



Effectiveness of Bichat's buccal fat pad (BFP) technique for vertical ridge augmentation in the maxilla

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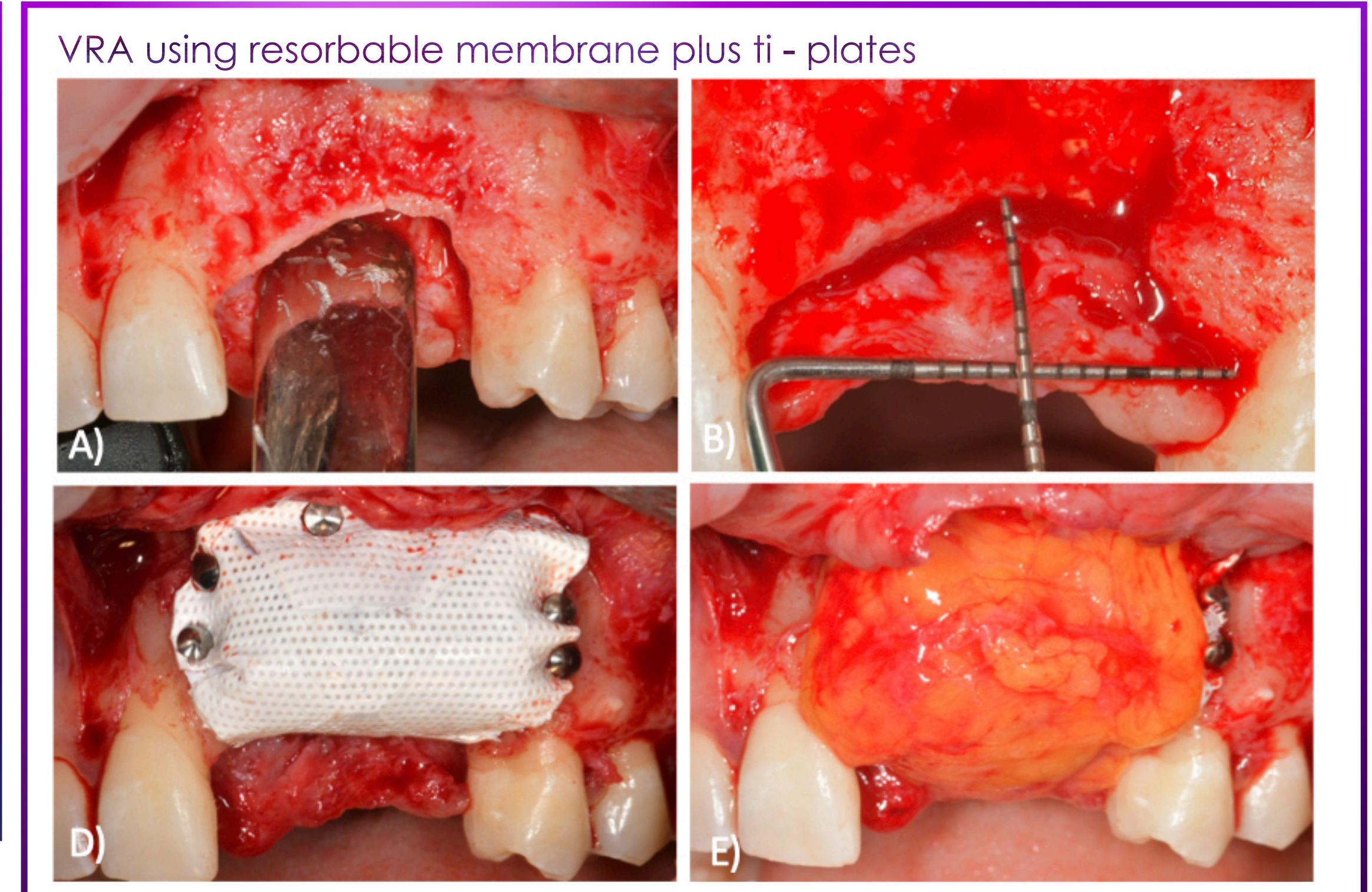
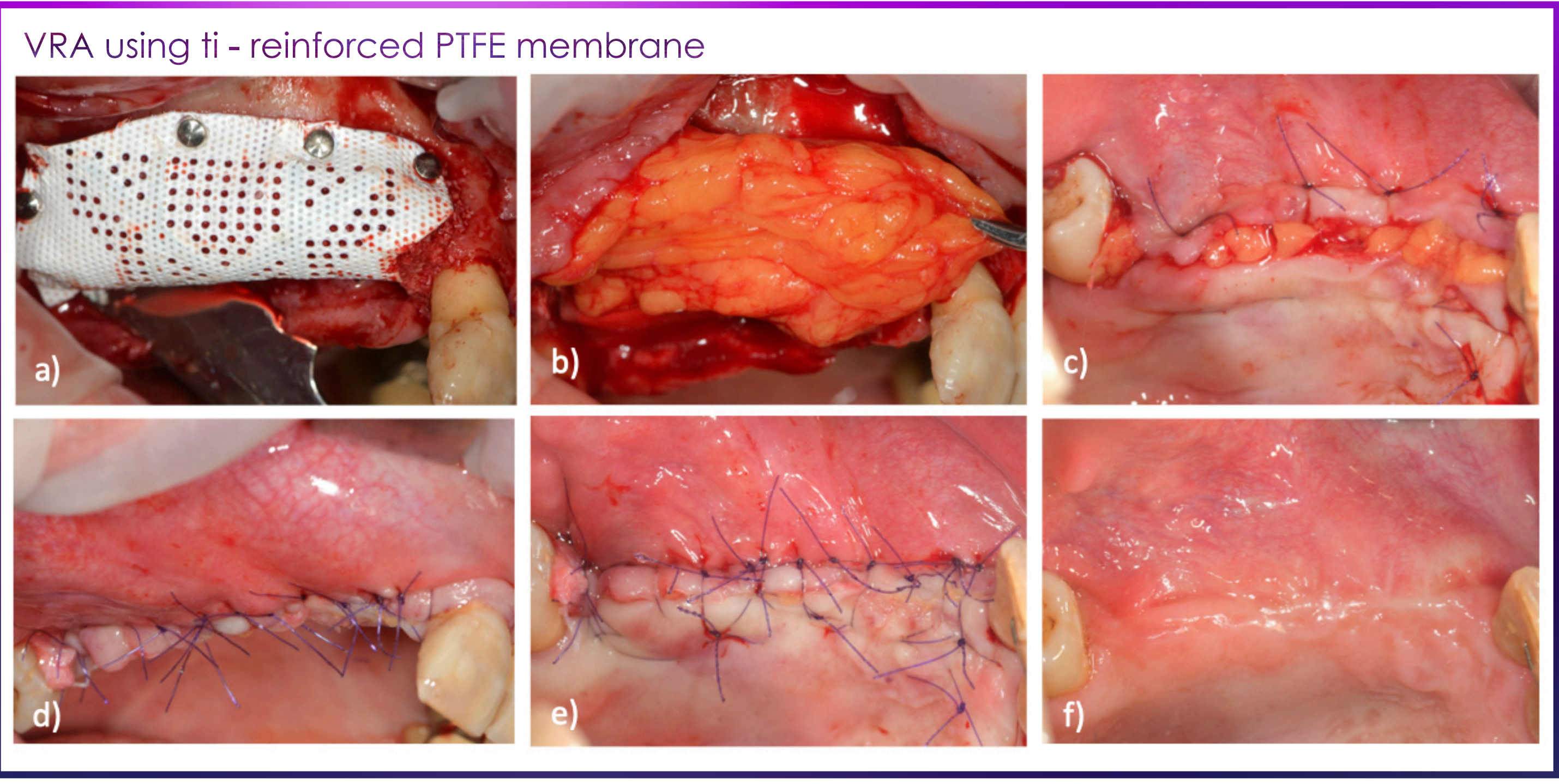
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BACKGROUND AND AIM

GBR is one of the most efficient techniques for vertical ridge augmentation (VRA). Healing complications represent an adverse event that may lead to partial/complete failure of the bone augmentation. In order to improve soft tissue healing and reducing the risk of barrier exposure, Bichat's Buccal Fat Pad (BFP) can be used to cover augmented area before primary closure. This pilot study aimed to evaluate the efficacy of (BFP) for covering three different non-resorbable devices used for VRA.

METHODS AND MATERIALS

A total of 12 consecutive patients with 14 vertical bone defects in need of bone augmentation for implant-prosthetic rehabilitation were treated. VRA was performed by means of: customized titanium meshes or titanium-reinforced PTFE membranes or resorbable membranes plus titanium plates. The space under the barrier device was filled with a mixture of: 50:50 of autogenous and xenogeneic bone plus peripheral venous blood. After buccal flap mobilization the BFP was identified and isolated; then it was mesially and coronally advanced to cover the whole augmented area. Reopening surgery (barrier removal and implant placement) was performed after 6 to 12 months. The following parameters were recorded: periosteum type (native/scarred), BFP dimensions and total surface, surgical complications, healing complications; vertical bone gain (VBG), bone density (soft, medium, hard), pseudo-periosteum type (class I, class II, class III), number of implants inserted, implant stability, implant osseointegration.



RESULTS

8 sites showed a native periosteum, while 6 sites scarred periosteum. 7 sites showed a medium bone density, 4 sites soft density, and only 3 sites showed a hard bone density. Regarding pseudo-periosteum type, most of sites (n=8) were assessed as belonging to class I, (n=3) sites belonging to class II, and (n=3) were classified as class III. The mean surface of the BFP was $13.5 \pm 5.5 \text{ cm}^2$. In none of the 14 augmented sites, healing complications or facial volumetric changes were assessed. The surgical complication rate was 14.3%. The mean VBG was $4.2 \pm 1.8 \text{ mm}$. In total, 35 implants were inserted in 12 patients and all implants achieved an implant osseointegration rate of 100%.

CONCLUSIONS

Despite the limitation of this study due to the small sample size, the Bichat's Buccal Fat Pad technique showed promising results to prevent healing complications after vertical ridge augmentation in the maxilla; in particular, regarding early or late exposure of the non-resorbable membrane, titanium mesh or miniplate. The management of the BFP allowed a coronal and mesial displacement from posterior to anterior regions. The BFP, used as "natural barrier" to cover augmented sites seems to be an efficient technique to improve soft tissue healing; however, further studies are required to validate this procedure.

