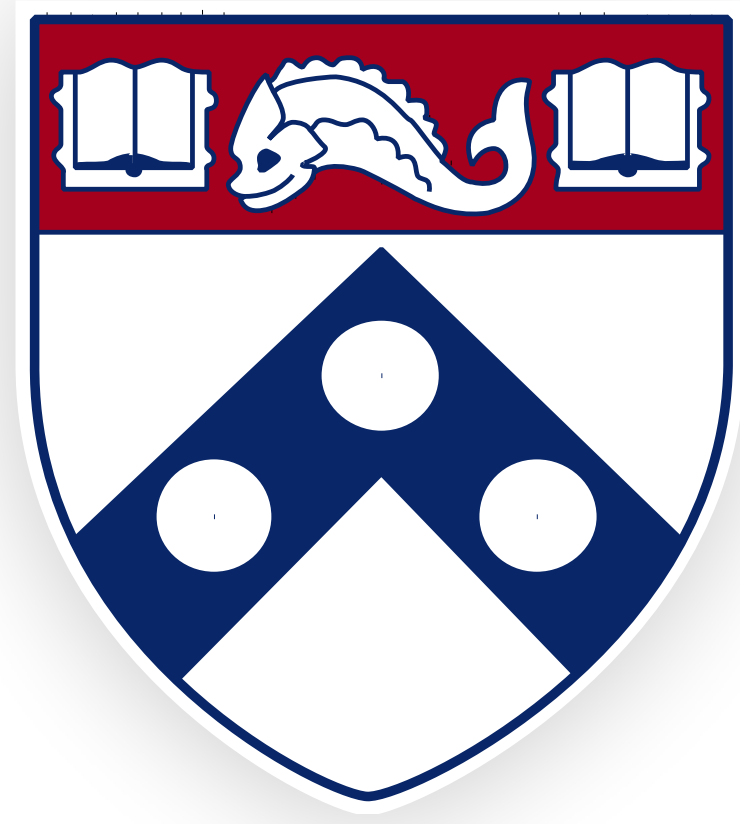
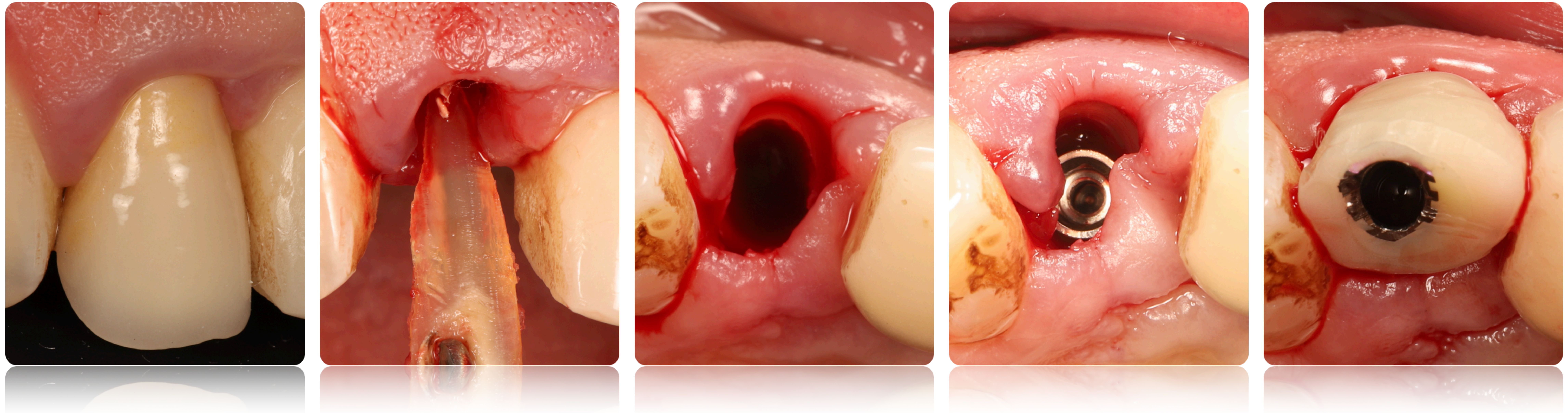


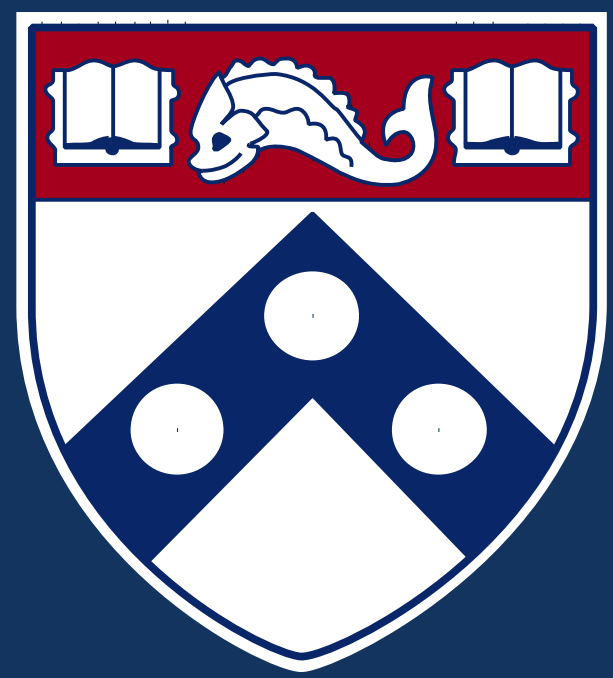


Proximal Socket-Shield As A Biological Scaffold For An Esthetic Zone Implant: A Case Report



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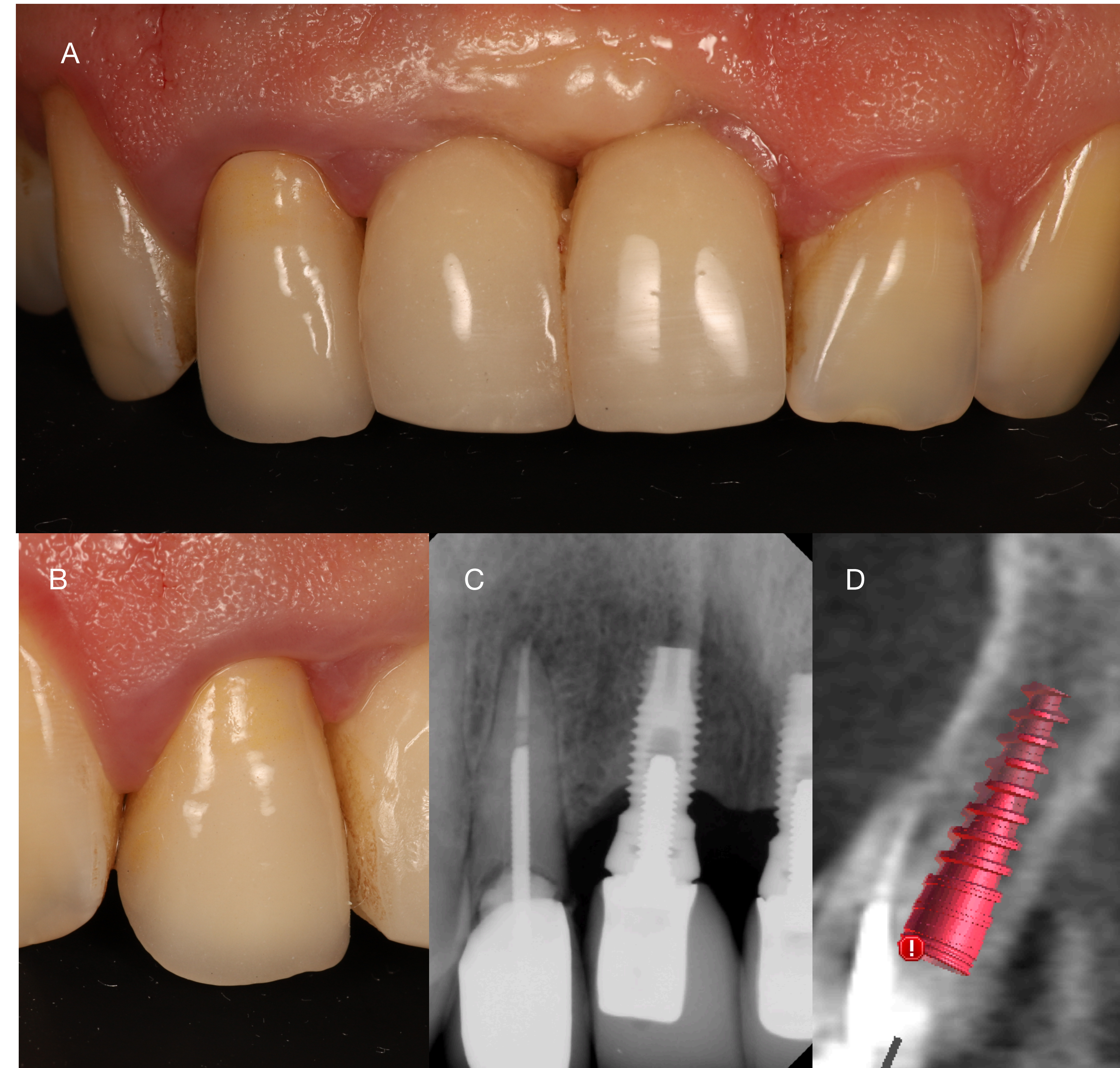
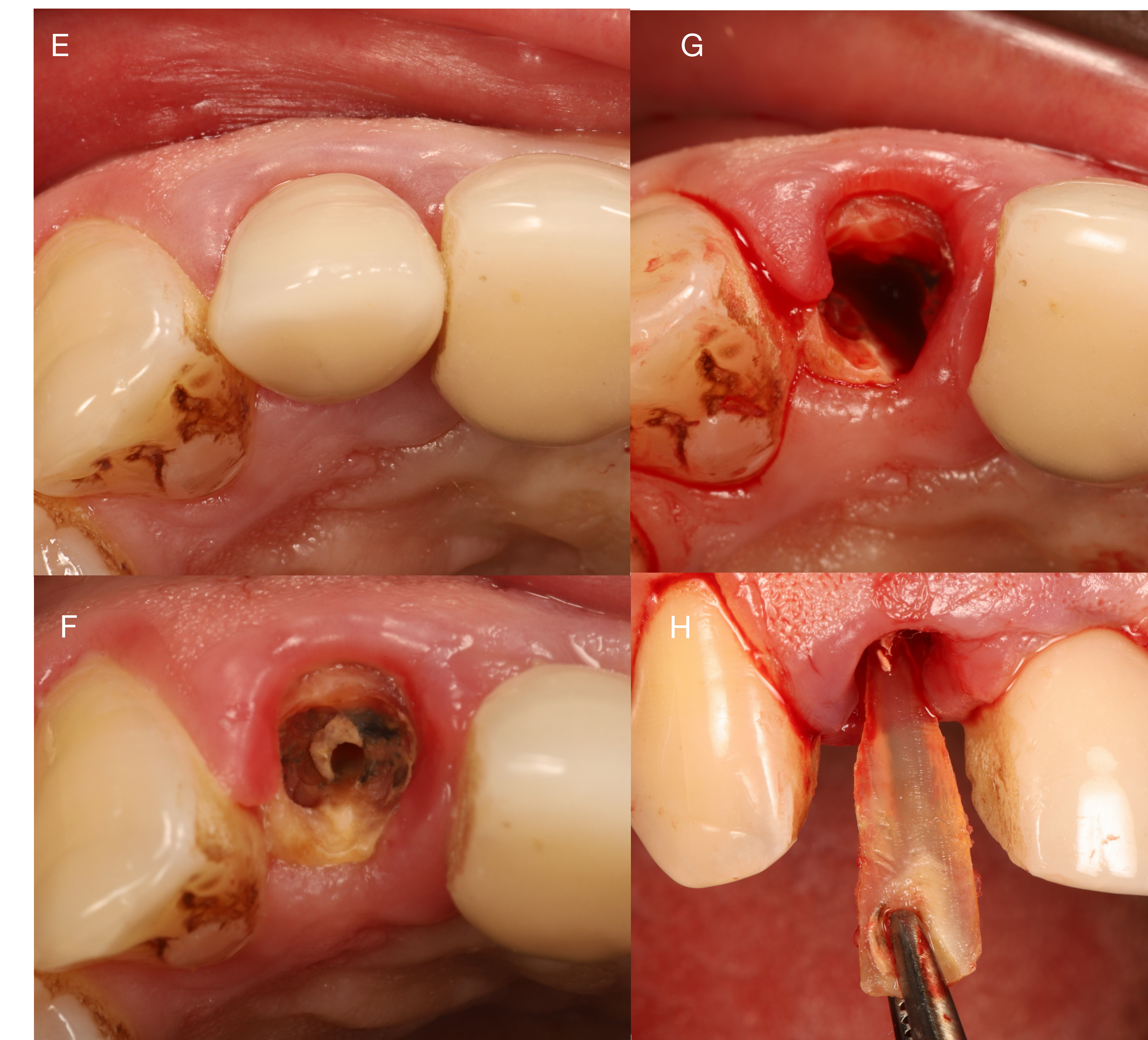


Background

Alveolar bone following tooth extractions expectantly results in bony remodeling and buccal bone resorption which become restorative and esthetic challenges for dental implants. In an effort to preserve the bundle bone, the proof-of-concept technique in retaining only the buccal portion of tooth roots with subsequent immediate implant placement was presented in 2010 using beagle dogs¹. Current clinical studies and concepts tied to tooth preservation such as root submergence or socket-shields are recognized as partial extraction therapies² and special considerations are needed for soft tissue papilla preservation. A proximal socket-shield is a treatment modality with the goal of maintaining the dentogingival fibers attached to the supracrestal cementum of a root shield, thereby addressing the challenging aspect of maintaining interdental papilla of anterior implants³.

Methods

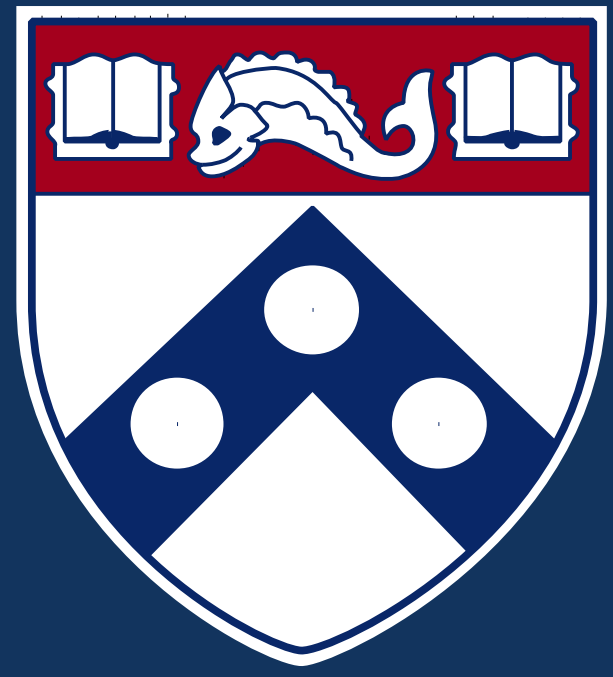
A 53-year-old patient presented with a non-restorable, endodontically treated, maxillary right lateral incisor. The tooth exhibited no mobility and the adjacent restoration was an implant supported maxillary central incisor with mesial bone levels more apical than the distal aspect of the lateral incisor. Proximal bone loss and gingival recession to the implant supported central incisor would be expected following the extraction of the lateral incisor. A proximal socket-shield preparation followed by placement of 0.5cc bone allograft, a 3.5mm x 15mm immediate titanium implant, and seating of a non-occluding provisional crown was completed to preserve the buccal bone and interimplant papilla. Shield preparation included leaving 2mm of the mesial half of the tooth supracrestal with a thickness of 1.5mm and care was taken to ensure no mobility of the socket-shield during the procedure.



Figures A-H: (A-B) Pre-operative views (C) Periapical radiograph (D) Planned implant position (E-F) Clinical presentation after crown removal (G-H) Extraction of palatal half

References

1. Hürzeler MB, Zuhr O, Schupbach P, Rebele SF, Emmanouilidis N, Fickl S. The socket-shield technique: a proof-of-principle report. J Clin Periodontol. 2010 Sep;37(9):855-62. doi: 10.1111/j.1600-051X.2010.01595.x. PMID: 20712701.
2. Gluckman H, Salama M, Du Toit J. Partial Extraction Therapies (PET) Part 1: Maintaining Alveolar Ridge Contour at Pontic and Immediate Implant Sites. Int J Periodontics Restorative Dent. 2016 Sep-Oct;36(5):681-7. doi: 10.11607/prd.2783. PMID: 27560672.
3. Kan JY, Rungcharassaeng K. Proximal socket shield for interimplant papilla preservation in the esthetic zone. Int J Periodontics Restorative Dent. 2013 Jan-Feb;33(1):e24-31. doi: 10.11607/prd.1346. PMID: 23342355.



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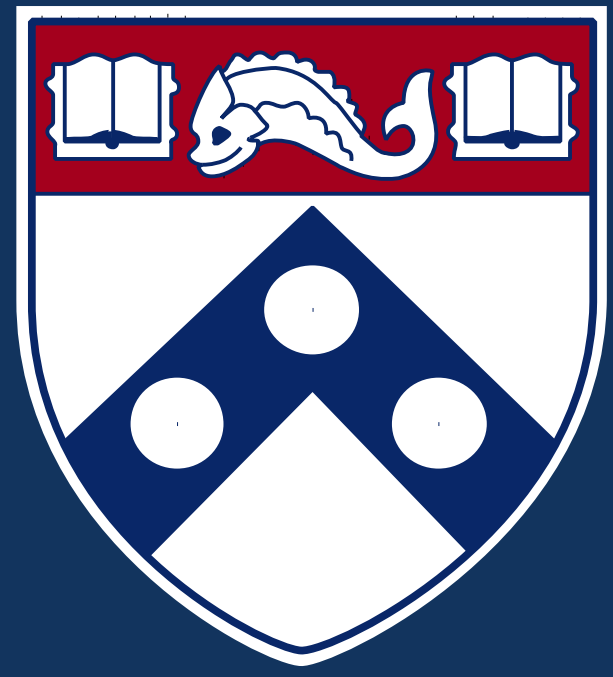
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Figures I-Q: (I) Palatal half of tooth #7 (J) Intra-operative view prior to removal of palatal half of #7 (K-N) Mesial and buccal root shield preparation (O) Final preparation (P-Q) Implant placement, use of a cover screw and grafting with bone allograft particulate.

References

1. Hürzeler MB, Zuhr O, Schupbach P, Rebele SF, Emmanouilidis N, Fickl S. The socket-shield technique: a proof-of-principle report. J Clin Periodontol. 2010 Sep;37(9):855-62. doi: 10.1111/j.1600-051X.2010.01595.x. PMID: 20712701.
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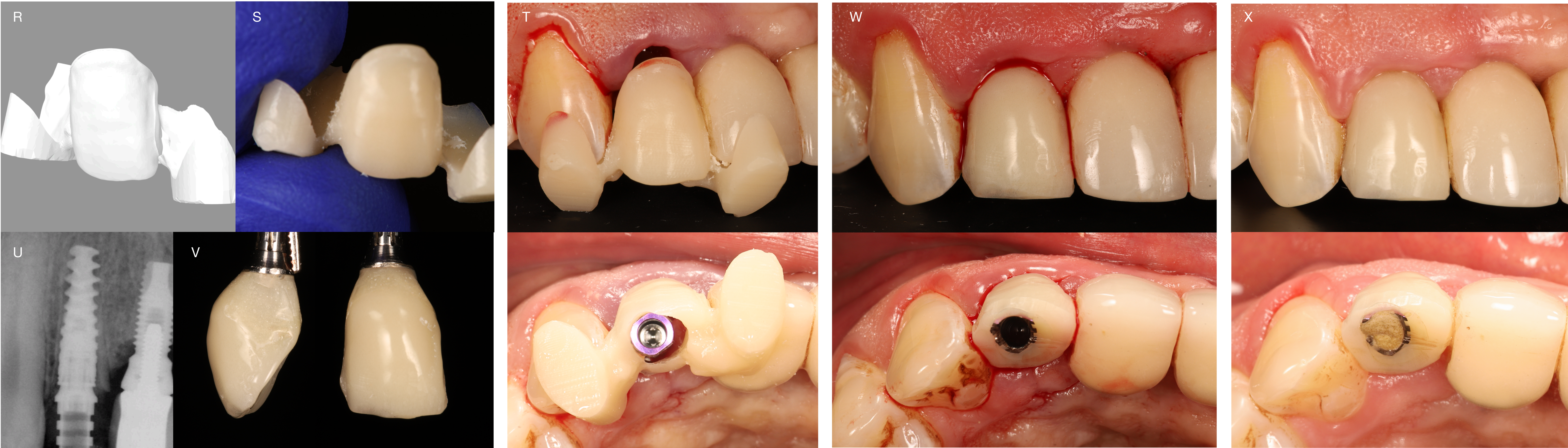
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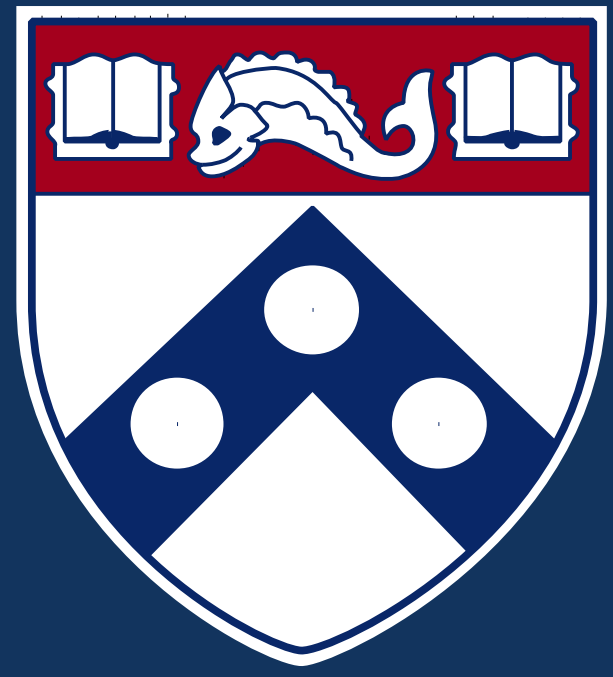


Figures R-X: (R) Planned PMMA shell (S) Milled PMMA shell for immediate provisionalization (T) Buccal and occlusal views of the milled PMMA shell seated (U) Periapical radiograph of immediate implant, mesial root shield noted (V) Contoured and polished #7 provisional (W) Buccal and occlusal views of the immediate provisional for #7 fully seated (X) Buccal and occlusal views of the healed site and provisional from the 4-month post-operative visit with stable papilla and healthy, coral pink gingiva

References

1. Hürzeler MB, Zuhr O, Schupbach P, Rebele SF, Emmanouilidis N, Fickl S. The socket-shield technique: a proof-of-principle report. J Clin Periodontol. 2010 Sep;37(9):855-62. doi: 10.1111/j.1600-051X.2010.01595.x. PMID: 20712701.
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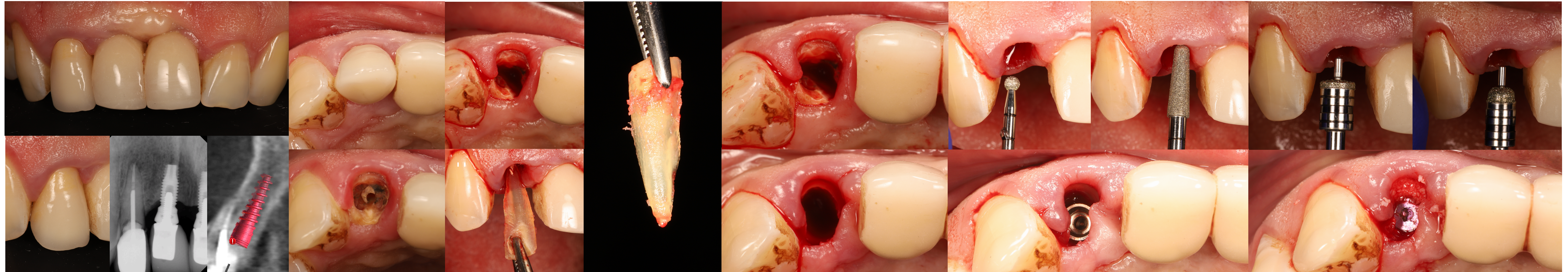
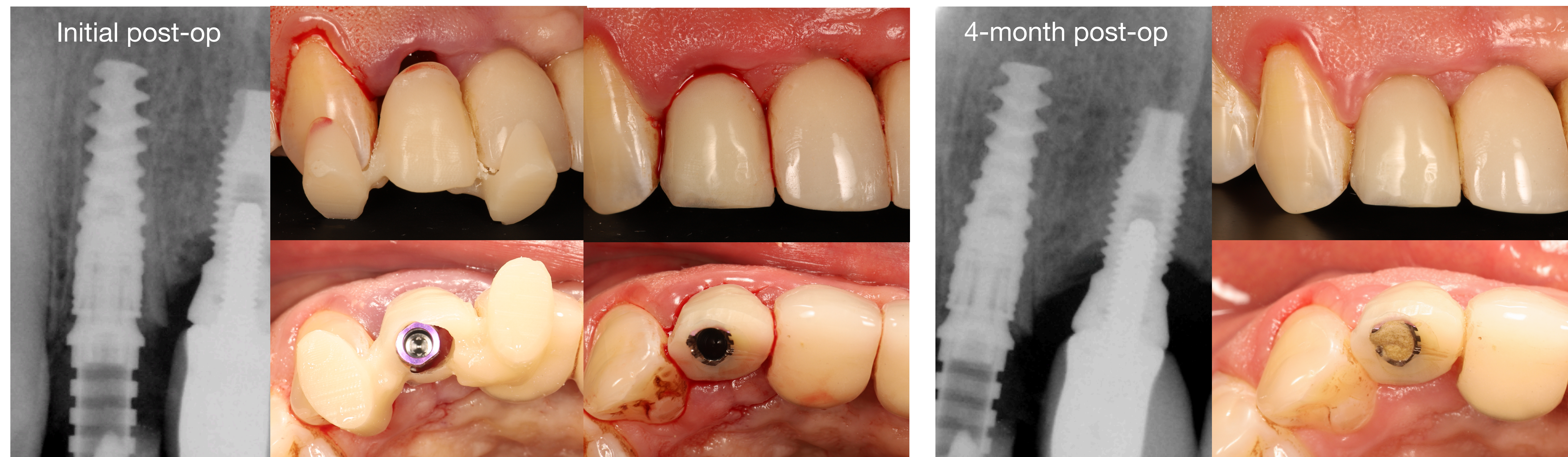




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Results

4 month follow-up shows preservation of the buccal soft tissue dimension and interimplant papilla between the implant of the maxillary lateral incisor and adjacent implant supported maxillary central incisor. No signs of inflammation or infection were noted. Esthetics were optimized and the treatment time was significantly reduced in comparison to traditional approaches of extraction with ridge preservation and delayed implant placement.

Conclusion

The technique-sensitive proximal socket-shield is a possible treatment modality for consideration for preservation of alveolar buccal bone and interimplant papilla in the esthetic zone.

References

1. Hürzeler MB, Zuhr O, Schupbach P, Rebele SF, Emmanouilidis N, Fickl S. The socket-shield technique: a proof-of-principle report. J Clin Periodontol. 2010 Sep;37(9):855-62. doi: 10.1111/j.1600-051X.2010.01595.x. PMID: 20712701.
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