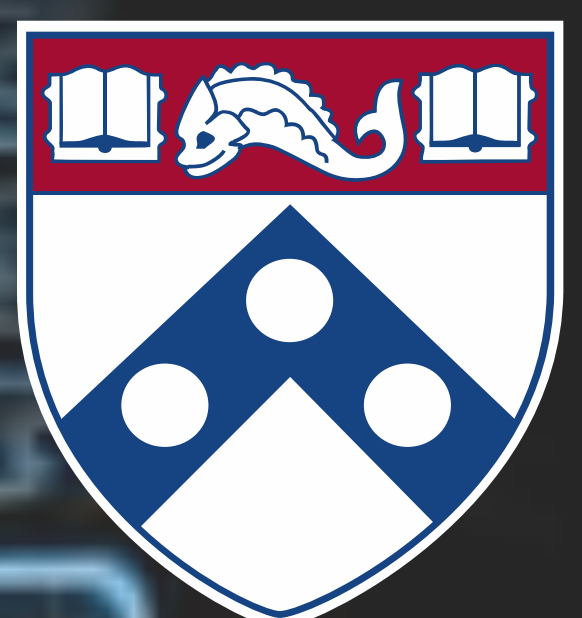
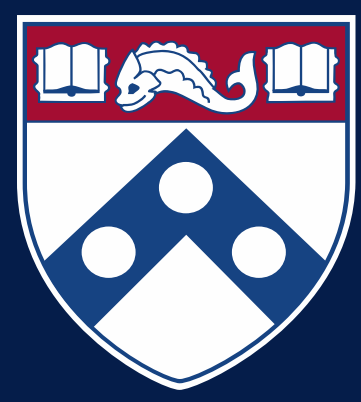


The use of strip gingival grafts and xenogeneic collagen matrix for mucogingival defects resulting following alveolar bone augmentation: A case series

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**University of Pennsylvania School of Dental Medicine,
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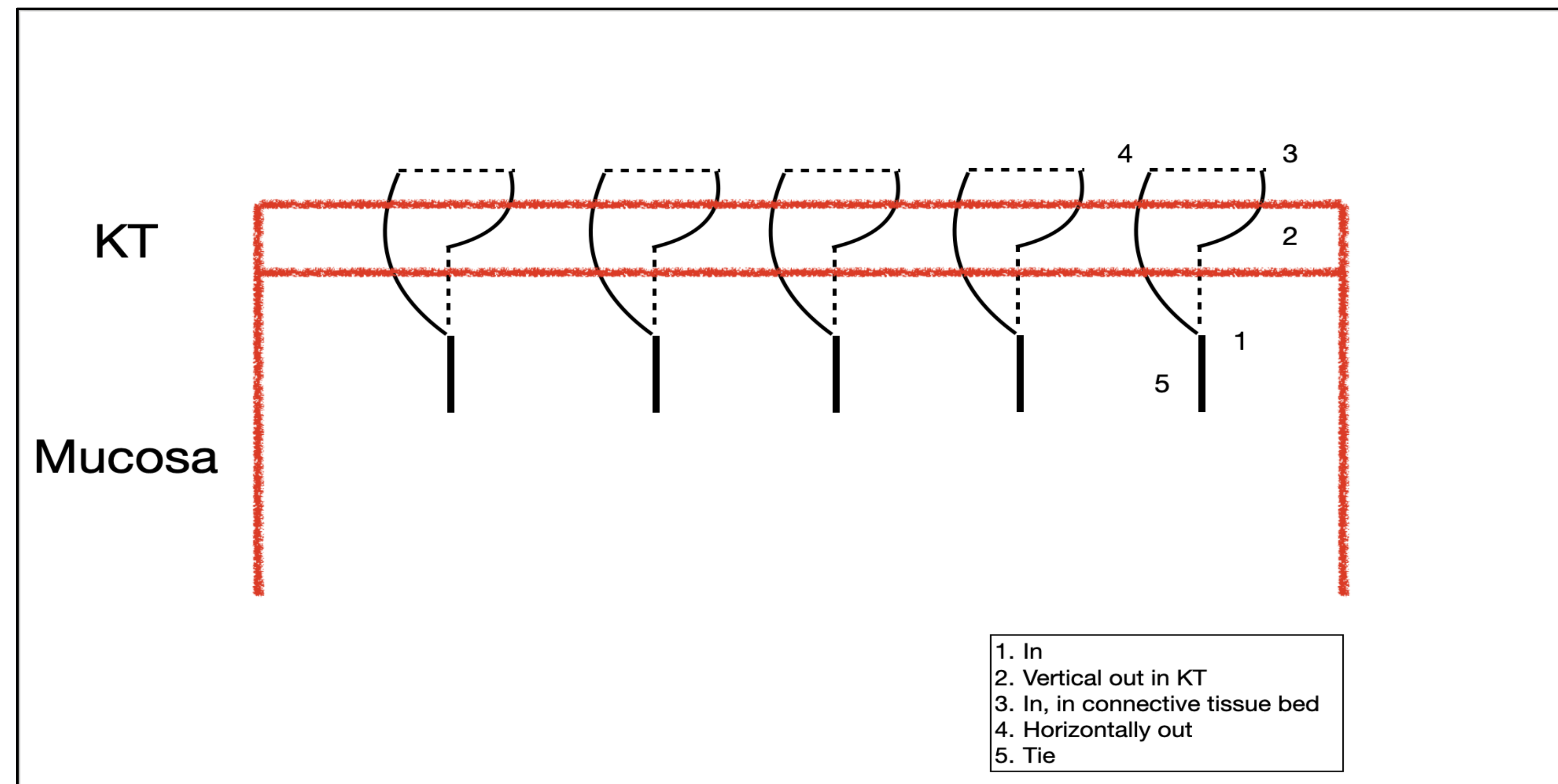
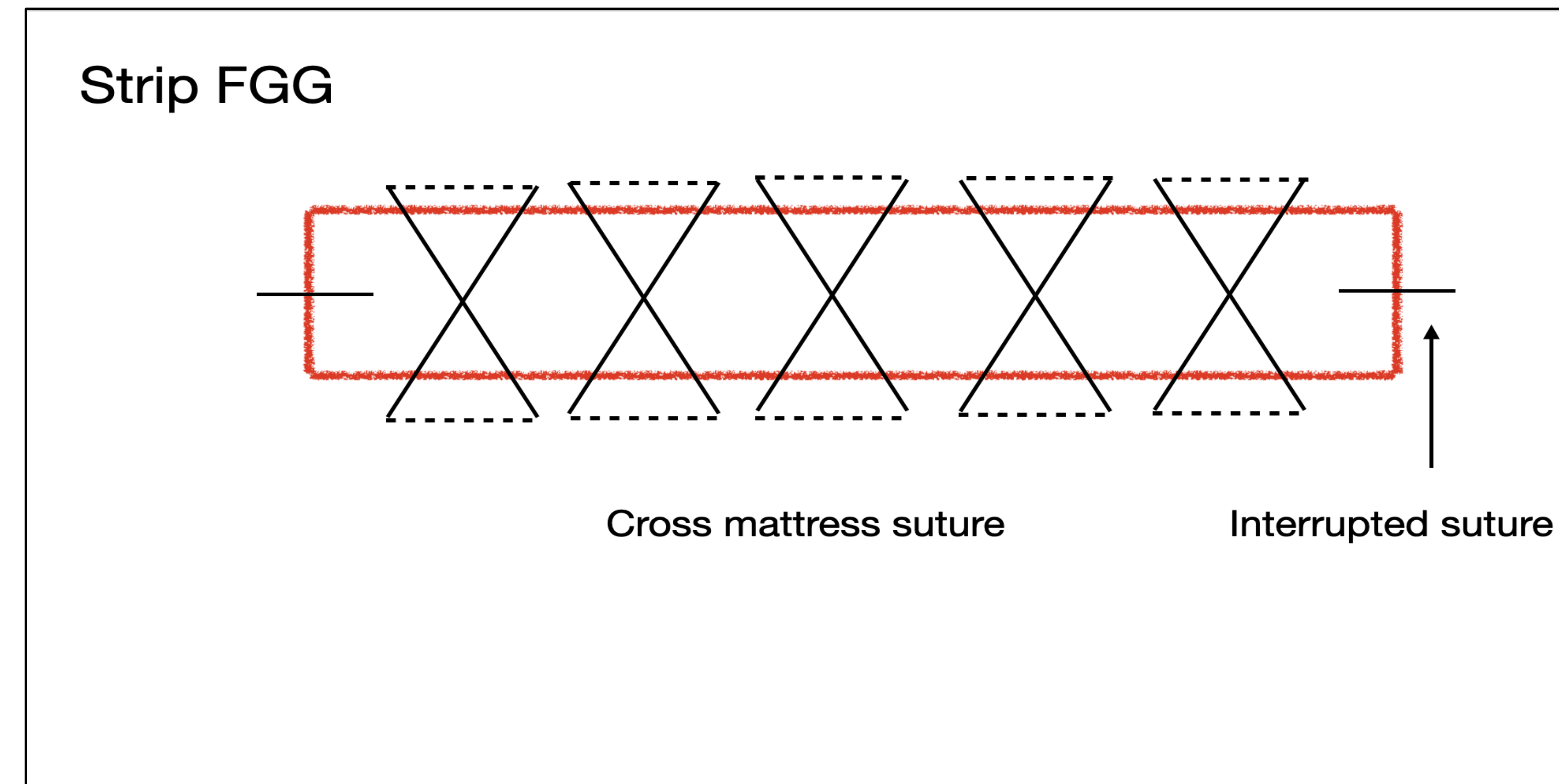
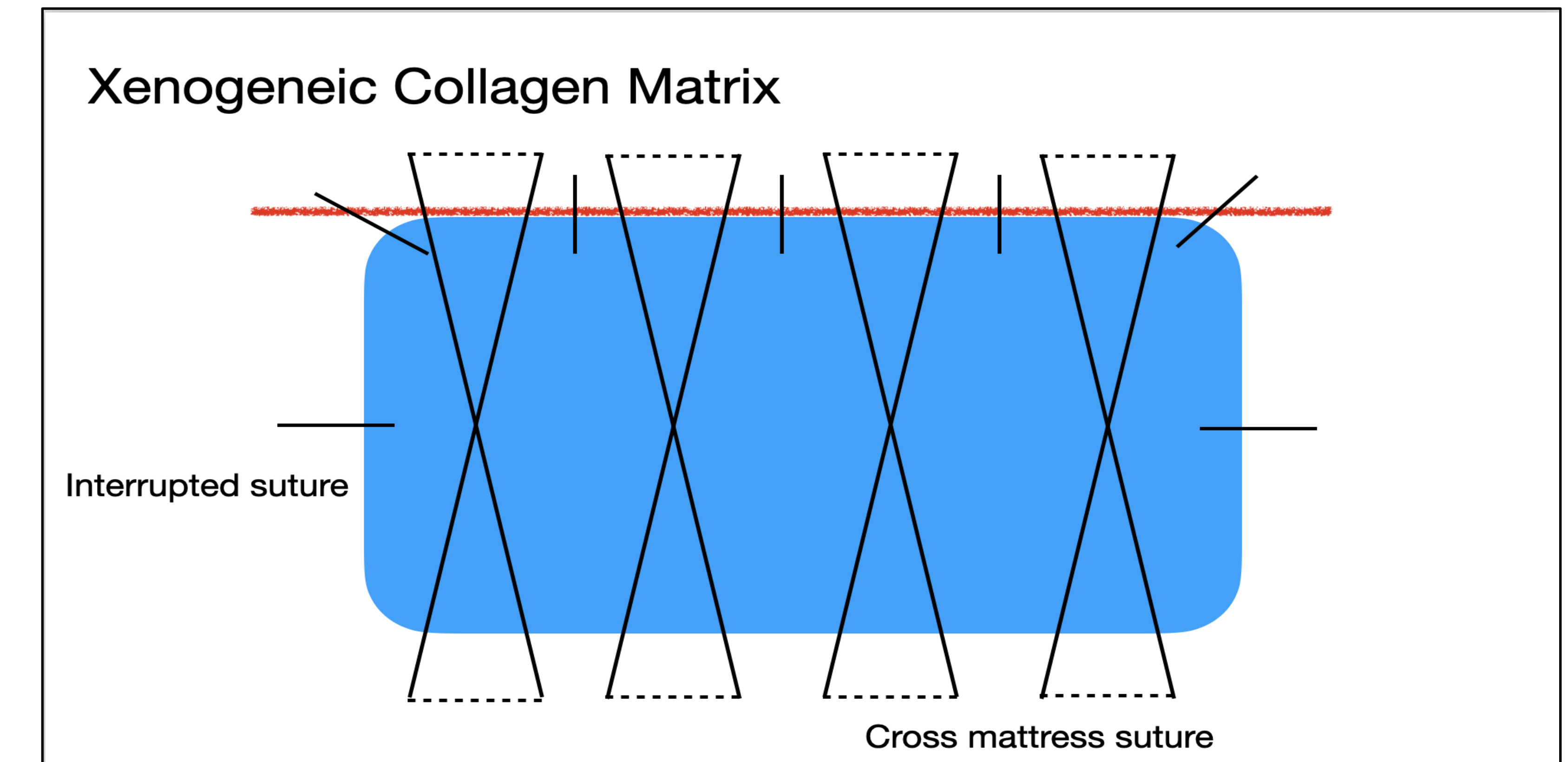


The use of strip gingival grafts and xenogeneic collagen matrix for mucogingival defects resulting following alveolar bone augmentation: A case series

Poster No. P102



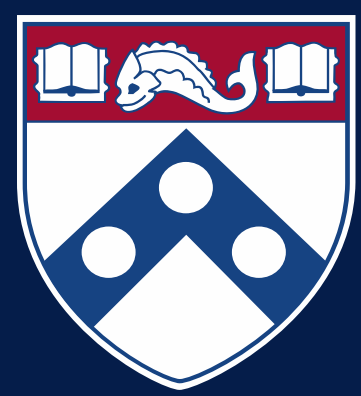
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Background

The regeneration of alveolar ridge defects to allow for implant placement is a predictable treatment option in contemporary dentistry. However, bone augmentation procedures may reduce KT and vestibular depth to obtain maintain bone width and primary closure. Keratinized tissue (KT) around implant is necessary for peri-implant health to avoid plaque accumulation, inflammation, and attachment loss (1,2). Some studies shows less than 2mm KT width is associated with peri-implant disease (3,4). Harvesting auto free gingival graft often causes patient discomfort and surgical complication. A strip auto gingival graft combination with xenogeneic collagen matrix was introduced by Dr. Urban and showed reduction of patient morbidity (5).

This case series describes the outcome of KT width and patient discomfort from this technique.



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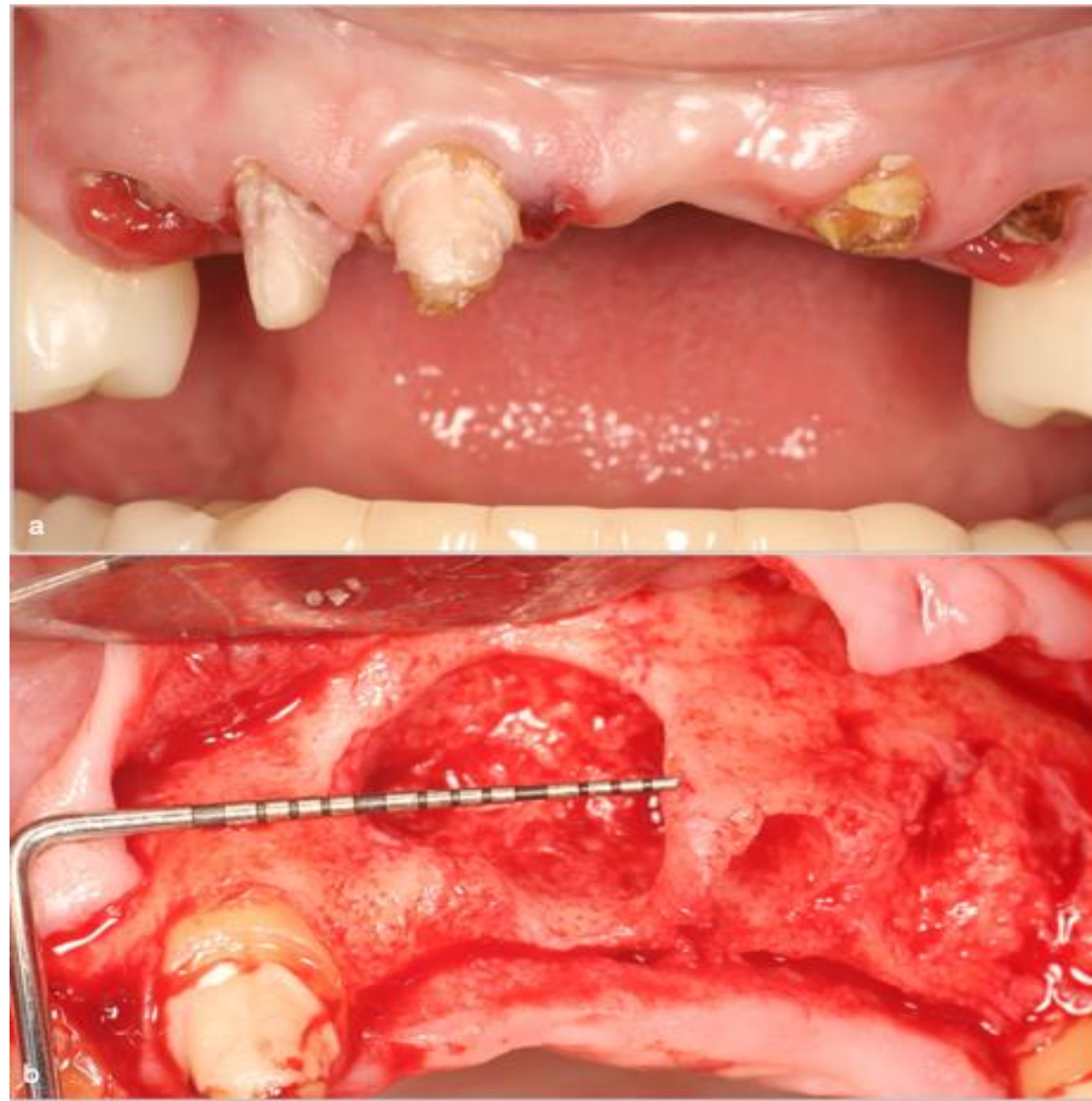
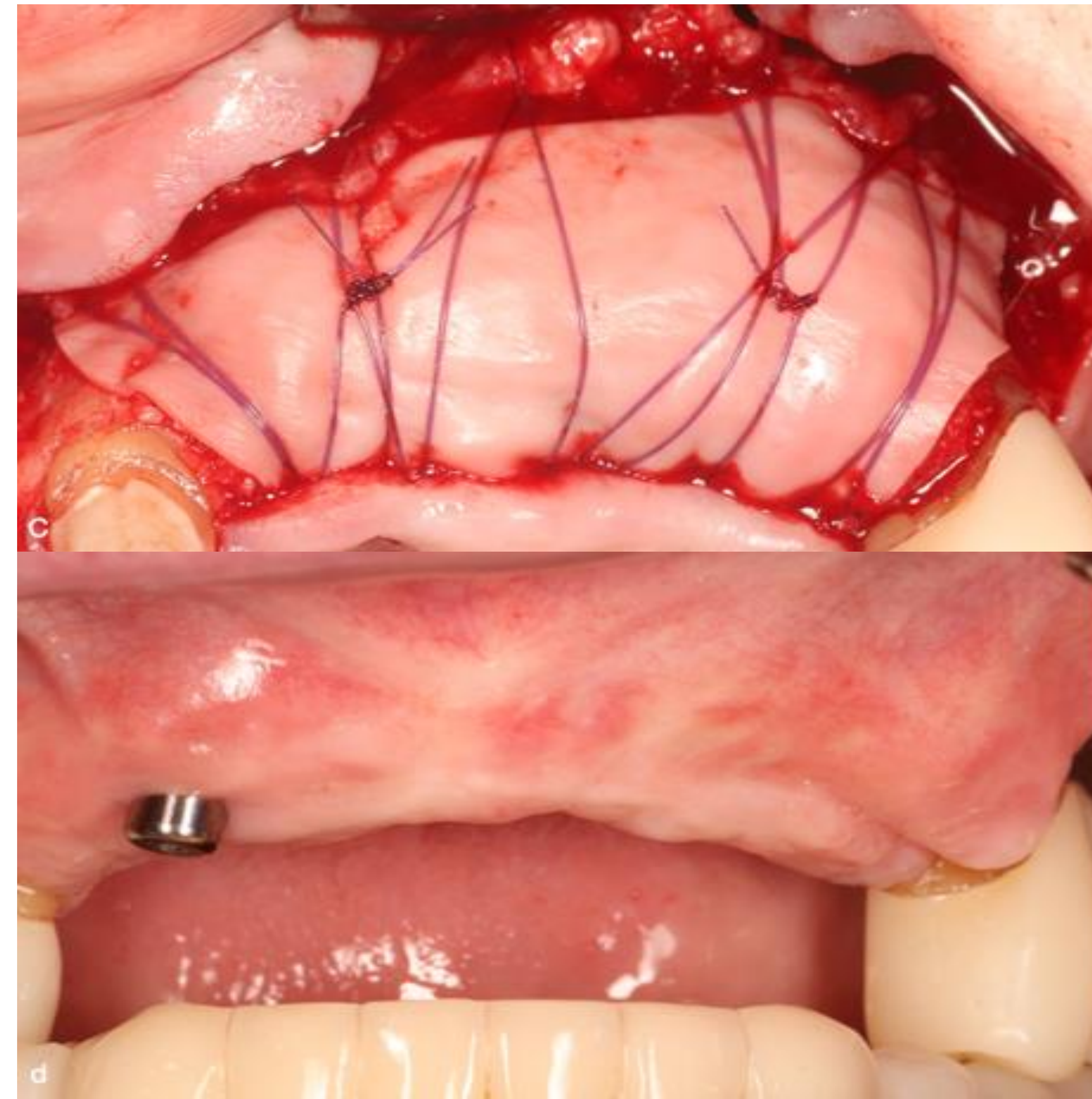
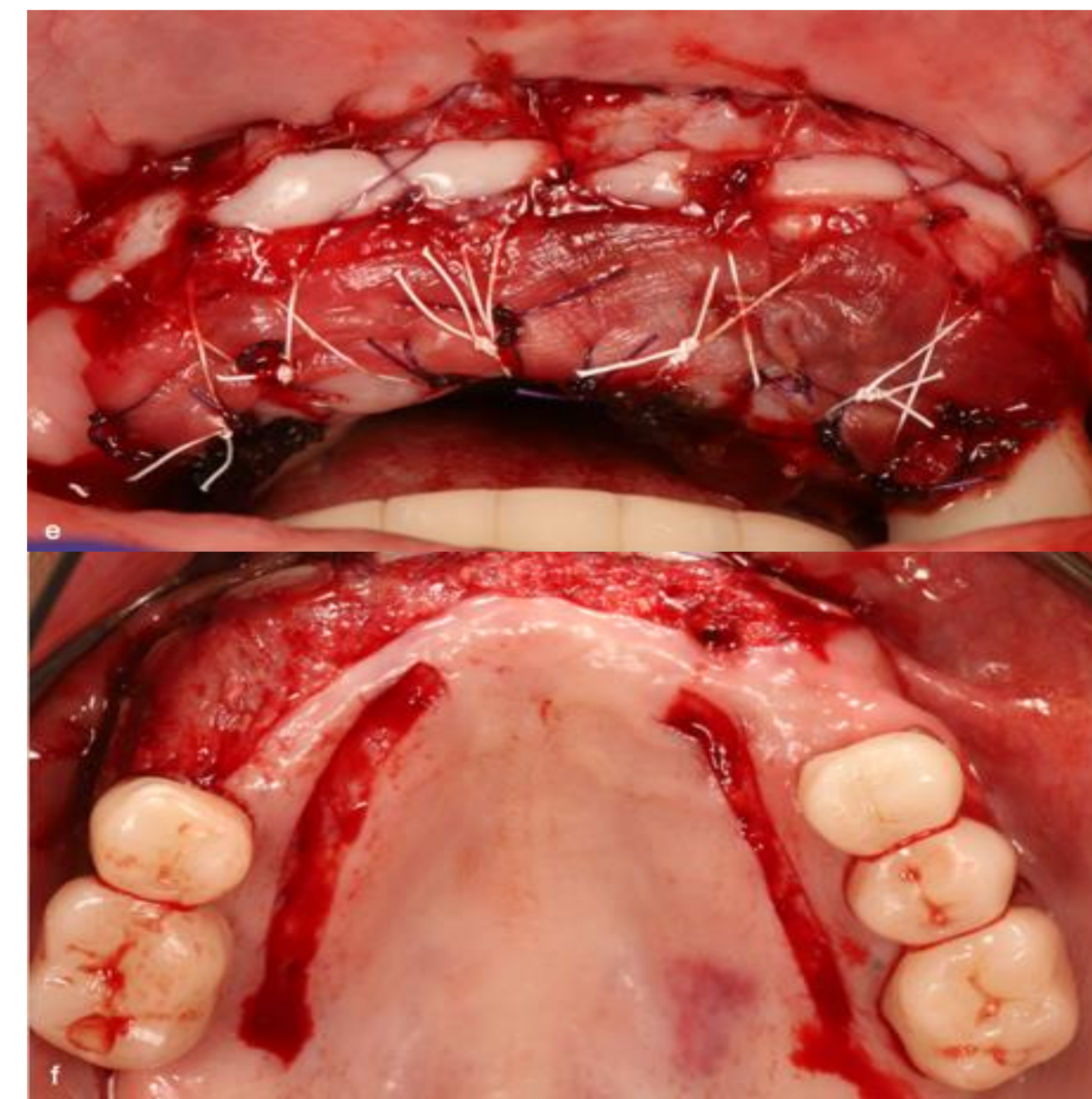


Figure 1.

(a) Pre-operative view

(b) Bone defect

(c) GBR with Lasso suture technique

(d) Clinical view of limitation of KT

(e) A combination of strip gingival grafts and a xenogeneic collagen matrix

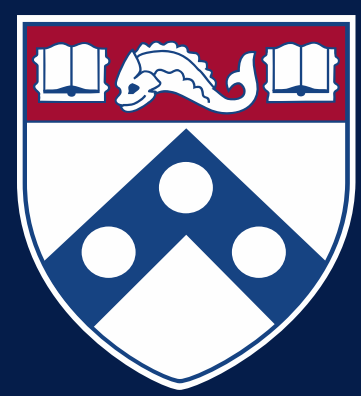
(f) Occlusal view of harvested site

(g) Final restoration

Materials and Methods

Case 1

A 82-year-old male patient with history of controlled diabetes mellitus and atrial fibrillation presented to the Penn Dental Medicine Periodontics Clinic for extraction of non-restorable #6,7,8,11 and 12, followed by replacement of #'s 6,7,10 and 11 with implant-supported crowns. After taking CBCT, we found 10 x 10 mm bone effect on #9 and 10 site. Minimally traumatic extraction of teeth was achieved. We filled with 2cc mix cortical cancellous bone with rhPDGF-BB. The grafted site was covered with pericardium membrane and secured with internal mattress sutures, following the principles of the "Lasso suture" technique. (6) A cone-beam CT scan was taken at the 6-month follow-up for assessment of the site and planed implant placement. Re-entry was concluded at 7 months, via full thickness flap was elevation to determine graft material incorporation and replacement, and four dental implants (Southern Provita 12-degree co-axis 4.0 x 11.5 mm at site #'s 6 and 7, Southern Provita 4.0 x 10 mm and 4.0 x 13mm at site #'s 10 and 11, respectively) and cover screws and healing abutment at site # 7 were inserted. Tension-free primary closure was achieved. Post-surgical instructions and prescriptions were reviewed. The patient was seen without any complication and found there is limitation of KT on #8-11 site. Partial thickness flap was obtained and repositioned with T matless suture. Sprit FGGs (2 x 40mm) were harvested in both palatal site and connected with 6.0 Glycolon suture. The strip FGG was sutured to the apical end of the recipient bed with 5.0 chromic gut by cross mattress suture and simple interrupted at the lateral sides. X enogeneic collagen matrix (Mucograft®) was sutured with 5.0 Glycolon at remain mucosal area.



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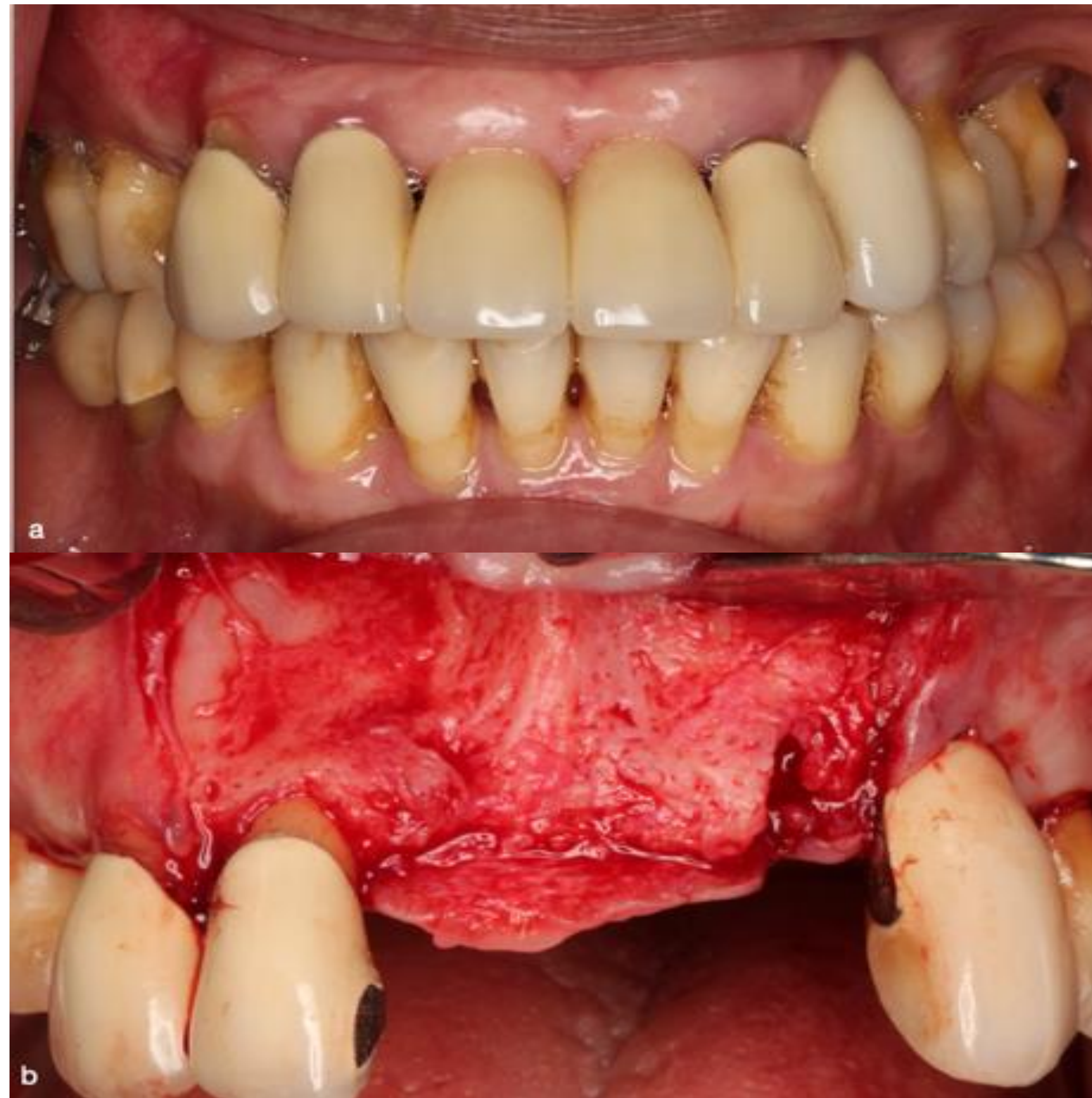
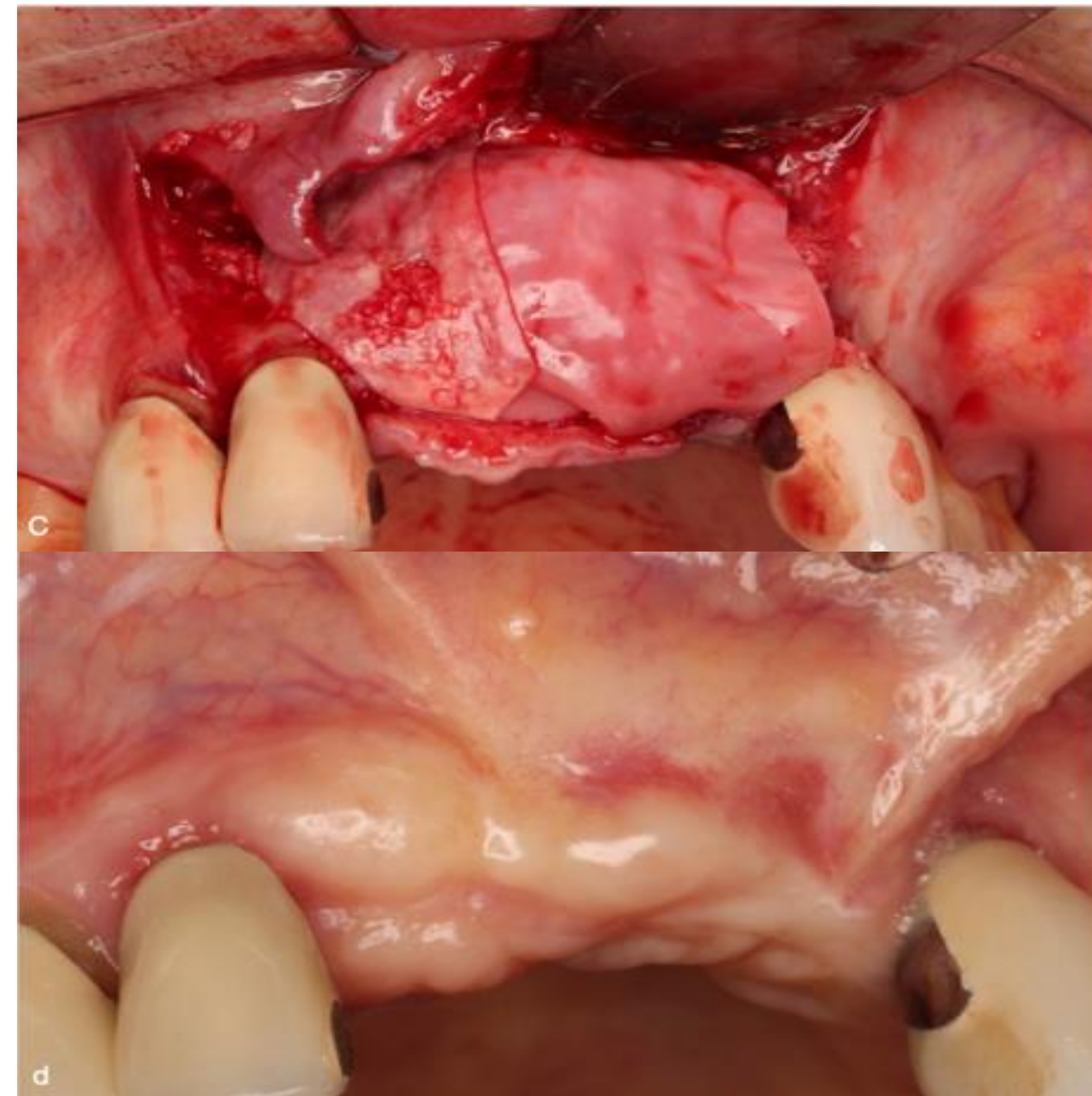
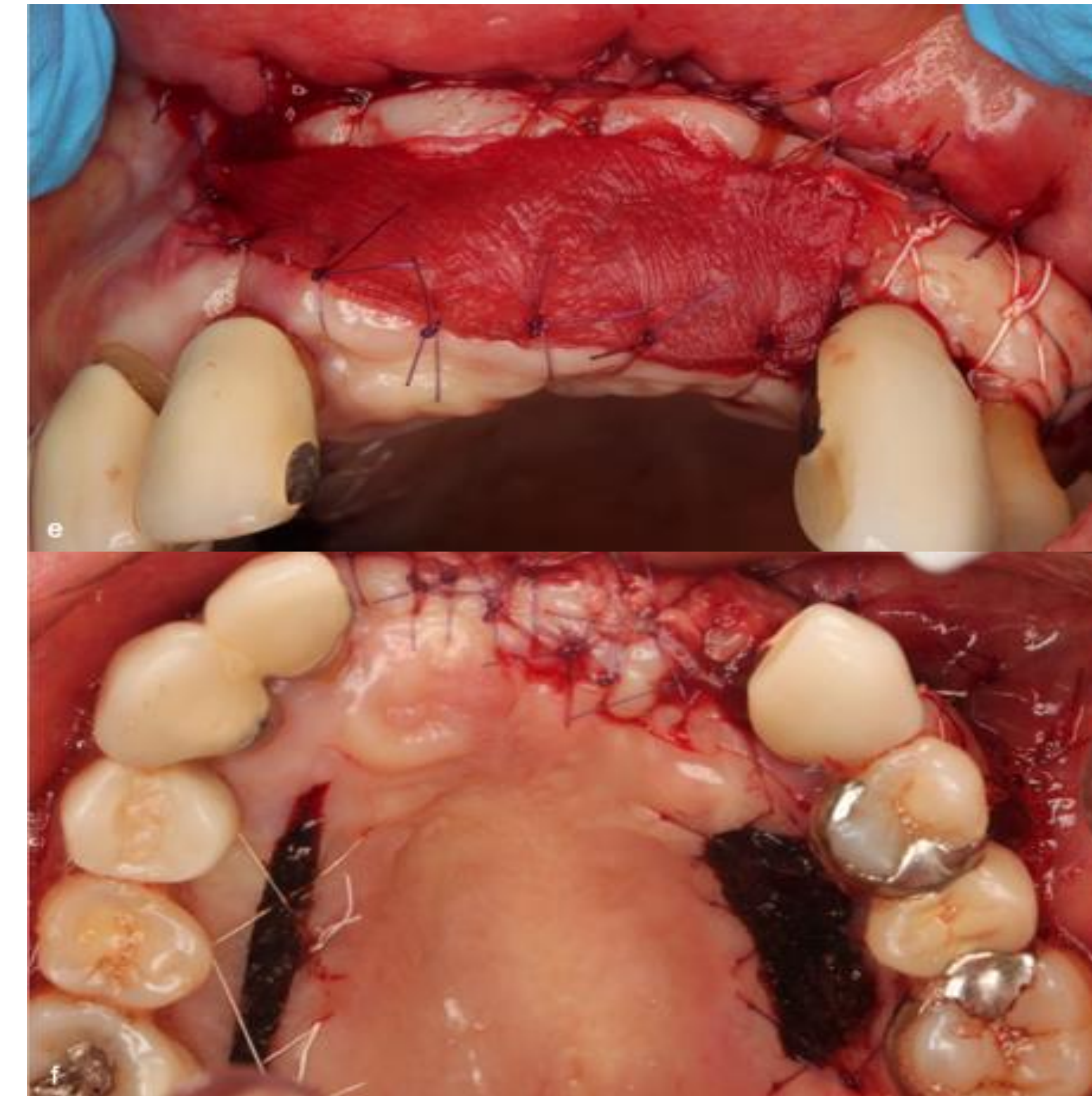


Figure 2.

(a) Pre-operative view

(b) Bone defect

(c) GBR

(d) Clinical view of limitation of KT

(e) A combination of strip gingival grafts and a xenogeneic collagen matrix

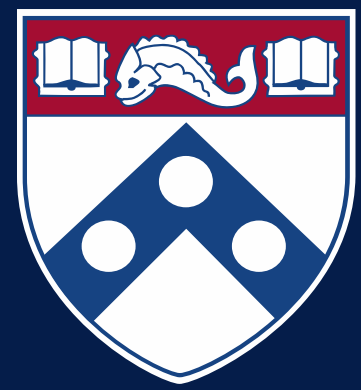
(f) Occlusal view of harvested site

(g) Final restoration

Materials and Methods

Case 2

A 65-year-old female patient with non-contributory medical history of presented to the Penn Dental Medicine Periodontics Clinic for extraction of non-restorable #10, followed by replacement of #'s 8,9 with implant-supported crowns. After taking CBCT, we found bone defect on #8 and 9 site. After minimally traumatic extraction of #10 was achieved, we filled with 2cc mix cortical cancellous bone with PRF. The grafted site was covered with pericardium membrane and secured with internal mattress sutures. A cone-beam CT scan was taken at the 6-month follow-up for assessment of the site and planed implant placement. Re-entry was concluded at 7 months, via full thickness flap was elevation to determine graft material incorporation and replacement, and two dental implants (Strauman EV 4.1 x 10 mm at both site #'s 8 and 9) and cover screws. Tension-free primary closure was achieved. Post-surgical instructions and prescriptions were reviewed. The patient was seen without any complication and found there is limitation of KT on #9 -11 site. Partial thickness flap was obtained and repositioned with T matless suture. Sprit FGG (2 x 20mm) on left palatal site and FGG on right palatal site (3.5 x 20mm) were harvested in both palatal site and connected with 6.0 Glycolon suture. The FGG was sutured on #11 site with 3.0 cytoplasm and 4.0 glycolon suture. The strip FGG was sutured to the apical end of the recipient bed with 5.0 chromic gut by cross mattress suture and simple interrupted at the lateral sides. Xenogeneic collagen matrix (Mucograft®) was sutured with 5.0 Glycolon at remain mucosal area.



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Results

The patients were evaluated two-weeks postoperatively and then monthly. Healing progressed without complications. Average KT gain after 6 moths was 5.2 (3.0-7.0) mm. Case 1 had minimal pain on both donor and recipient site (VAS 1-4), case 2 also has manageable pain, (FGG site > sprit FGG)

Conclusions

The use of strip gingival graft and xenogeneic collagen matrix for mucogingival defect show significantly increase KT and improvement of patient morbidity.

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