



Clinical procedure of Dr. Georgios Nikou, Prof. Anton Sculean and Dr. Peter Thoolen, Nijmegen, Netherlands

> Treatment of bone and soft tissue deficiencies in the aesthetic area using Bio-Oss®, Bio-Gide® and connective tissue graft



1. Indication profile

Region	<input checked="" type="checkbox"/> aesthetic region <input type="checkbox"/> non-aesthetic region
	<input checked="" type="checkbox"/> single tooth gap <input type="checkbox"/> multiple tooth gap
Bony situation	<input type="checkbox"/> no bone defect present <input checked="" type="checkbox"/> bone defect present Comment: bone dehiscence and fenestration labially of implant months after implant insertion
Soft tissue situation	<input type="checkbox"/> no recession <input checked="" type="checkbox"/> recession
Bone augmentation indicated	<input checked="" type="checkbox"/> yes Comment: massive bone resorption around implant <input type="checkbox"/> no
Implantation	<input type="checkbox"/> yes, implant insertion simultaneously with regenerative measures <input checked="" type="checkbox"/> yes, soft and hard tissue augmentation around pre-existing, exposed implant surface <input type="checkbox"/> yes, two-stage procedure: implantation planned in second step after augmentation <input type="checkbox"/> no

Background information

Georgios Nikou, Anton Sculean, Peter Thoolen:

«When a tooth is lost and an implant is planned for replacing the tooth, the amount of available alveolar ridge is an important factor. An inadequacy of bone height and width may compromise the implant placement and jeopardize the aesthetic outcome. Therefore augmenting ridge defects will allow for proper implant placement. In case an implant is placed in a defective ridge additional augmentation will be necessary in order to improve the clinical appearance.

For implant-supported restorations an adequate zone of attached gingiva or thickened tissue is desirable to avoid complications such as mechanical tissue trauma, inflammation and poor aesthetics. In recessions around implants as presented here, a connective tissue graft as described by Azzi et al. (1) corrects the mucogingival deficiencies by thickening the existing mucosa and creating a collagenous collar around implants to enhance the soft tissue implant surface restoration.»

2. Aims of the therapy

- > Lateral ridge augmentation to achieve bony integration of the implant, restore the deformed ridge and to build up hard tissue basis for an adequate soft tissue situation (soft tissue follows hard tissue)
- > Soft tissue augmentation with connective tissue graft to achieve adequate soft tissue thickness.

3. Concept Georgios Nikou, Anton Sculean & Peter Thoolen

- > Lateral ridge augmentation using Bio-Oss® and Bio-Gide® and soft tissue augmentation with connective tissue graft.

4. Surgical procedure

- > Case: A 38 year old patient was referred to the department of Periodontology & Biomaterials for treatment due to unaesthetic appearance of the tooth restoration in the region of 21.



Fig. 1 Clinical view at the baseline situation after implant placement. A peri-implant recession and implant exposure is obvious and jeopardizes the aesthetical appearance.



Fig. 2 Radiographic view of the implant with peri-implant radiolucency. A plastic reconstructive surgery with soft tissue and hard tissue augmentation was decided as treatment plan.



Fig. 3 After flap elevation bone fenestration in the middle third of the implant and dehiscence was found.

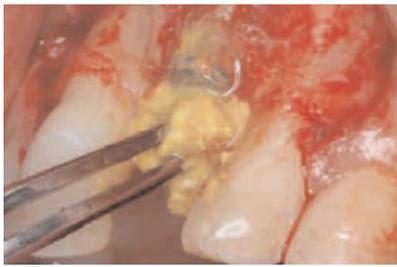


Fig. 4 Decontamination of implant surface by means of topical application of tetracycline.



Fig. 5 Decorticalization of peri-implant bone for providing blood to the area for regeneration



Fig. 6 Bio-Oss® granules (1-2mm) application around the bone defect.



Fig. 7 Bio-Gide membrane application in order to hold the granules in place and exclude soft tissue in-growth.



Fig. 8 Connective tissue graft applied above the membrane in order to increase the width of the soft tissue and improve the aesthetic appearance. **Question to Dr. Nikou and Thoolen: Where was the graft harvested from? If possible, please give more details in writing.**



Fig. 9 Suture of the flap in coronal position after mobilizing the soft tissue with periosteal incision. **Question to Dr. Nikou and Thoolen: Please give more details on suturing technique, materials.**

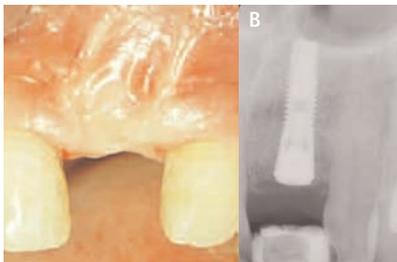


Fig. 10 Situation after 6 months healing: clinically an adequate soft tissue was created (A) while radiographically no more radiolucency was visible (B)

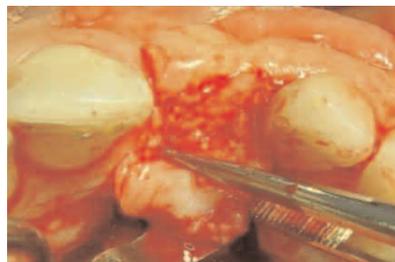


Fig. 11 During the second stage for the healing abutment placement the Modified Roll technique was performed in order to additionally improve the soft tissue condition. Then the healing abutment was placed and the sutures were placed.

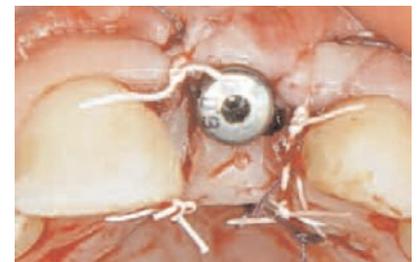


Fig. 12 Healing abutment positioning and suturing



Fig. 13 Clinical view 1 year after surgery. The final restoration is already cemented.



Fig. 14 Radiographic appearance 1 year after surgery.



Fig. 15 Profile appearance of the region after hard and soft tissue augmentation. The profile shows considerable width.

Sources of supply

If relevant...

Literature References

1 Azzi R., Etienne D., Takei H., Fenech P. Surgical thickening of the existing gingiva and reconstruction of interdental papillae around implant-supported restorations. Int. J. Periodontics Restorative Dent. 2002,22,71-77.

Further indication sheets

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Division Biomaterials
CH-6110 Wolhusen, Switzerland
phone +41-41-49 25 -630
fax +41-41-49 25 -639
www.geistlich.com

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