



Implant-prosthetic rehabilitation: 1-stage surgery with post-extraction, hard and soft tissue regeneration and immediate fixed prosthesis.

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BACKGROUND

The predictable application of hard and soft tissue regenerative techniques has made it possible to pursue the goal of a prosthetically guided implantology. Increasing importance is given to soft tissue management, which in some cases can be associated with implant treatment to obtain an adequate supracrestal mucosal thickness. When possible, the combined application of several techniques allows fewer surgeries and an optimization of the healing process.



PRE-OPERATIVE EVALUATION

CASE PRESENTATION

49 year-old patient, ASA 1, non-smoker: she showed up with a fixed bridge from 14 to 16, 15 as the missing element, reporting mobility and pain. After clinical and x-ray check-up, with intraoral and CBCT, it is evident a vertical fracture of the 14 root, rehabilitated with a long intracanal metal pin. The compromised root caused a wide periradicular infrabony injury with a vertical bone loss of up to 12mm buccal and 3,5mm palatal. On 15 the residual alveolar process measures 7mm Height and 7.5mm width. The patient asked a fixed rehabilitation, without involving healthy elements or a large number of surgeries. Based on clinical evidence, literature and surgeon skill, a 1-stage surgery was planned. 15 and 16 crowns were separated and the fractured tooth extracted. On 15 site, after a 3mm \varnothing mucotomy, the implant site was prepared with a concomitant crestal sinus elevation (vertical gain from 6 to 10mm). The sinus lift

technique (M.I.S.E.[®]) allows to obtain a floor deformation, before the detachment of a bone operculum of about 3mm \varnothing , increasing the path by at least 2mm, with better BIC and primary stability. On 14 a bone condensation is performed in the digitally planned implant position with magneto-dynamic osteotomes (Magnetic Mallet[®]). The residual bone, apically to defect, was compacted and deformed together with maxillary sinus floor with an additional



POST-EXTRACTION SITE AND PERIODONTAL DEFECT ON 16



TOOTH EXTRACTION AND OSTEOLYTIC LESION



BONE CONDENSATION AND SINUS LIFT ON 15

bone gain of 2mm. Implants with U.T.M. neck (Prama[®]) were inserted with torque between 20 and 25 ncm. Degranulation of periodontal defect, scaling, root planning and decontamination with 24% EDTA gel was applied on the root surface of 16. A simultaneous GBR was performed, using a high porosity porcine-derived carbonate apatite (Zcore[®]) mixed with cross-linked hyaluronic acid (Hyadent BG[®]) and covered with a rigid cross-linked collagen membrane (Osseoguard[®]) fixed with micro-tacks, sutures and the healing screw to the implant on 15. A matrix (Mucoderm[®]) was perforated and placed over around the neck of 15, then covered with surgical CAF sutured with 5/00 PGA mono. An immediate fixed prosthesis was screwed onto the implant on 15, and cemented with a metal wing on 13. After 6 months of healing and conditioning, the provisional was removed and single crowns on 14 and 15 realized.



BONE DEFECT PROBING

CONCLUSION

After 1 year we can observe a perfect clinical and radiological integration of the implants, a mature sinus lift on 15, a resolution of the periodontal defect on 16 and the wide bone defect on 14. The use of a rigid, cross-linked, bone-fixed and supported resorbable membrane is effective in correcting defects with a small vertical component. Bone condensation make it possible to increase primary stability even in presence of small residual bone. U.T.M. neck facilitates the fixing of collagen matrix, allowing the maturation of hard and soft tissues. Combining multiple techniques with few surgeries allows to optimize the healing processes as well as to reduce overall treatment time, in favor of a lower invasiveness of the therapy.



IMPLANT PLACEMENT AND GBR



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1Y FOLLOW-UP



P.O. AND IMMEDIATE PROSTHESIS



1Y FOLLOW-UP