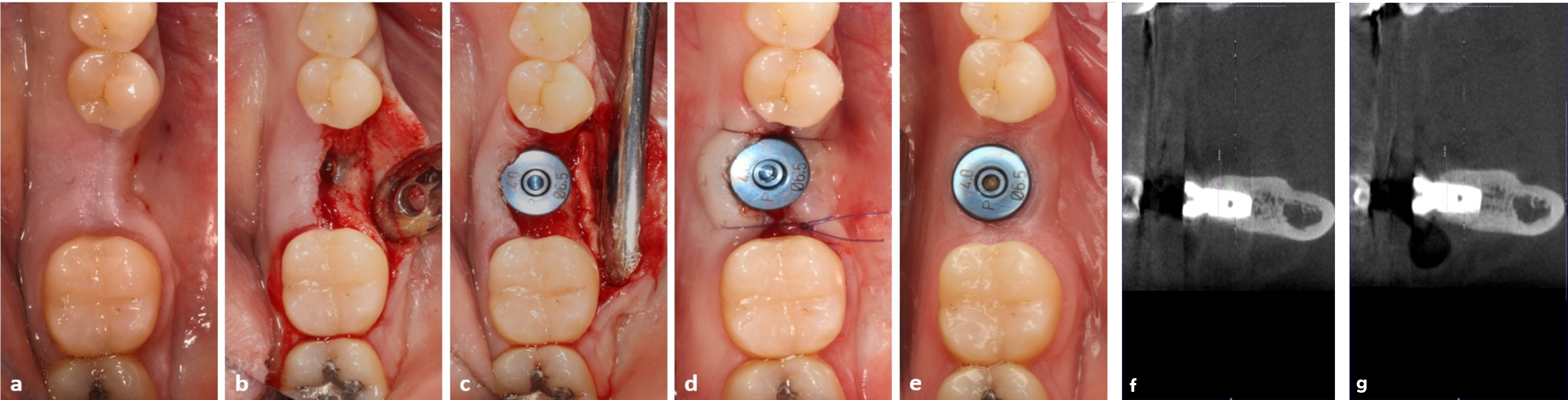


Figure 2. (Patient 2): (a) Pre-operative view with horizontal ridge deficiency (b) Implant exposure: (c) Placement of “Double-up” scaffold on the buccal aspect (d) Suturing (e) Healing at 6-months (f) CBCT 3-months post-op (g) CBCT 12-months post-op

