

Reconstruction of an Edentulous Mandible after Loosing 4 Implants by Severe Peri-implantitis



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Objectives

A 79-year-old female patient wearing a 10-year-old implant fixed restoration presented with an increasing bone loss caused by a progressive peri-implantitis, and she requested a new implant fixed prosthesis because of she was not able to get a conventional prostheses attached in her the edentulous mandible. The basic situation was marked by a major 3D bone defect in area 35 to 45. The inflammation and the occurred explantation left quite an ungentle and scar-penetrated soft tissue. Based on a DVT diagnostic, a customized YxossCBR® titanium scaffold was constructed and the surgery performed (1. augmentation; 2. Implantation). Following the prosthetics were designed and incorporated (time interval in total of 9 months). The case aims to demonstrate a possible solution to move from a severe peri-implantitis to a complete restoration of the intraforaminal area using a new implant loaded prosthesis fixed in an edentulous mandible, under ambulant conditions. In addition, we will show an in house statistic about 27 implanted Yxoss meshes, including also failures and complications.

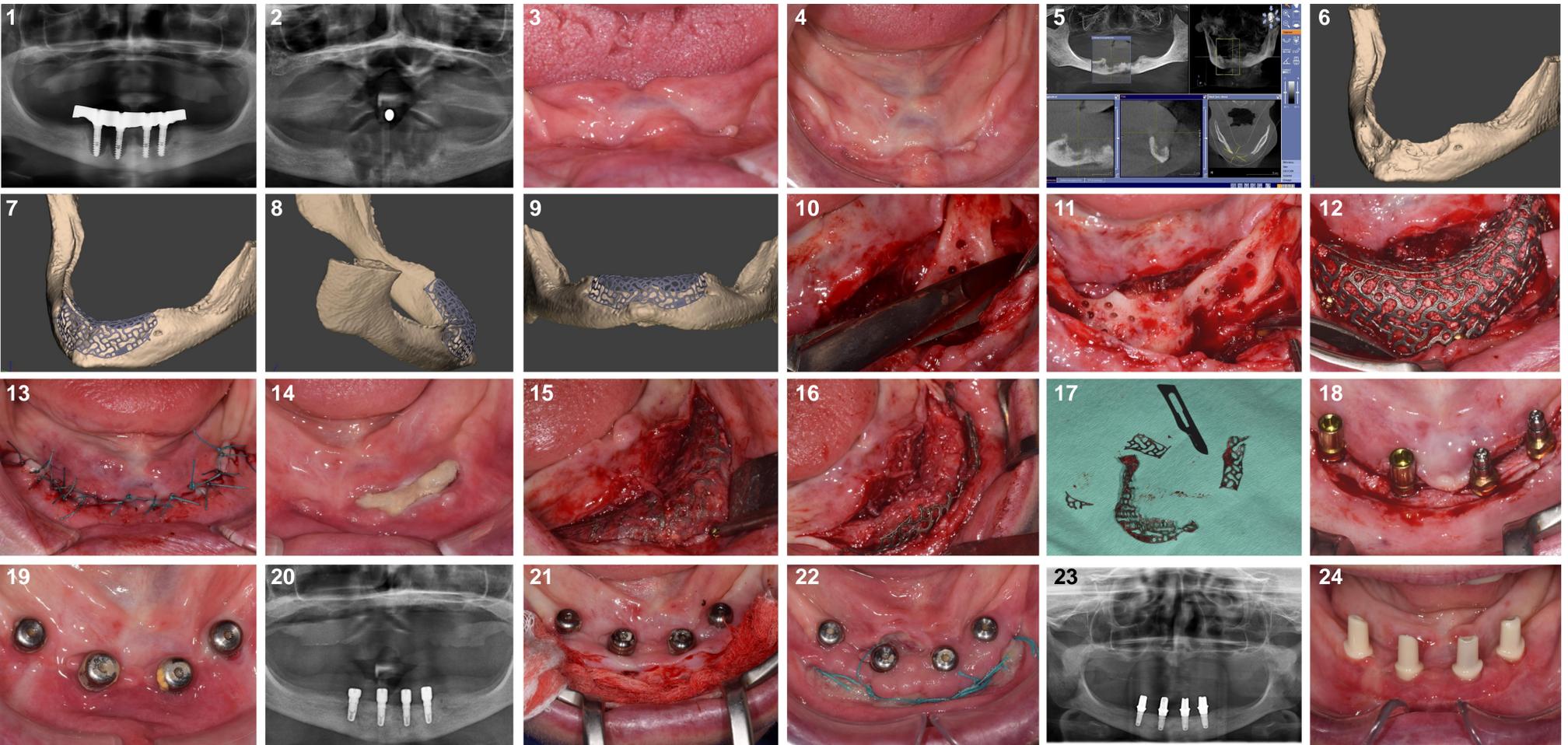


Fig. 1-4: Baseline

(1 +2) Radiographic situation before and after explantation; (3+4) Clinical situation after explantation

Fig. 5-9: Planning

(5) DVT planning data; (6-9) Virtual 3-D-model with and without Yxoss® mesh

Fig. 10-17: Augmentation

(10-13) Intraoperative situation; (14) Dehiscence without infection 24 days after augmentation; (15-17) Yxoss® mesh removal after 20 weeks

Fig. 18-20: Implantation

(18) Implantation of 4 Camlog Screw Line® implants 3 months after scaffold removal; (19+20) Radiographic control after implantation and clinical situation after open healing period of 3 months

Fig. 21-24: Further procedures

(21+22) Vestibuloplasty to achieve more mass of attached gingiva; (23+24) Radiographic and clinical situation with abutments

Tab. 1: In-house statistics of all Yxoss® -based augmentations

	n in total	Upper Jaw n (%)	Lower Jaw n (%)
Yxoss® meshes	27	11 (40)	16 (60)
Average volume in mm³	1453	1108,17	1481,95
Average wearing period in weeks	16	12	20
Yxoss® removal and implantation simultaneous	4	0 (0)	4 (25)
Average of implants per mesh	2,3	1,75	2,6
Dehiscence	12	4 (36)	8 (50)
Short-term appearing	5	3 (27)	2 (12,5)
Medium-term appearing	3	1 (9)	2 (12,5)
Long-term appearing	4	0 (0)	4 (25)
Dehiscence with infection	2	2 (18)	0 (0)
Successful augmentation	26	10 (91)	16 (100)

Conclusions

The Yxoss CBR® titanium scaffold is a 3D-printed scaffold that combines the advantages of titanium, 3D-imaging, planning -tools and -printing. Customized, it has an optimized fit and preserves volume for osteogenesis. Our in-house statistics show that despite a high rate of dehiscences 96,3% of cases could be augmented successfully. Further, 75% of the patients need to be implanted in a single session. Compared to upper jaw lower jaw has higher average volume (1482/ 1108mm³), longer wearing time (20/ 12 month) and more average implants per mesh (2,6/ 1,75).