

**MAKE A
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Transforming the Lives of Our Patients and Ourselves



**2026
Annual Meeting**

Washington, DC
March 5-7



The Custom Contour Concept (CCC): individualized milling of implant-level abutments.

Henn, Paul¹, Henn, Uwe¹, Peppmeier, Sandra M², Neugebauer, Jörg^{3,4,5}

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Background

The use of individualized titanium abutments manufactured on modern 5-axis milling systems has become a critical component of contemporary implant dentistry[1]. Their precision allows the creation of a controlled, low-angle emergence profile[2] that closely mimics the natural tooth contour, an outcome that cannot be achieved with stock components. This geometrically harmonious transition zone supports long-term peri-implant health by enabling predictable hygiene access, reducing plaque retention, and improving the mechanical environment at the implant–abutment interface[3,4].



Fig 1 Implant Abutment connection on implant level using pface Abutments

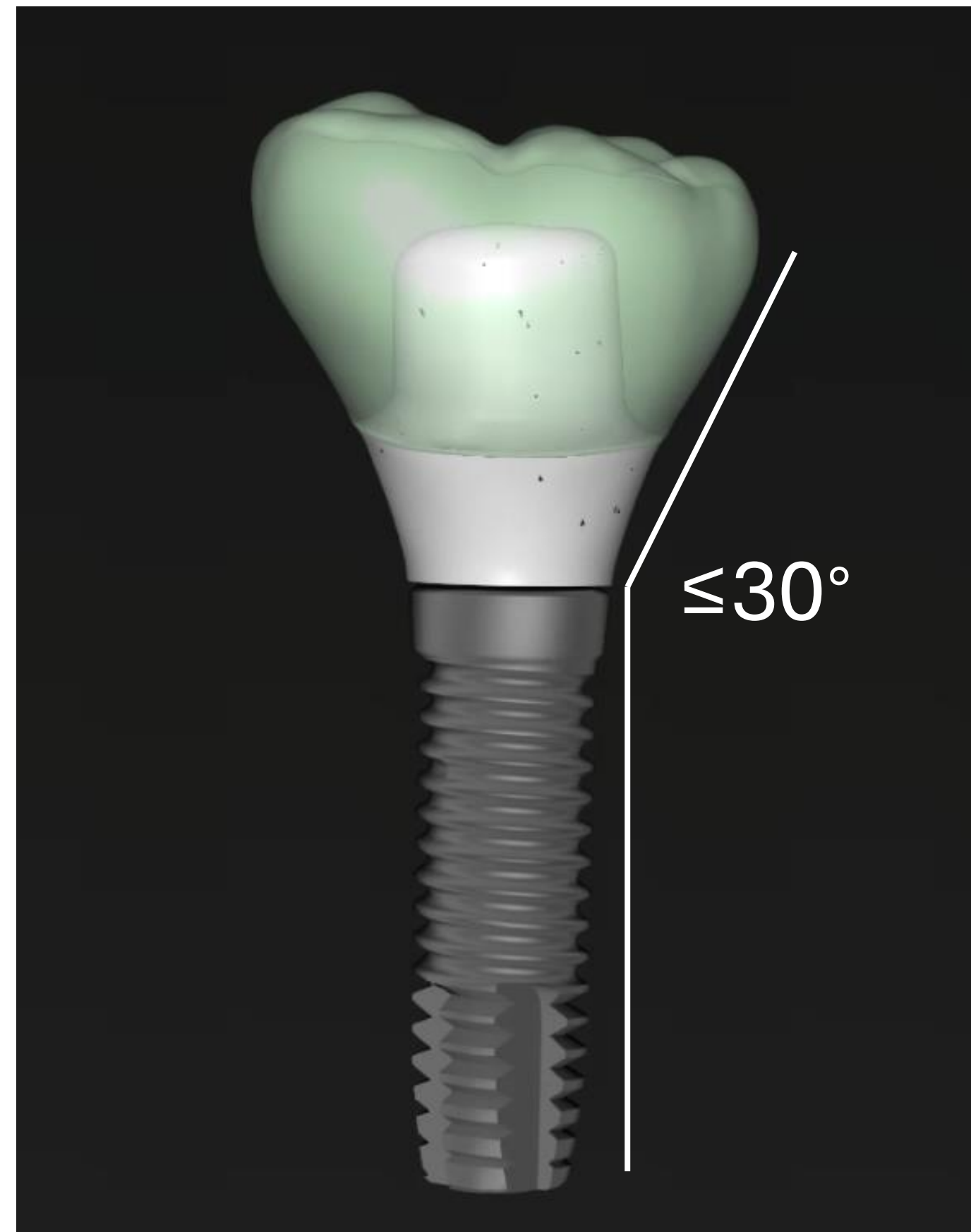


Fig 2 Shallow emergence angle to avoid plaque Retention and progressive bone loss

Objective

This case series provides clinicians with a concise, practical framework for fabricating individualized titanium abutments using a fully digital, 5-axis milling workflow. Adhesively luted Ti-base connections introduce an additional adhesive interface that can debond over time, leading to higher technical complications like loosening, micro-movement, and compromised prosthetic stability[5].

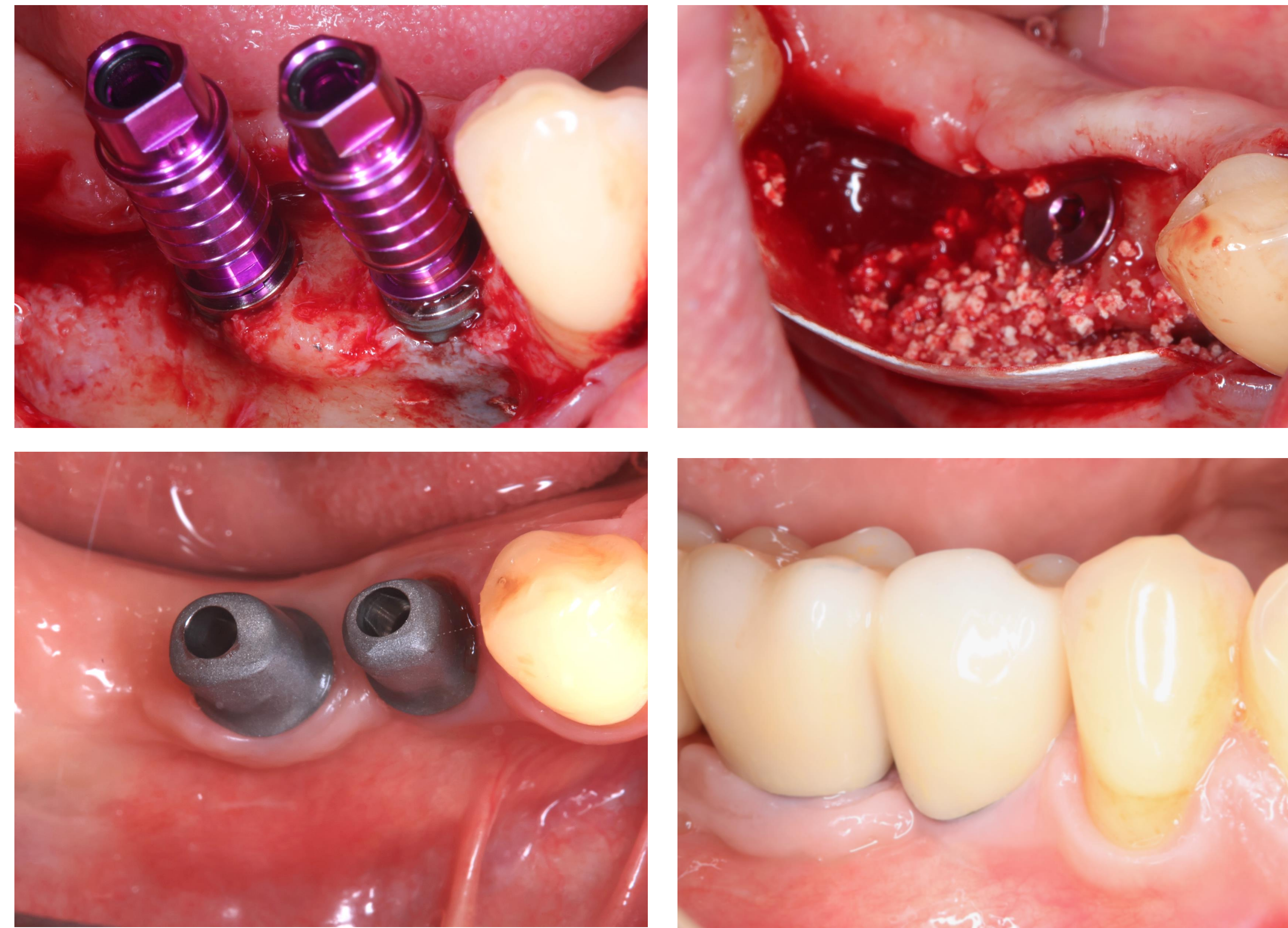


Fig 3 GBR with 3 months healing and consecutive prosthodontics via CCC.

Individualized pface-milled titanium abutments connect directly at implant level, eliminating the adhesively luted Ti-base junction and a key failure point. To prevent cement induced inflammation[6, 7], the abutment shoulder is placed 0.5mm below the gingival margin.



Fig 4 Well-shaped, inflammation free emergence profile.

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Digital impression with Scanbodies

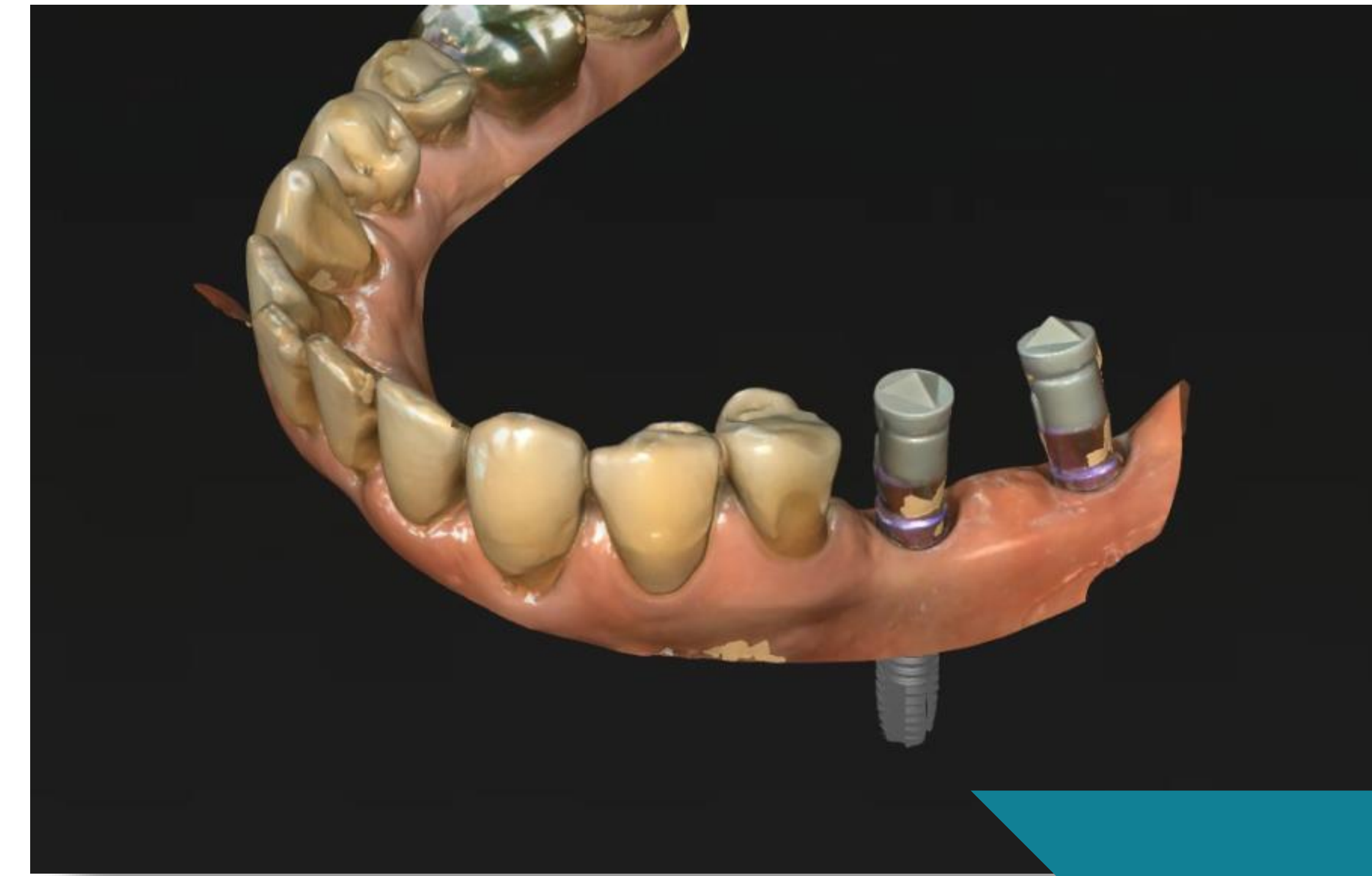
Construction of layer 1: Abutments

Construction of layer 2: monolithic zirconia crowns

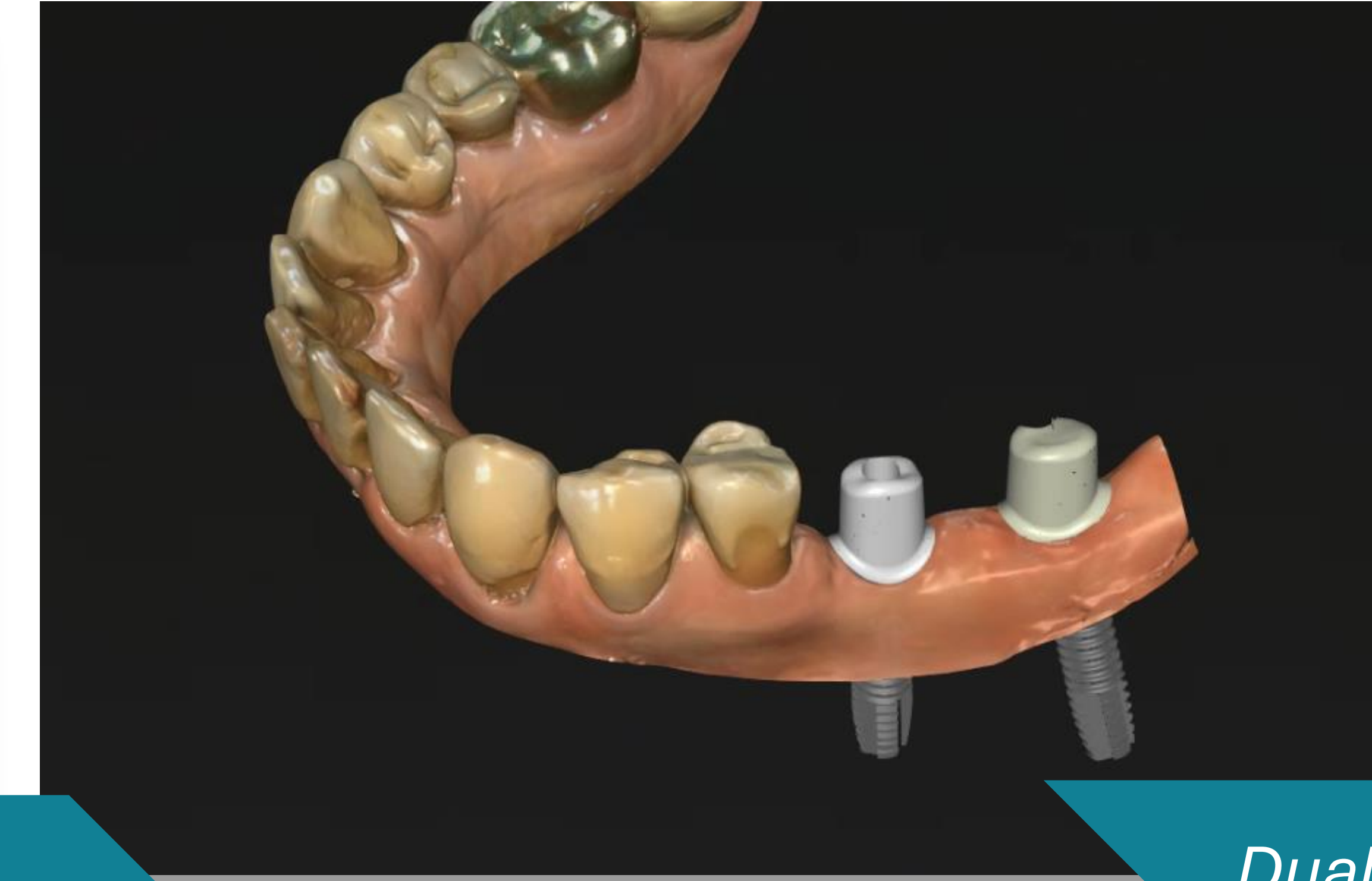
Milling of Preface Abutments

Milling of monolithic zirconia crowns

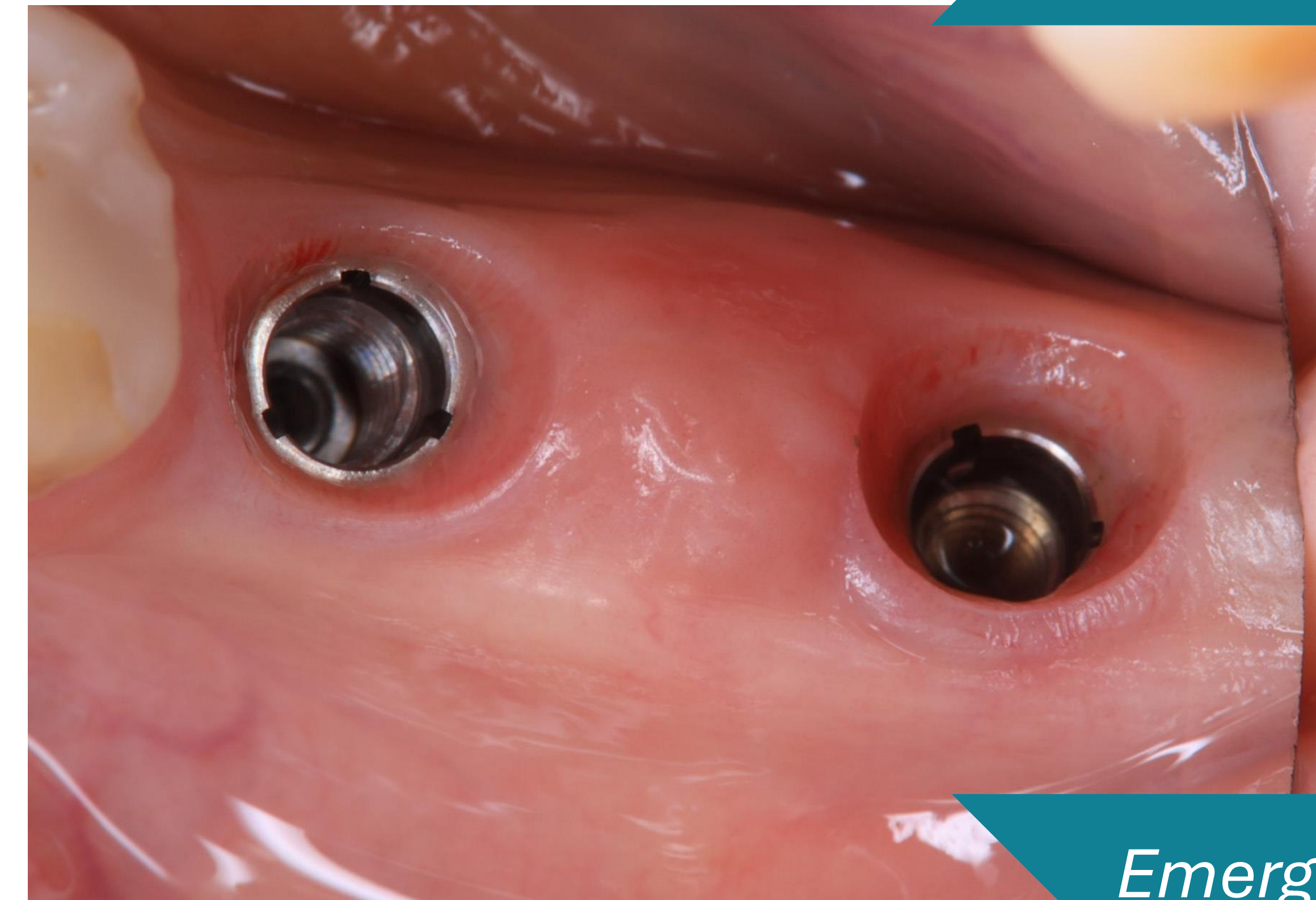
Intraoral cementation with equigingival margins for ideal cement control.



Digital Scan



Dual-layer
construction



Emergence
profile



Low angle
contour



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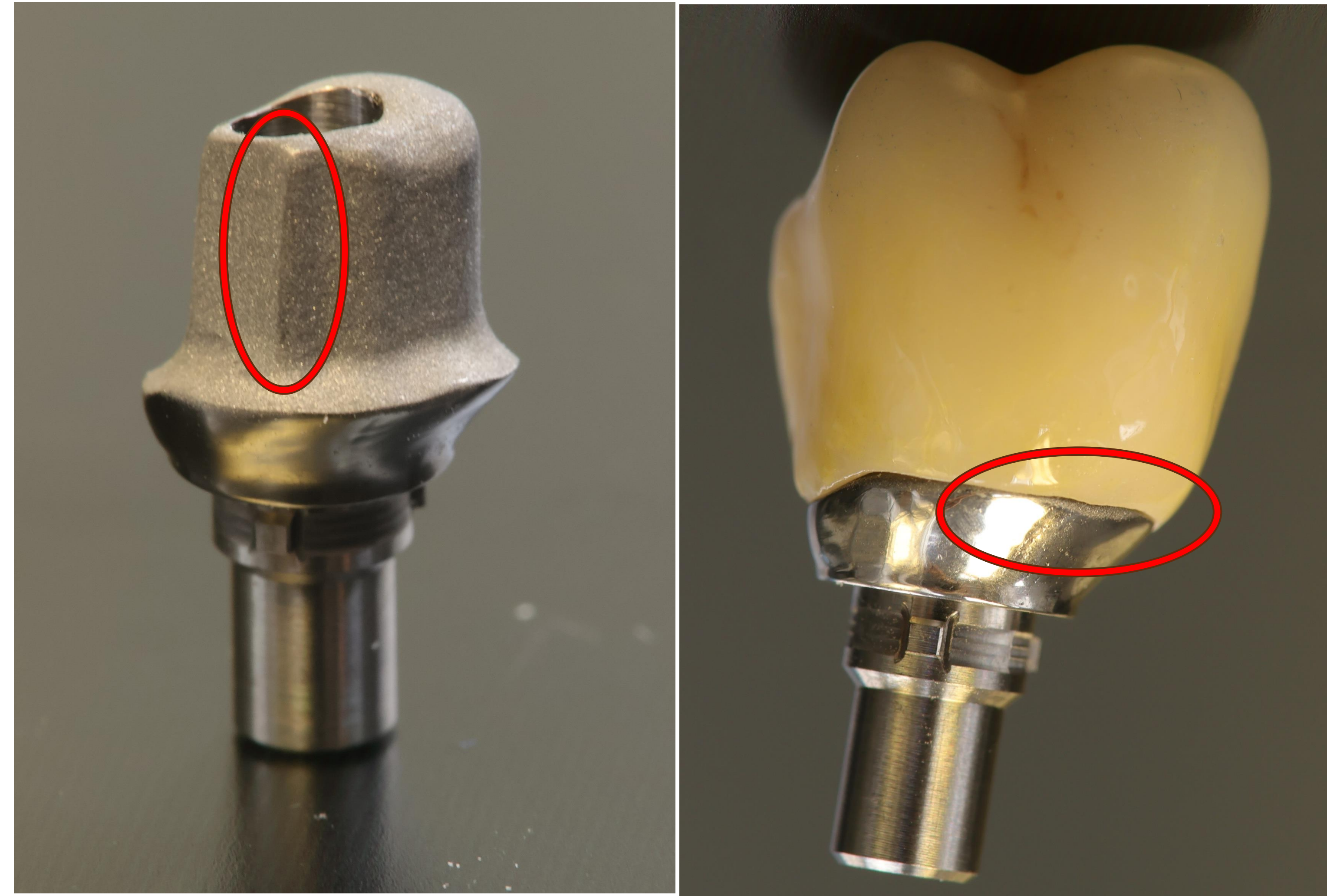


Fig 9 Common Mistakes

Conclusion

Digitally fabricated individual abutments allow the creation of highly polished transmucosal surfaces that minimize plaque retention and support reliable soft-tissue adhesion. In functionally demanding but esthetically less critical regions, implant-level prefabricated abutments offer clear advantages because they eliminate adhesive interfaces such as those required in Ti-base restorations.

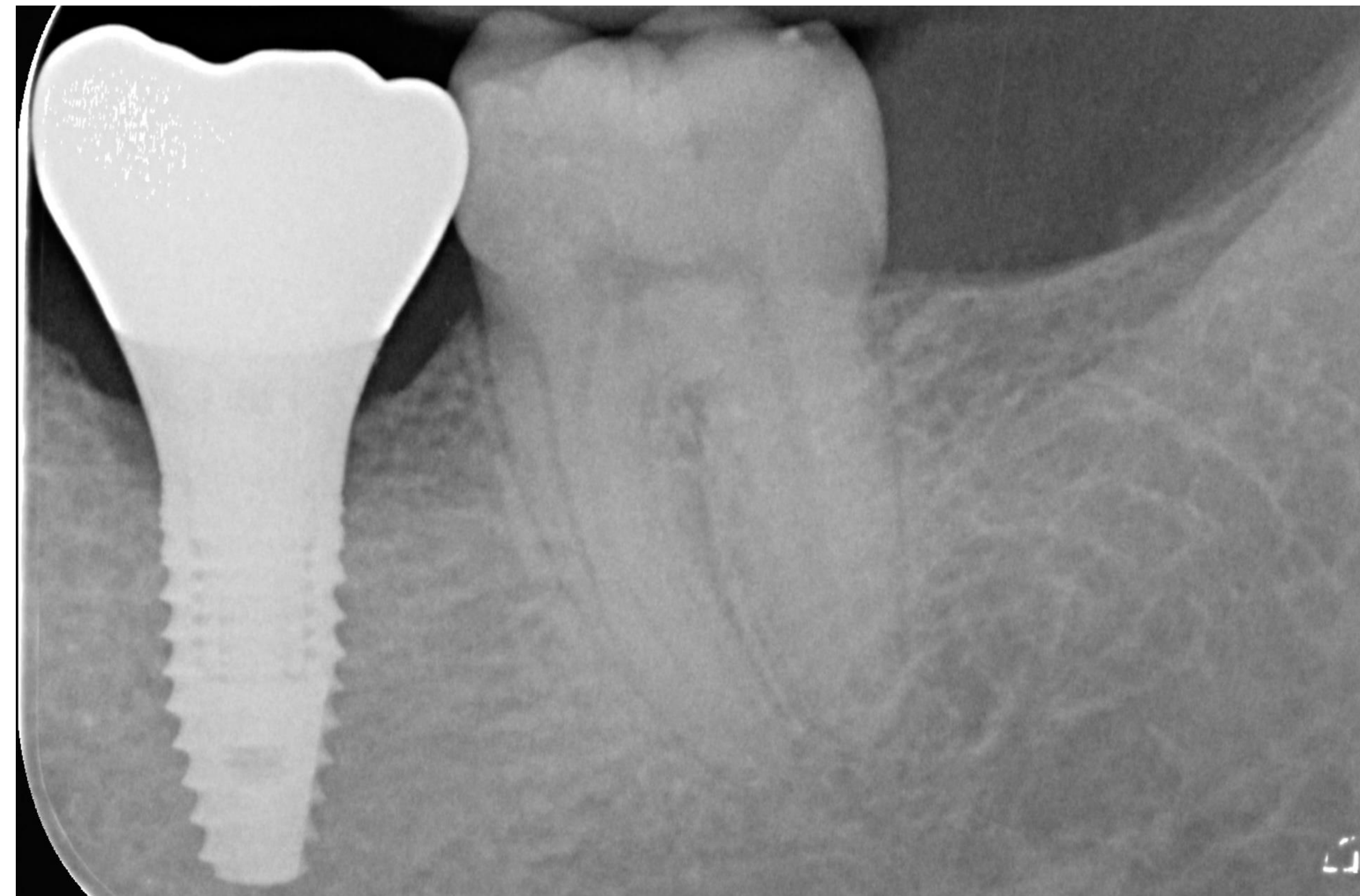


Fig 10 Stable bone levels after 3.5 years of loading

The manufacturing precision of modern 5-axis milling units enables true model-free workflows in which dual-layer restorations can be designed through virtual seating with high accuracy. Inter-implant angulation discrepancies can also be compensated through customized abutment geometry, ensuring precise, tension-free insertion—particularly for splinted crowns and 3-unit FDPs.

References

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