

Impact of Anodized Surfaces on Soft Tissue Response and Osseointegration: 1000 Patient Study.

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RESULTS

Table 1. Baseline patient characteristics (n=1027 patients)

Patient characteristics		n (%)
Sex	Female	563 (54.8%)
	Male	462 (45.0%)
	Non-reported	2 (0.2%)
Age (mean ±SD; range; in years)		53.3 ±11.7 (18-71)
Smoking status	Current smoker	79 (7.4%)
	Nonsmoker	948 (92.6%)
Relevant medical history	Parafunctional tendencies	45 (4.4%)
	History of periodontitis	86 (8.4%)
	Diabetes	23 (2.2%)
	History of peri-implantitis	16 (1.6%)
	History of oral mucositis	18 (1.8%)
	Other significant conditions#	62 (6%)
Guided Bone Regeneration (GBR) at implant sites	No	1155 (74.5%)
	Yes	395 (25.4%)

#cancer (other than oral cancer), osteoporosis, use of bisphosphonates, autoimmune disorders, cardiovascular disorders, digestive disorders, etc.

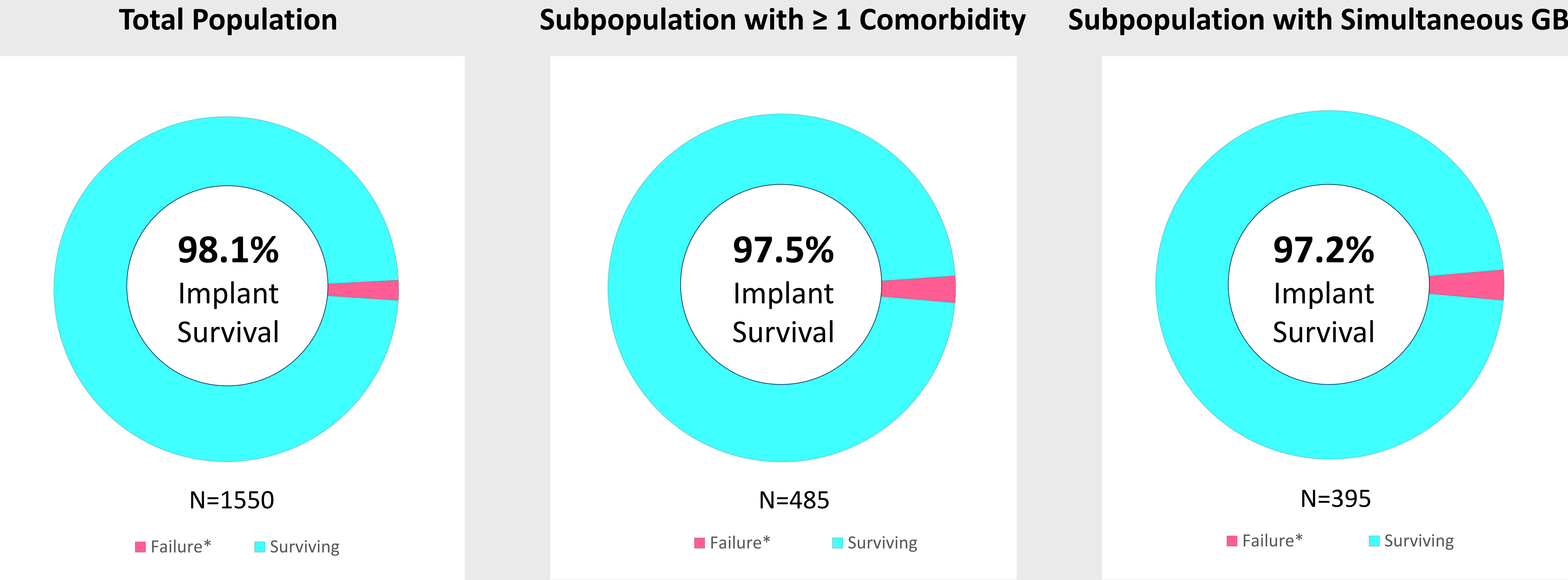


Figure 3. Implant survival. The graph illustrates implant failures recorded from 0 to 41.6 months of follow-up (*as of data extraction on February 5, 2025) in the total population, subpopulation of implants where patients had one or more comorbidities, or required simultanous guided bone regeneration (GBR). Comorbidities include medical conditions plus smoking. Note only a slight increase in failure rates in the given subpopulations compared to the general population.

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RESULTS

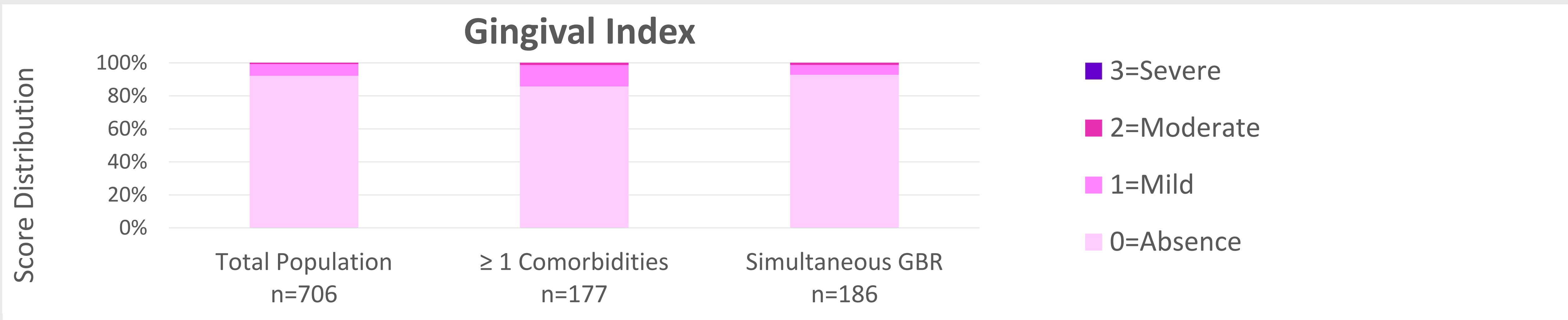


Figure 4. Gingival Index. Inflammation score evaluated as soft tissue health indicator at the restored implant sites at the 1-year post-FPD for the total population, the subpopulation of patients with comorbidities, or those who have undergone simultaneous GBR. Note the absence of severe inflammation at any implant site and the comparable soft tissue health score distribution between the general and the more challenging subpopulations.

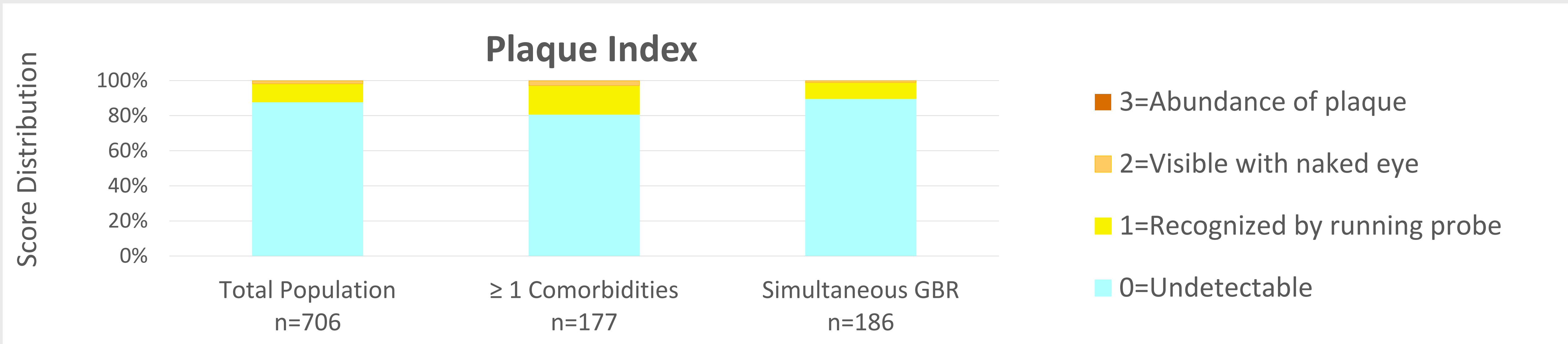


Figure 5. Plaque Index. Plaque accumulation assessed at the 1-year post-FPD for the total population, the subpopulation of patients with comorbidities, or those who have undergone simultaneous GBR. Note no abundance of plaque reported for any implant site and the comparable score distribution between the general and the more challenging subpopulations.

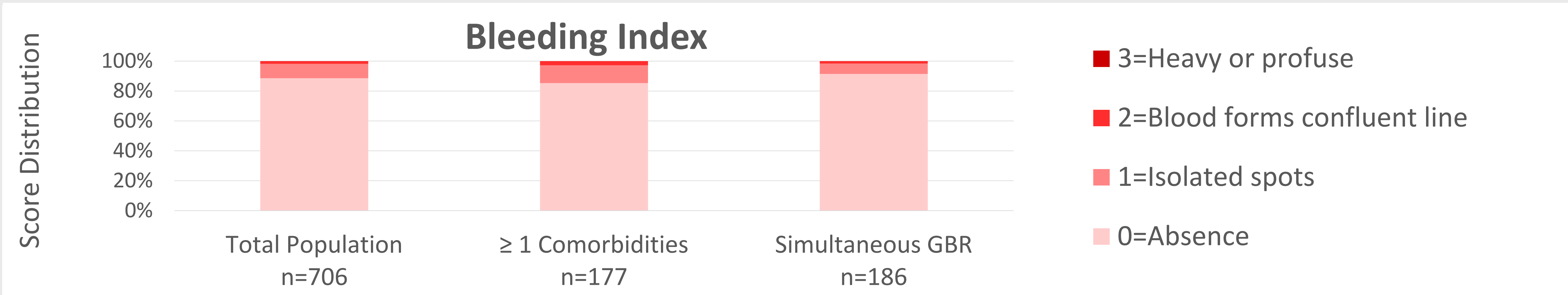


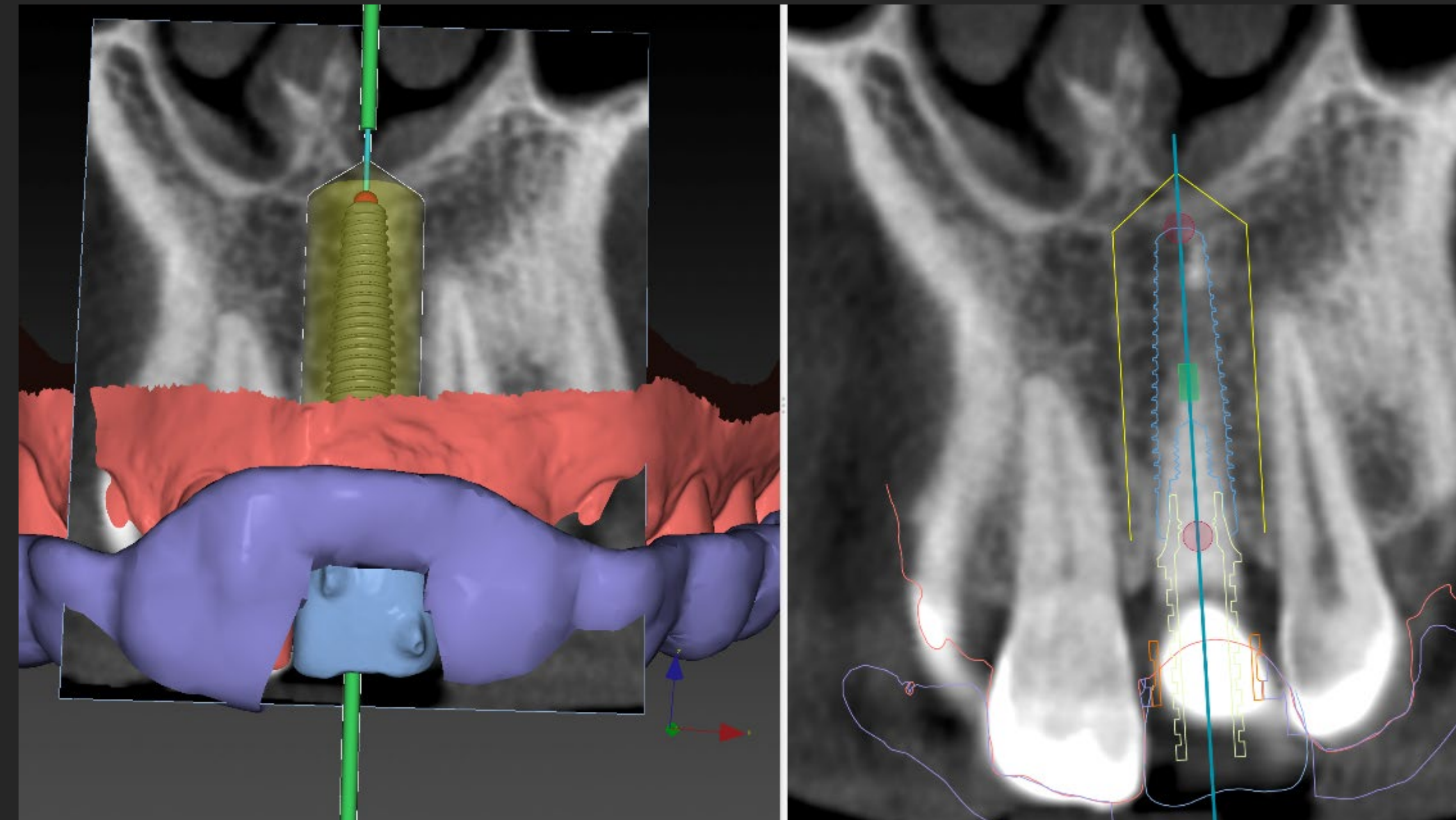
Figure 6. Bleeding Index. Bleeding scores assessed as a soft tissue health indicators at restored implant sites at the 1-year post-FPD follow-up for the total population, the subpopulation of patients with comorbidities, or those who have undergone simultaneous GBR. Note the absence of heavy or profuse bleeding for any implant site and the comparable soft tissue health status between the general and the more challenging subpopulations.

CLINICAL CASE (Part I)

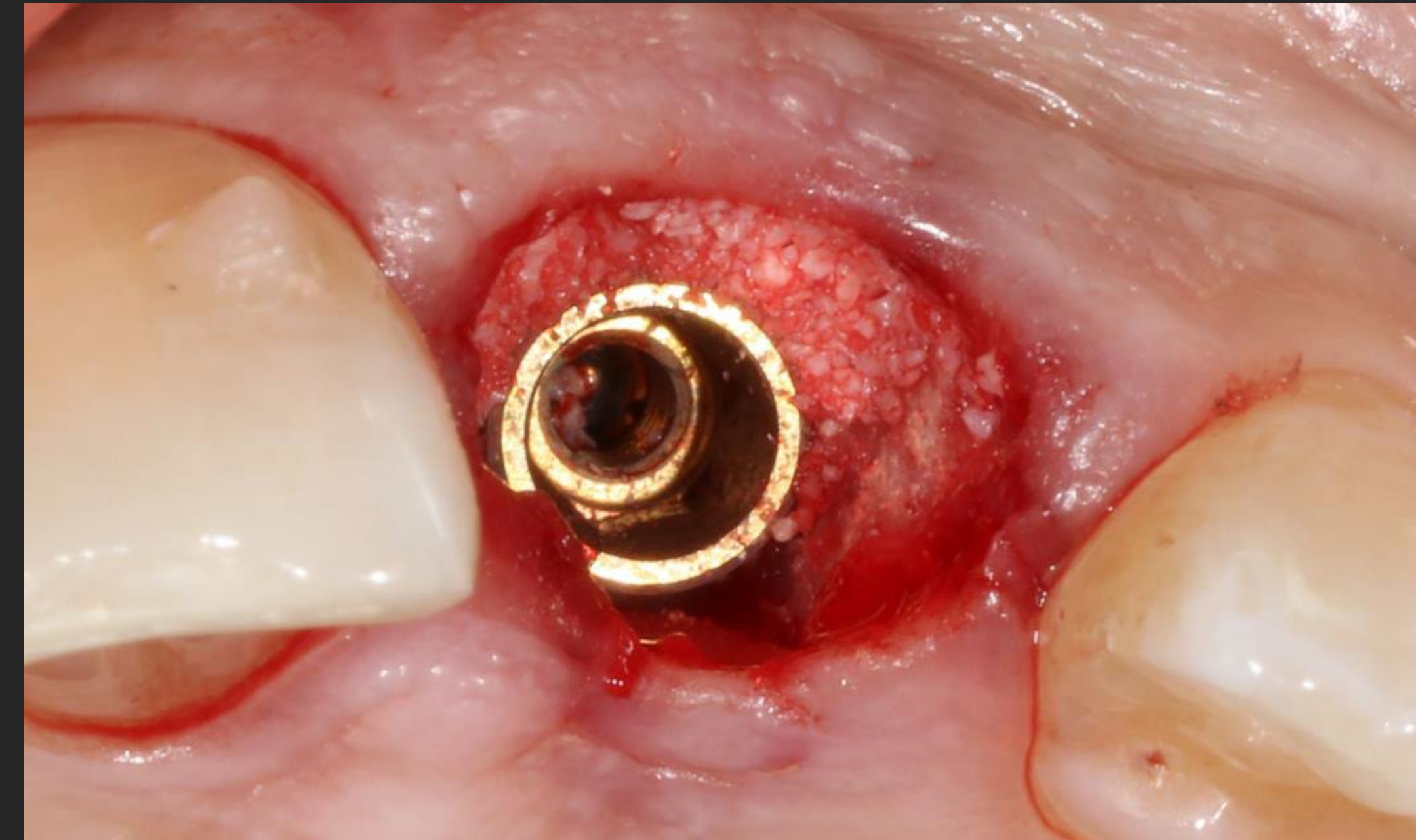
Pre-treatment



DTX surgical planning



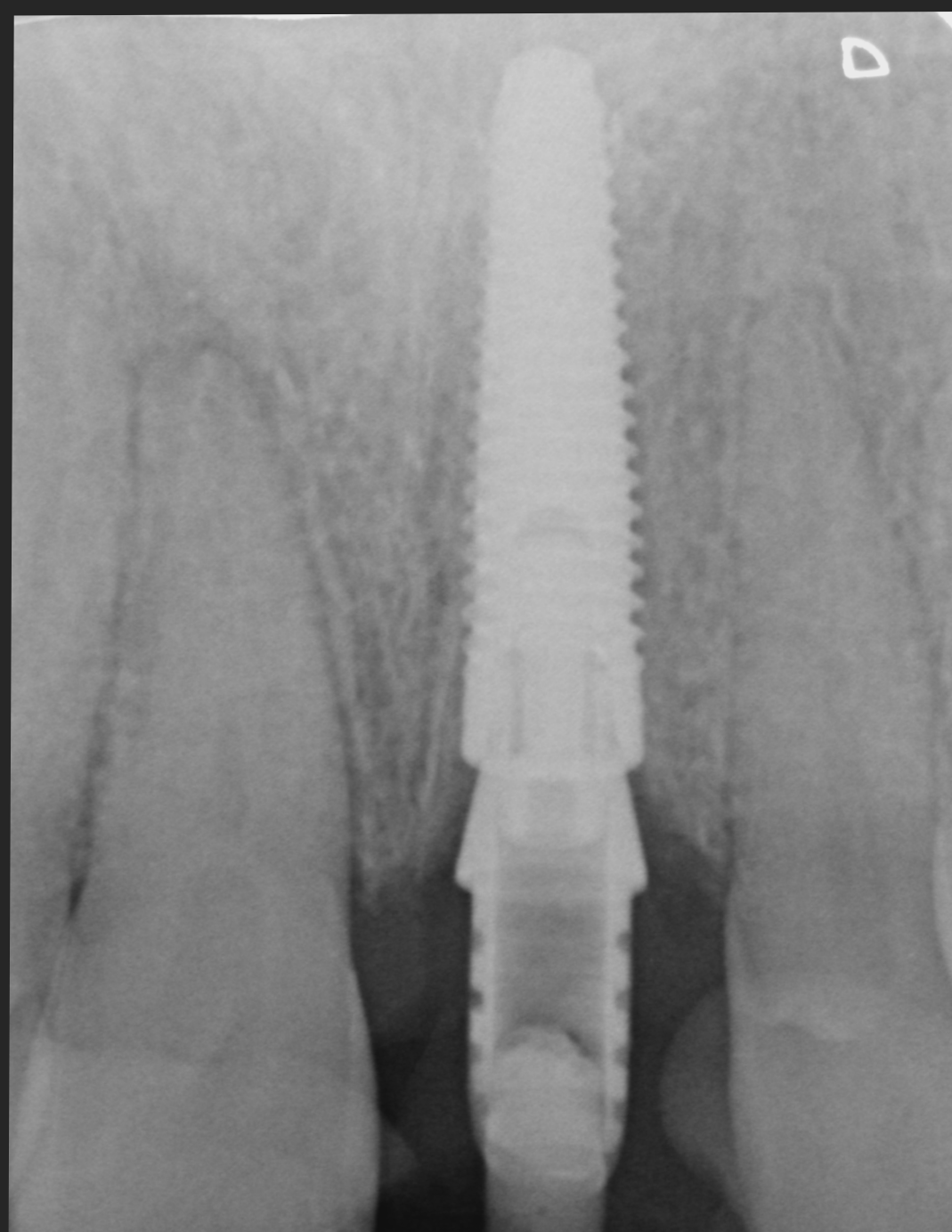
Immediate placement with grafting



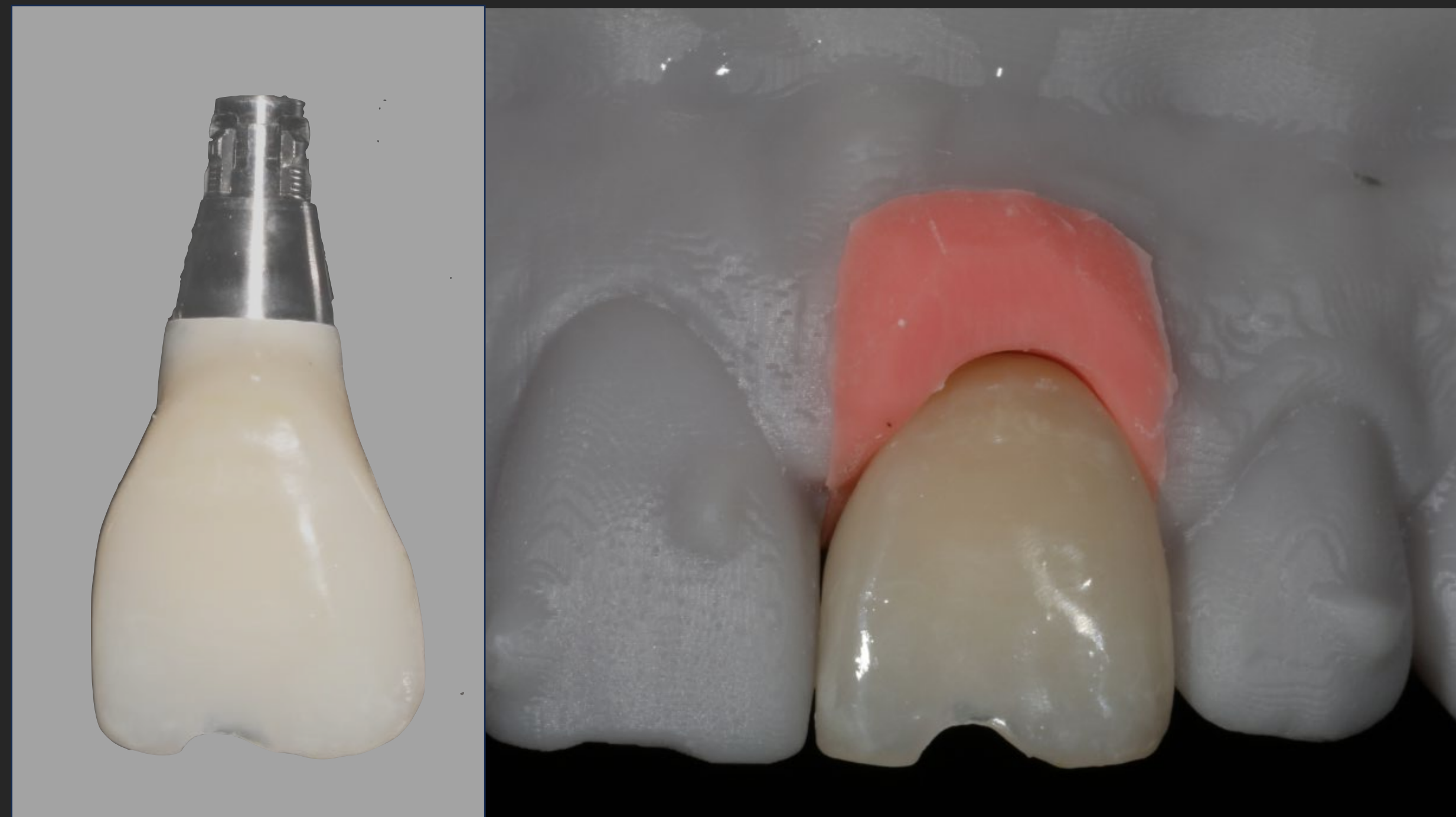
Collagen membrane



Radiograph at IP



Provisional crown



Immediate provisionalization



4-month post-IP



Figure 7. A 33-year-old non-smoker male presented with a fractured, endodontically-treated central incisor (FDI 21, Universal position 9). Immediately after extraction, a subcrestal implant placement (IP; NobelReplace CC TiUltra: 4.3 x 16 mm) was carried out with simultaneous GBR (autogenous bone chips with deproteinized bovine bone mineral, creos xenogain, and a collagen membrane). The site was provisionalized immediately and examined 4-month post-IP. Case by G. Carmichael, Branemark Center Prosthodontics, Australia.

CLINICAL CASE (continued)



Figure 8. Continuation of the case. FPD occurred 7 months after implantation (IP). Clinical images illustrate good vascularization and healthy soft tissue. Radiographs at FPD, 5 months, and 1.8 years post-FPD demonstrate excellent bone stability.

CONCLUSION

Within the limitation of this interim analysis, the gradually anodized surface showed high implant survival, and minimal inflammation, bleeding, and plaque accumulation. These results suggest that the hybrid surface promotes successful early osseointegration and healthy peri-implant tissue response supporting its applicability in everyday practice. Comparable results between different subpopulations including patients with comorbidities and bone defects imply predictability of clinical outcomes even under challenging conditions.

REFERENCES

1. Rational design and in vitro characterization of novel dental implant and abutment surfaces for balancing clinical and biological needs. V Milleret, P S Lienemann, A Gasser, S Bauer, M Ehrbar, A Wennerberg. Clin Implant Dent Relat Res. 2019 Mar;21 Suppl 1:15-24
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