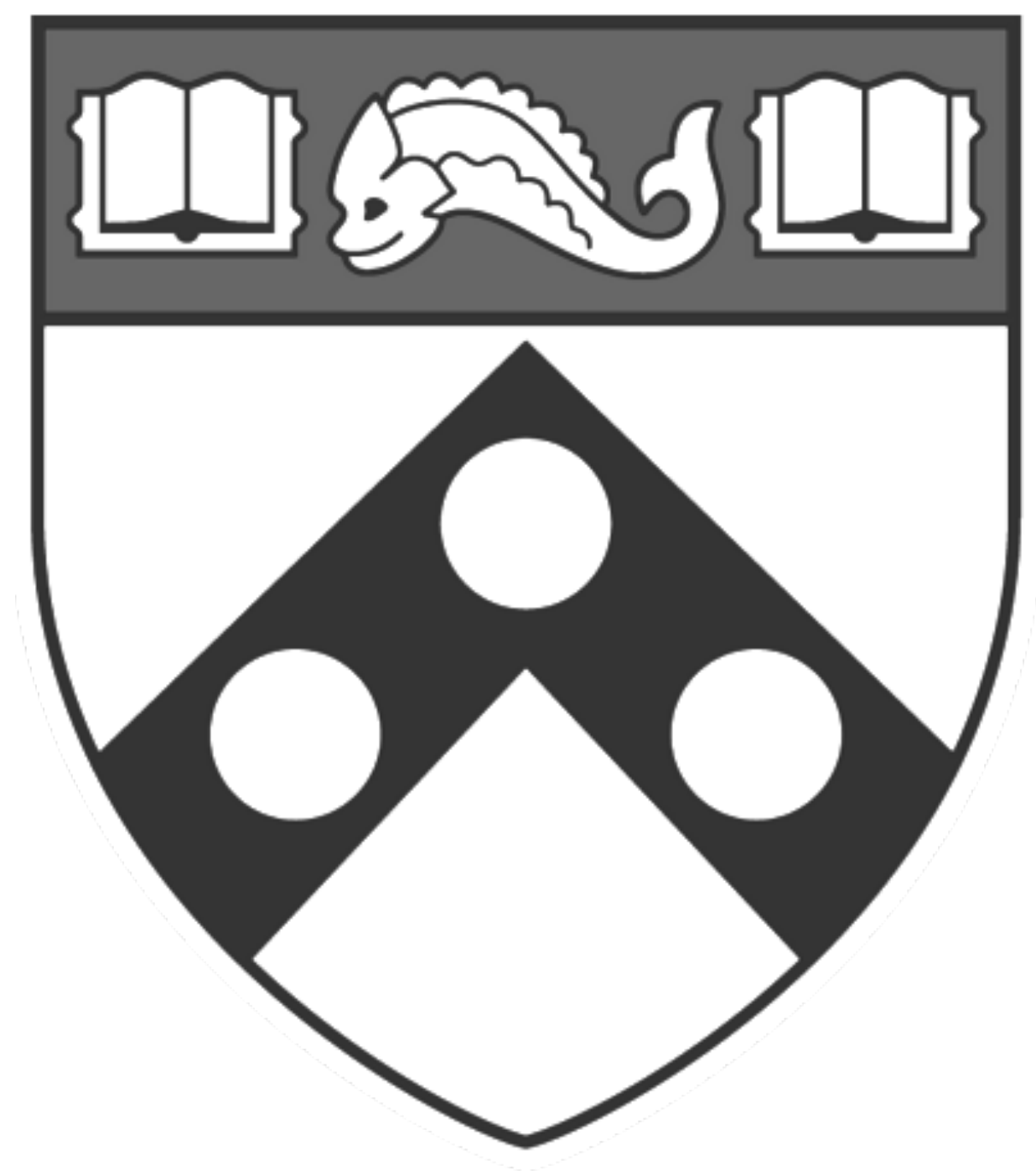




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Multiple Treatment Modalities to Treat Horizontal Ridge Deficiencies at the Time of Implant Placement: A Case Report

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Poster No.



Introduction

Horizontal ridge deficiencies are a recurrent challenge that clinicians face daily, and the treatment of which can be approached in many ways. The goal for treatment of these defects ultimately comes down to finding approaches that are predictable, reproducible, and efficient; causing minimal trauma to both the patient and the adjacent anatomy. Placement of anatomically sloped implants and use of cross-linked, ossifying, collagen scaffolds can be a conservative alternative to the conventional approach of using bone particulate along with barrier membranes. This poster aims to highlight the value of these approaches in a clinician's armamentarium.

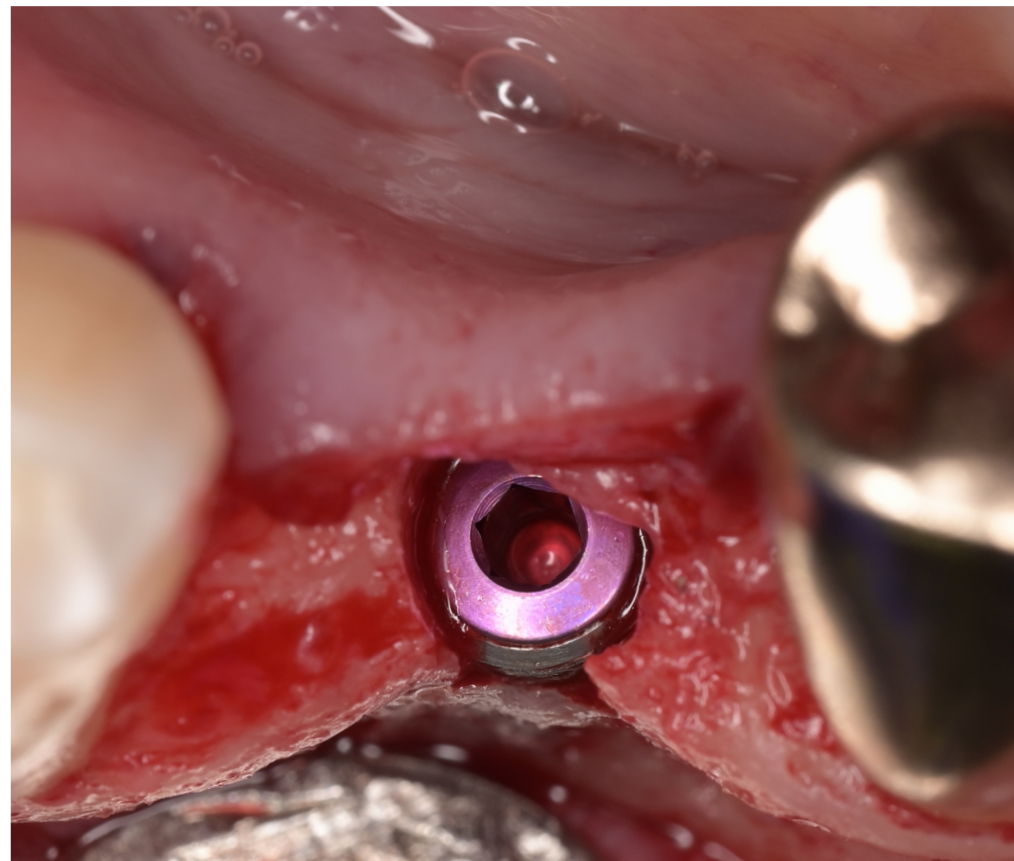


Figure 1a: Horizontal ridge deficiency at time of implant placement #21

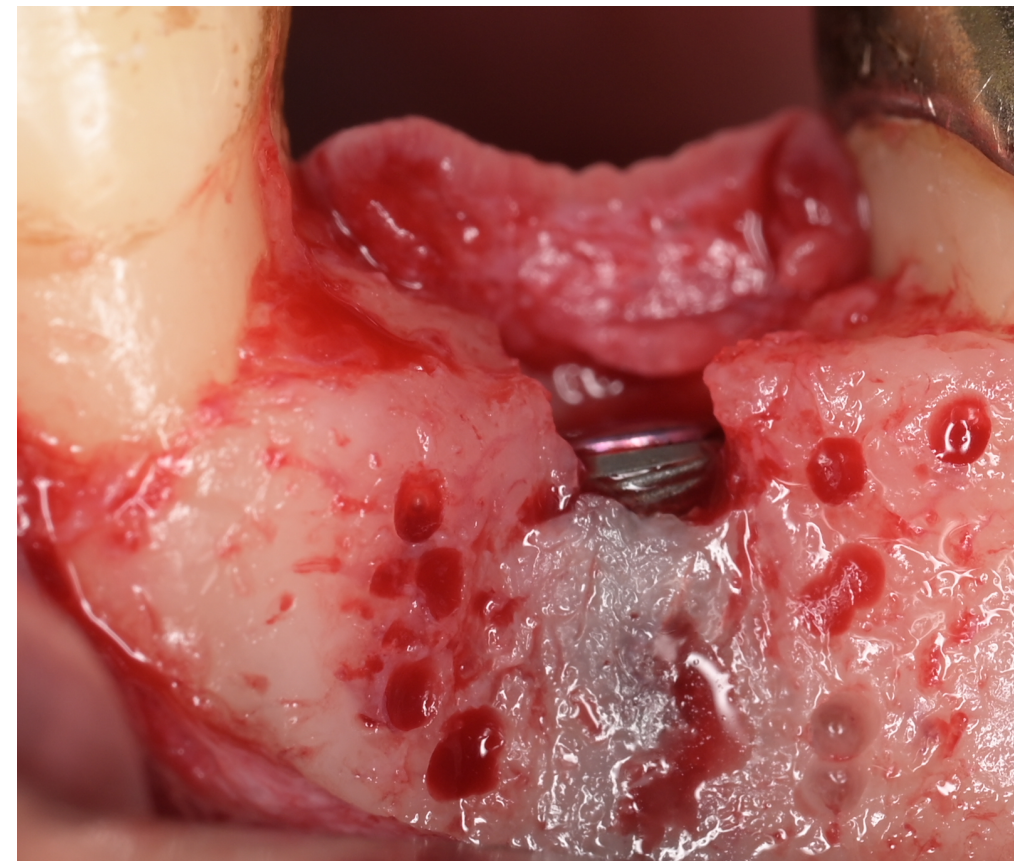


Figure 1b: #21 Buccal defect decorticated



Figure 1c: #21 Grafted defect using mixed cortico-cancellous allograft



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Materials and Methods

Two patients with missing teeth and horizontal ridge deficiencies presented to the Department of Periodontics for implant placement.

Upon placement, Patient A required augmentation of the buccal wall around implant #21. The site was then de-corticated, periosteal releasing incisions were made, and cortico-cancellous allograft with a resorbable barrier membrane was placed over the defect. The flap was approximated using resorbable sutures and the membrane was stabilized with a horizontal mattress suture to achieve primary closure (Fig. 1).

An anatomically slanted implant was chosen for site #30 in Patient B to maximize the existing bony anatomy. A cross-linked, ossifying, collagen scaffold was subsequently folded onto itself and tucked into the site of the defect. The flap was approximated using resorbable sutures and the collagen scaffold was stabilized with a horizontal mattress suture to achieve primary closure (Fig.2).

At two week follow-up, both patients were ask report their pain and swelling levels using the Visual Analog Scale (VAS).

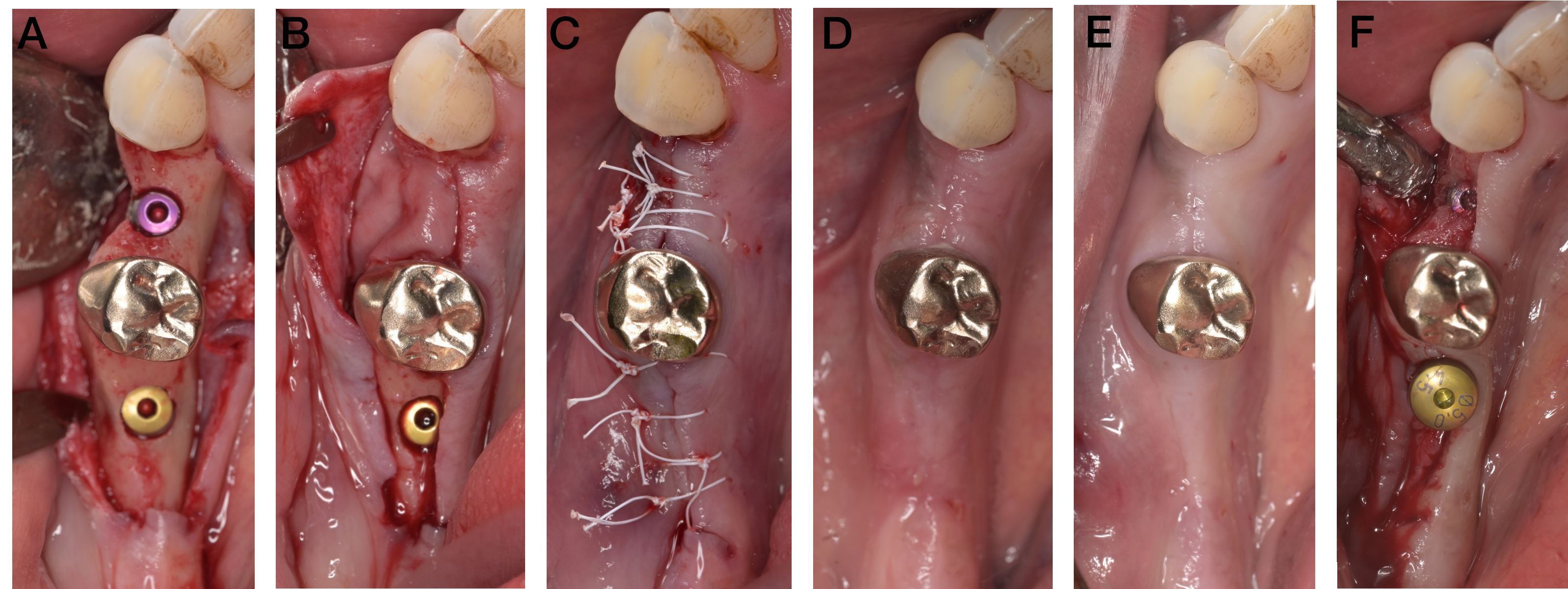


Figure 1d: (A) Buccal ridge deficiency on #21; (B) bone graft and membrane on #21; (C) primary closure of site; (D) 2 week follow-up; (E) 3 month follow-up; and (F) re-entry at the time of second stage surgery.



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Results

Both treatment modalities resulted in a 2mm increase in bone at the site of the buccal deficiencies and the dental implants had integrated at the time of second stage surgery. Patient B demonstrated bone fill at the site of the buccal deficiency with additional bone gain extending beyond the head of the implant. Patient B reported less post-operative swelling and discomfort when compared to Patient A (Fig. 3).

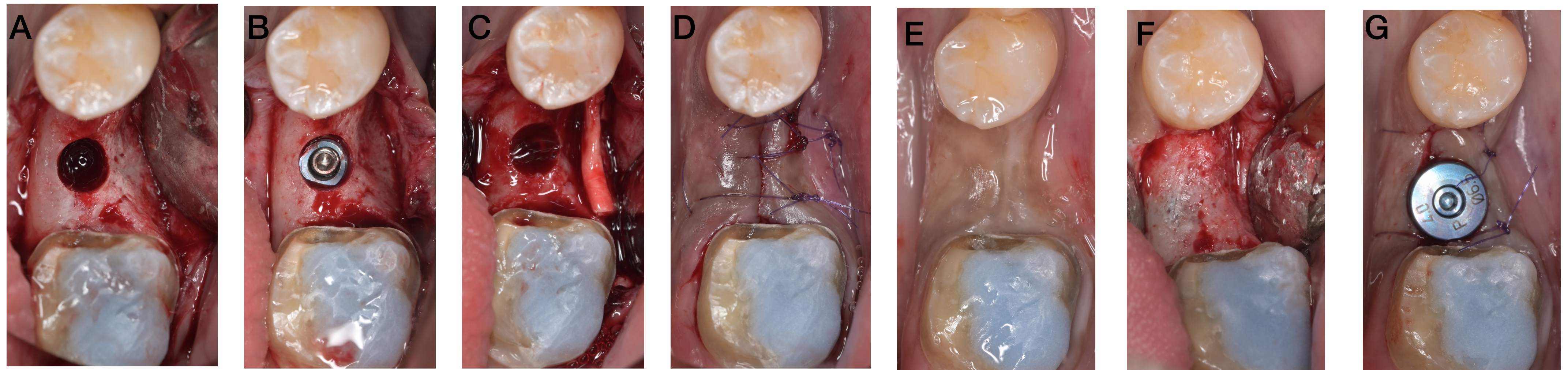


Figure 2: (A) Buccal ridge deficiency on #30; (B) placement of anatomically sloped implant; (C) folded cross-linked ossifying collagen scaffold within deficiency; (D) primary closure; (E) 3 month follow-up; (F) and re-entry at the time of second stage surgery; (G) placement of healing abutment.



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Conclusion

Hard tissue grafting around dental implants can be performed using a myriad of techniques, however the use of anatomically sloped implants and cross-linked, ossifying, collagen scaffolds can provide comparable outcomes to conventional techniques whilst being far more conservative and efficient when case selected appropriately.

References

1. Karasan D, Güncü M, Ersu B, Canay Ş. Biomechanical behavior of implants with a sloped marginal configuration. The International Journal of Prosthodontics. 2018;31:587–90.
2. Neiva R, Bhide V. Double-up technique for correction of ridge contour deficiencies: Compendium [Internet]. July/August 2022 | Compendium. [cited 2024 Feb 20]. Available from: <https://www.aegisdentalnetwork.com/cced/2022/07/double-up-technique-for-correction-of-ridge-contour-deficiencies>
3. Zubery Y, Nir E, Goldlust A. Ossification of a collagen membrane cross-linked by sugar: A human case series. Journal of Periodontology. 2008;79:1101–7.
4. Hämmerle CH, Karring T. Guided Bone Regeneration at oral implant sites. Periodontology 2000. 1998;17:151–75.
5. Delgado DA, Lambert BS, Boutris N, McCulloch PC, Robbins AB, Moreno MR, et al. Validation of digital visual analog scale pain scoring with a traditional paper-based visual analog scale in adults. JAAOS: Global Research and Reviews. 2018;2.

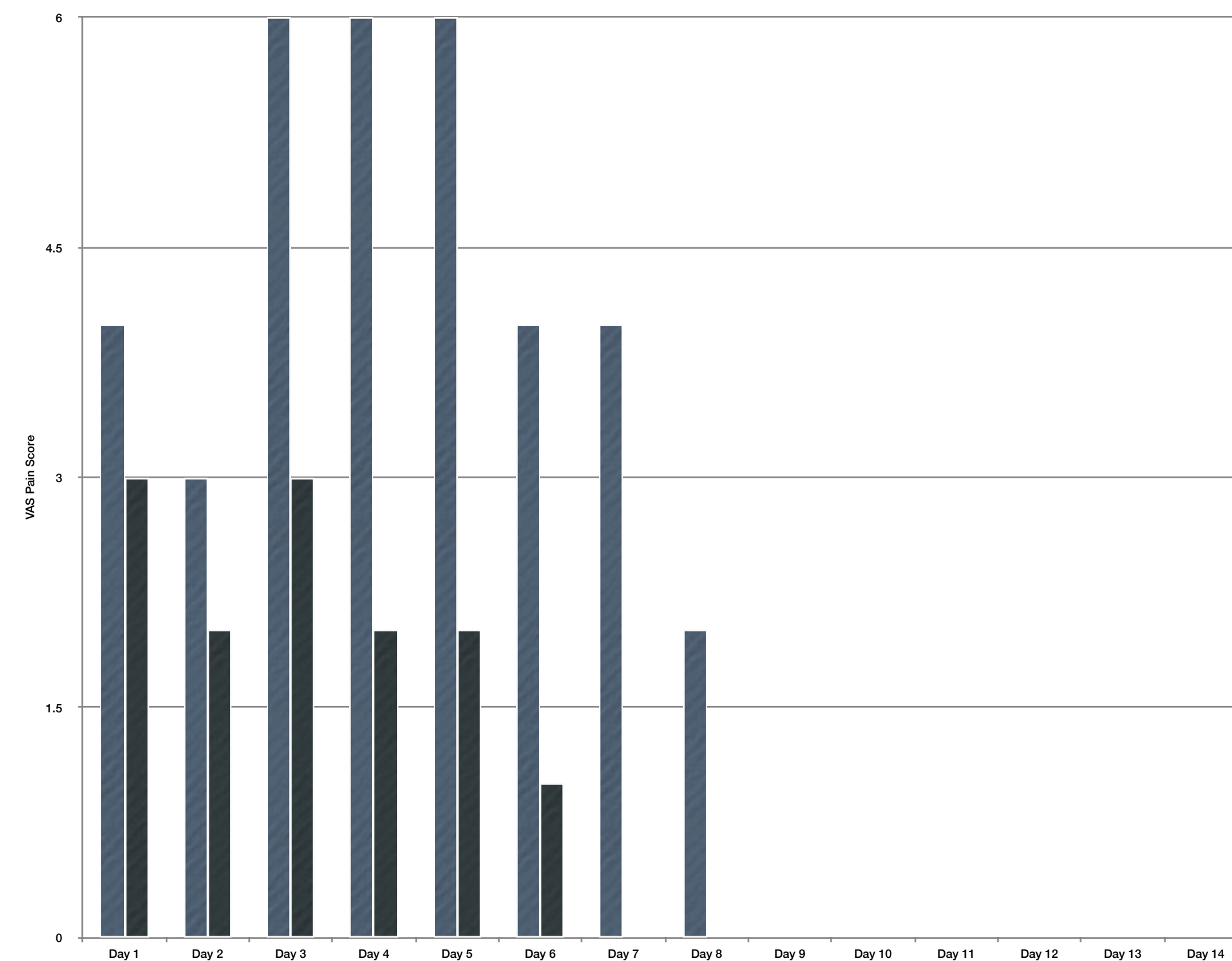


Figure 3: Patient A and Patient B pain scores based on the visual analogue scale