

Guided Bone Regeneration in 3 walled defect - A Case Report -

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Introduction:

To provide adequate bone volume and to assure an adequate aesthetic result, bone augmentation procedures are sometimes a prerequisite for successful dental implant treatment. Each type of augmentation material may be used combined with a variety of different surgical techniques. Guided bone regeneration (GBR) with mechanical barriers, has been shown to be effective in the treatment of bone defects around dental implants.(1)

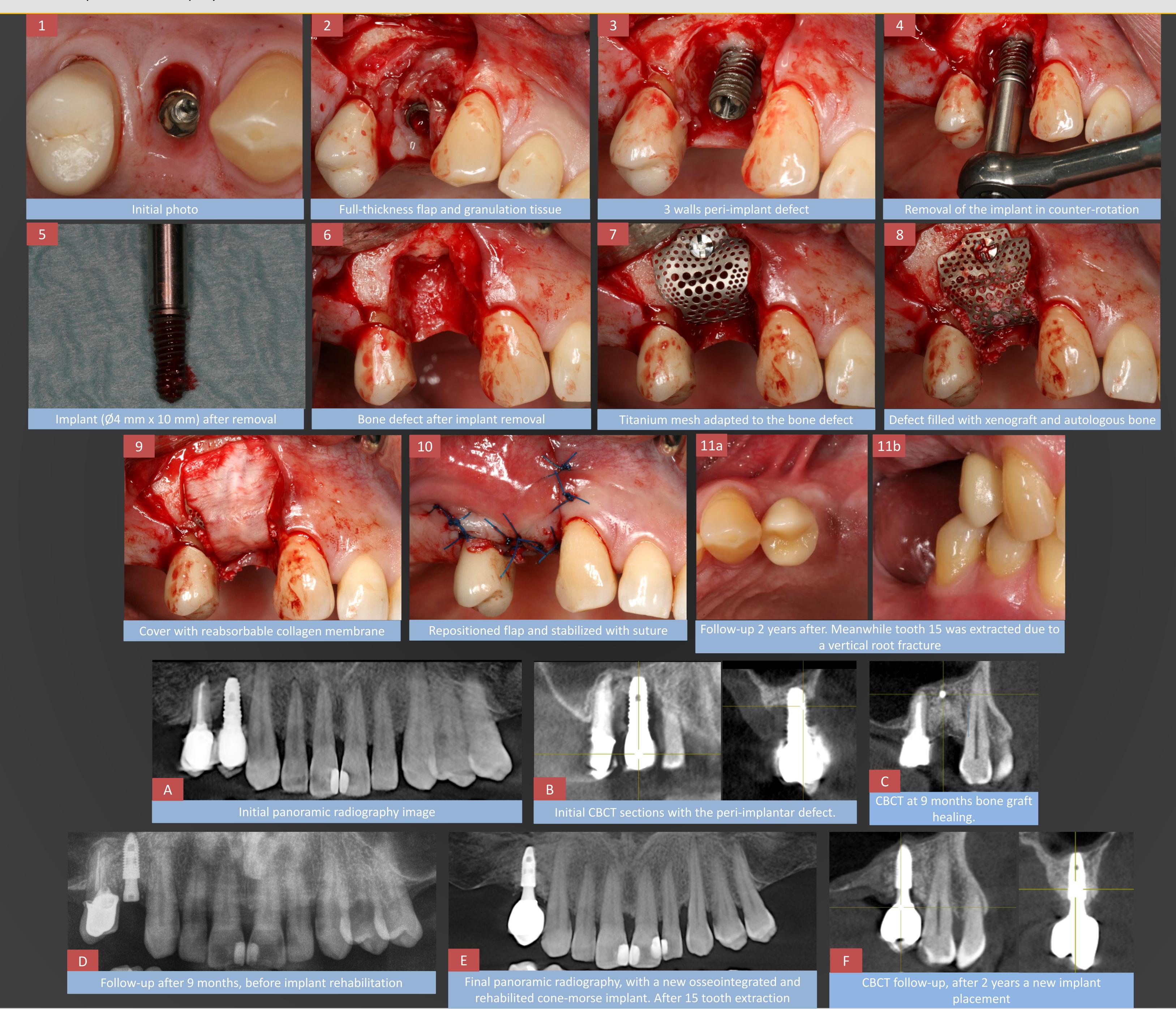
Purpose:

Recovery of vertical and horizontal bone volume, after severe 3 walled defect caused by perimplantitis, for placement of new dental implant.

Description of the clinical case:

Male patient, 54 years old, non-smoker, non-medicated and without relevant medical history (ASA I). Since the patient presents periodontal disease has been followed in the periodontal appointment, to keep the disease controlled. This case report an Osstem TS III implant (platform of 4 mm diameter, 10 mm length and SLA surface) rehabilitated with unitary crown screwed directly to the implant. The implant was placed 3 years and 6 months ago, in the 14 location, and presented a diagnosis of peri-implantitis. After removal of granulation tissue and implant extraction due to peri-implantitis, GBR was made using xenograft covered with a titanium mesh fixed with osteosynthesis screw.

A collagen membrane was adapted to cover all. The flap was sutured without tension. After 9 months, the titanium mesh was removed and, in the same surgery appointment, a new dental implant Neodent CM EX (Morse Cone internal connection) was placed. The implant was rehabilitated 3 months later with zirconium crown cemented on solid abutment with TempBond. Follow-up 2 years after CBCT.



Conclusion:

GBR is essential to allow the regeneration of sufficient bone volume for ideal implant placement, but both vertical and horizontal augmentations represent a huge challenge in the clinical practice of implantology. There are several techniques described in the literature for both vertical and horizontal GBR and the use of titanium mesh is one of them and one of the clinical advantages is the possibility of correcting severe vertical atrophies associated with considerable reductions in width. (1,2,3)

Clinical studies currently available in literature have shown the predictability of this non-resorbable membrane. In this case, the selection of this technique allows the purpose. Due to their mechanical characteristics, the titanium meshes allow the maintenance of the space for regeneration and prevent the collapse of the adjacent soft tissues ^(2,3,4). Because of its rigidity there is a greater probability of exposure, which happened in this case, as well as mechanical irritation of the flap mucosa ^(4,5,6). According to the literature, membrane exposure *per se* and in the absence of infection, did not imply having to be early removed or prevented implant placement ^(2,5,6). The use of titanium mesh during bone increasing procedures, with horizontal and vertical augmentation prior to implant placement, is still on-going and seems to be a predictable solution. Furthermore, literature reports a 4.8mm (range 4–7mm) mean vertical bone augmentation and 4.36 mm mean horizontal bone augmentation reachable by means of this technique ^(7,8). The implants placed in to augmented bone using this technique exhibit peri-implant stability with high survival (ranged from 94.1 to 100.0%) and the marginal bone level loss is comparable with dental implants in non-augmented bone ^(6,8).

Bibliography