

BioBrief

GUIDED BONE REGENERATION
FOR LATE IMPLANT PLACEMENT

Dr. Arnd Lohmann, MSc

Lateral and Vertical Bone Regeneration With Simultaneous Soft Tissue Augmentation

leading regeneration

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Geistlich

The Situation

After extraction of the periodontally damaged tooth #20 the preoperative Cone-Beam Computed Tomography (CBCT) imaging shows reduced vertical bone volume in the area of tooth #s 18 - 20. A lateral and vertical bone regeneration was necessary.

The goal of treatment was a late implant placement after bone regeneration and creation of stable periimplant soft tissue for long-term implant preservation.

The Approach

A customized bone regeneration procedure utilizing Yxoss CBR®. Followed by coverage of the graft with Geistlich Bio-Gide® for the purpose of Guided Bone Regeneration (GBR). Soft tissue thickening using Geistlich Fibro-Gide®. Delayed implantation into the augmented tissue. A vestibuloplasty with Geistlich Mucograft® for the regeneration of keratinized mucosa.

The Risk Profile

	Low Risk	Medium Risk	High Risk
Patient's health	Intact immune system	Light smoker	Impaired immune system
Patient's esthetic requirements	Low	Medium	High
Gingival biotype	Thick - "low scalloped"	Medium – "medium scalloped"	Thin - "high scalloped"
Infection at implant sight	None	Chronic	Acute
Bone height at adjacent tooth	≤ 5 mm from contact point	5.5 - 6.5 mm from contact point	≥ 7 mm from contact point
Width of tooth gap	1 tooth (≥ 7 mm)	1 tooth (≤ 7 mm)	2 teeth or more
Soft-tissue anatomy	Intact		Compromised
Bone anatomy of the alveolar ridge	No defect	Horizontal defect	Vertical defect
Additional Risk Factors: Roots were divergent, and intra-radicular bone (septal bone) was excellent, with more than 5 mm of remaining apical bone to achieve optimal primary stability.			

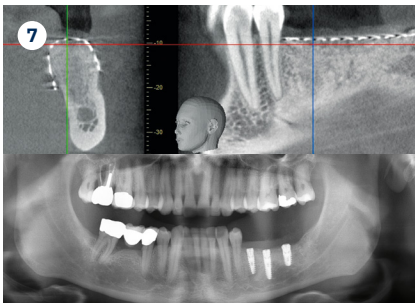
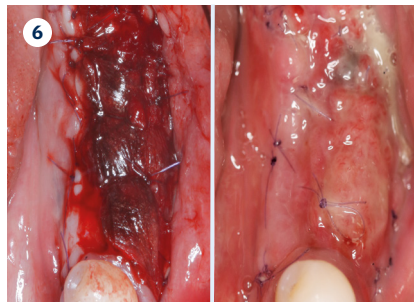
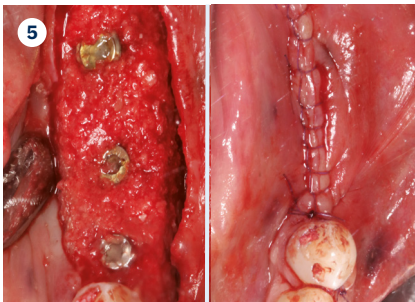
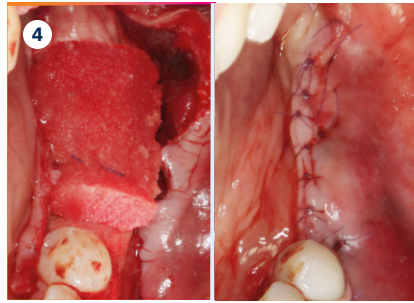
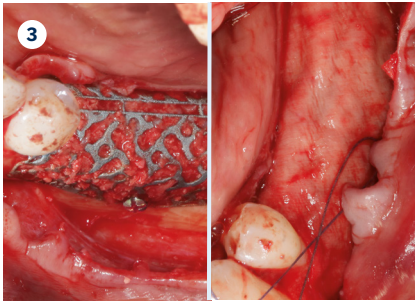
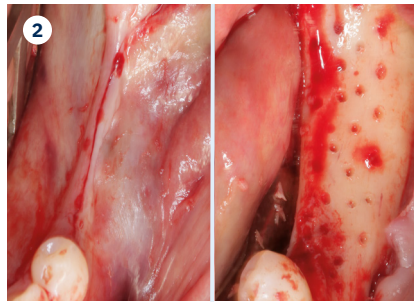
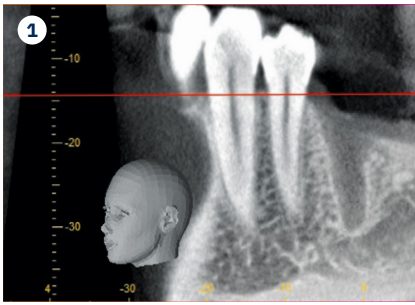
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Dr. Med. Dent.

Dr. Arnd Lohmann is a recognized specialist in implantology and periodontology. He earned his dental license in Hamburg in 2002, completed his doctorate in 2003, and has been a partner at a private practice in Bremen since then.

With a Master of Science in Implantology (2007), he specializes in dental implantology and bone augmentation. He is an active speaker at national and international congresses, leads the Bremen study group of the German Society of Oral Implantology (DGOI), and is a member of DGOI, DGZI, and DGI. His practice is equipped with state-of-the-art technology, ensuring high-quality patient care.



“Implant therapy should restore the natural anatomical structures as closely as possible in order to avoid subsequent peri-implant problems.”



The Outcome

Treatment resulted in approximately 5 mm of vertical bone regeneration. The potential occurrence of a dehiscence associated with a wound opening and exposure of Yxoss CBR® was able to be prevented with Geistlich Fibro-Gide®.

On one hand, the quality of the peri-implant soft tissue was improved by the soft tissue thickening with Geistlich Fibro-Gide® and, on the other, by increasing the width of keratinized mucosa with Geistlich Mucograft®. The treatment method chosen resulted in a reduced invasiveness and morbidity by avoiding a donor site for sourcing a transplant.

- 1 Baseline situation and planning: vertical bone deficit of 5.29mm in section 18-20.
- 2 Central incision in the keratinized mucosa and perforated cortical bone.
- 3 Yxoss CBR® filled with a 50:50 mix of autologous bone and Geistlich Bio-Oss®. Coverage of the titanium scaffold with Geistlich Bio-Gide®
- 4 Geistlich Fibro-Gide® is tailored to the defect and a tension-free suture is done.
- 5 4 months after augmentation shows the bone situation after removal of the titanium scaffold and insertion of implants. Autologous bone chips are applied on top of the implants. Occlusal view of the mucosa level after implantation and wound closure.
- 6 6 weeks after implantation and 5 1/2 months after augmentation. The mucosa is prepared apically; the preparation reaches the periosteum apically. The recipient site is fully surrounded by keratinized mucosa. Geistlich Mucograft® is sutured into the area.
- 7 6 months after regeneration shows about 5mm of vertical bone regeneration. Panoramic X-Ray after implant placement shows clearly recognizable mucosa shadows.
- 8 One year after augmentation shows the dental prosthesis inserted occlusally.

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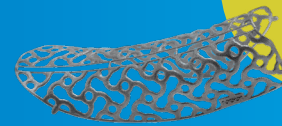
Using the Geistlich Fibro-Gide® matrix enabled concurrent augmentation of hard and soft tissues without any postoperative complications. At the same time, the soft tissue thickening facilitated floor of the mouth surgery and vestibuloplasty.”

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Keys to Success



- Pre-operative professional dental cleaning
- Fixation of the titanium scaffold
- Full coverage of Yxoss CBR[®] with Geistlich Bio-Gide[®] and Geistlich Fibro-Gide[®]
- Completely tension-free wound closure (wound edges should overlap by 5-10mm)
- Creation of at least 2-3mm wide zone of keratinized mucosa around the implants



For more information, please visit:
www.geistlich.us

CAUTION: Federal law restricts these devices to sale by or on the order of a dentist or physician.

For more information on contraindications, precautions, and directions for use, please refer to the Instructions for Use at:
<https://www.geistlich-na.com/dental-professionals/instructions-for-use>

Disclaimer: These results are not guaranteed; individual outcomes may vary depending on patient circumstances. This information is for informational purposes only and may not reflect Geistlich's official position, opinion, or recommendation. Treatment decisions are made at the physician's discretion, based on the unique needs of each patient.