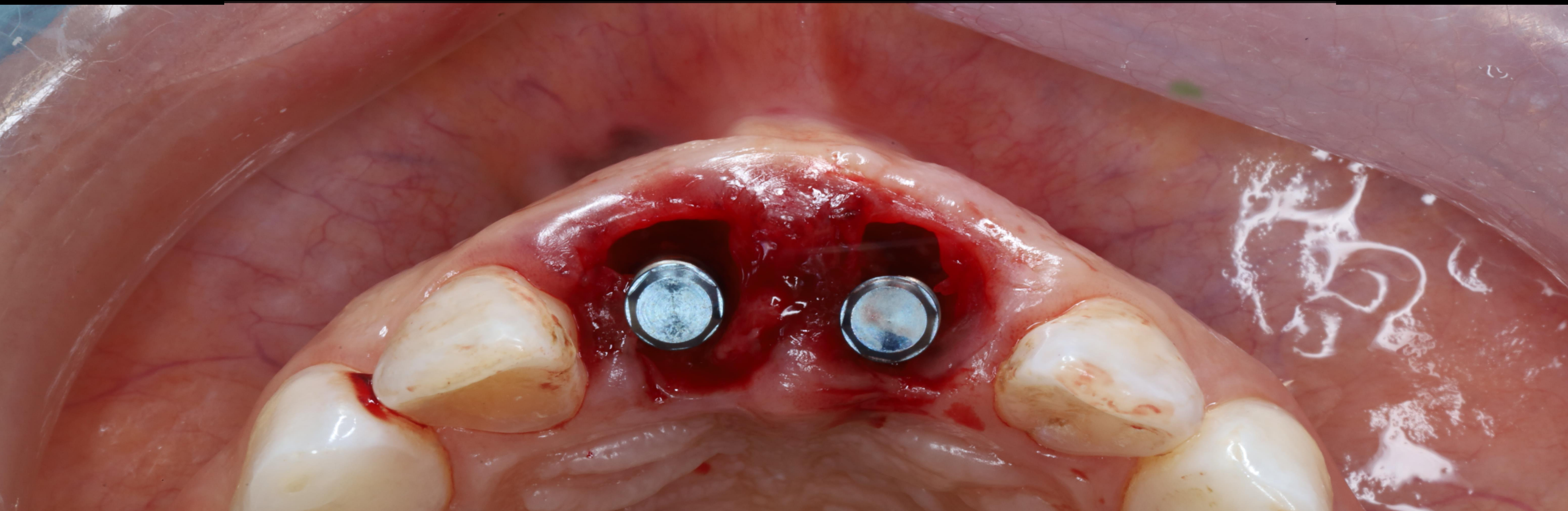


A Case Report of Immediate Implant Placement in Two Class IV Root Configurations in the Maxillary Anterior Region

Presenter: **Jeremy Bobera DDS, PGY3, University of Iowa**



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Introduction:

Introduction: Immediate implant placement in the maxillary anterior region remains a topic of debate, particularly in cases where contraindications are present. Root configuration is a critical determinant for successful immediate placement, with classifications ranging from Class I to Class IV. Class IV root configurations, characterized by pronounced apical divergence, are generally considered unfavorable due to challenges in achieving primary stability. This case report discusses the successful placement of two immediate implants in Class IV root configurations of maxillary central incisors.

Method: A 28 yr old female patient presented with non-restorable maxillary left and right central incisors. Cone-beam computed tomography (CBCT) revealed rarefying osteitis in the apical areas and Class IV root configurations for both teeth. Minimally invasive extraction techniques were employed to preserve the surrounding alveolar bone. Immediate implant placement was performed freehand, followed by grafting the extraction sockets with bone allograft. Custom healing abutments were fabricated to contour and shape the interproximal soft tissues.

Results: At the two-week postoperative visit, the patient reported minimal pain and discomfort. Clinical examination revealed healthy peri-implant tissues with no signs of inflammation or interproximal tissue recession. Ongoing follow-up is planned to monitor osseointegration and evaluate volumetric bone stability around the implants using CBCT.

Conclusions: Although Class IV root configurations are typically contraindicated for immediate implant placement due to the difficulty in achieving primary stability, this case demonstrates that with meticulous planning and technique, immediate implant placement can be successfully executed. Primary stability was achieved, and the use of custom healing abutments supported soft tissue management. Long-term follow-up will be essential to confirm implant success and stability.



Figure 1: (a) Pre-operative clinical buccal view
(b) Occlusal view



Figure 2:
(a) PA of #8 and 9
(b) CBCT of #8
(c) CBCT of #9

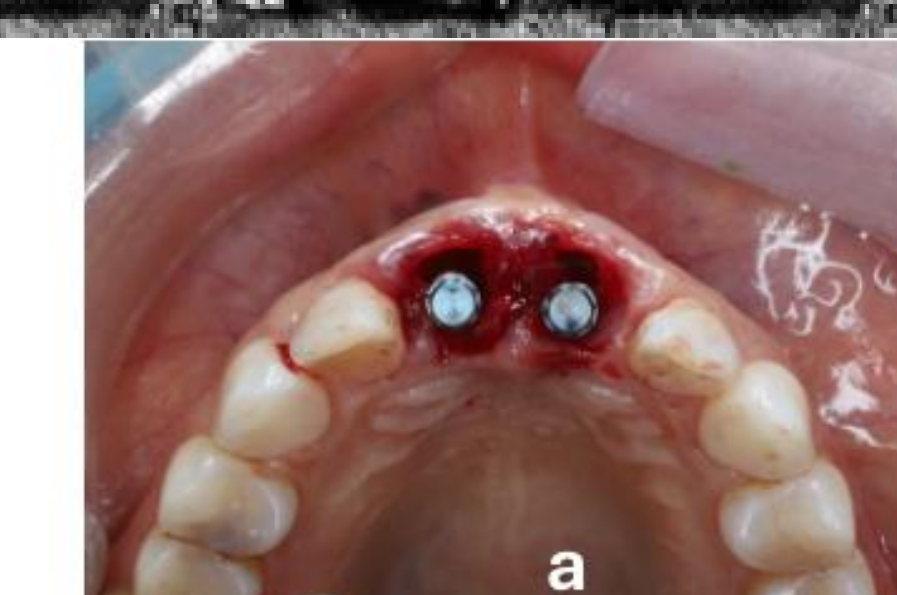


Figure 4: (a) Custom healing abutment placement
(b) Final PA radiograph post custom healer and implant placement

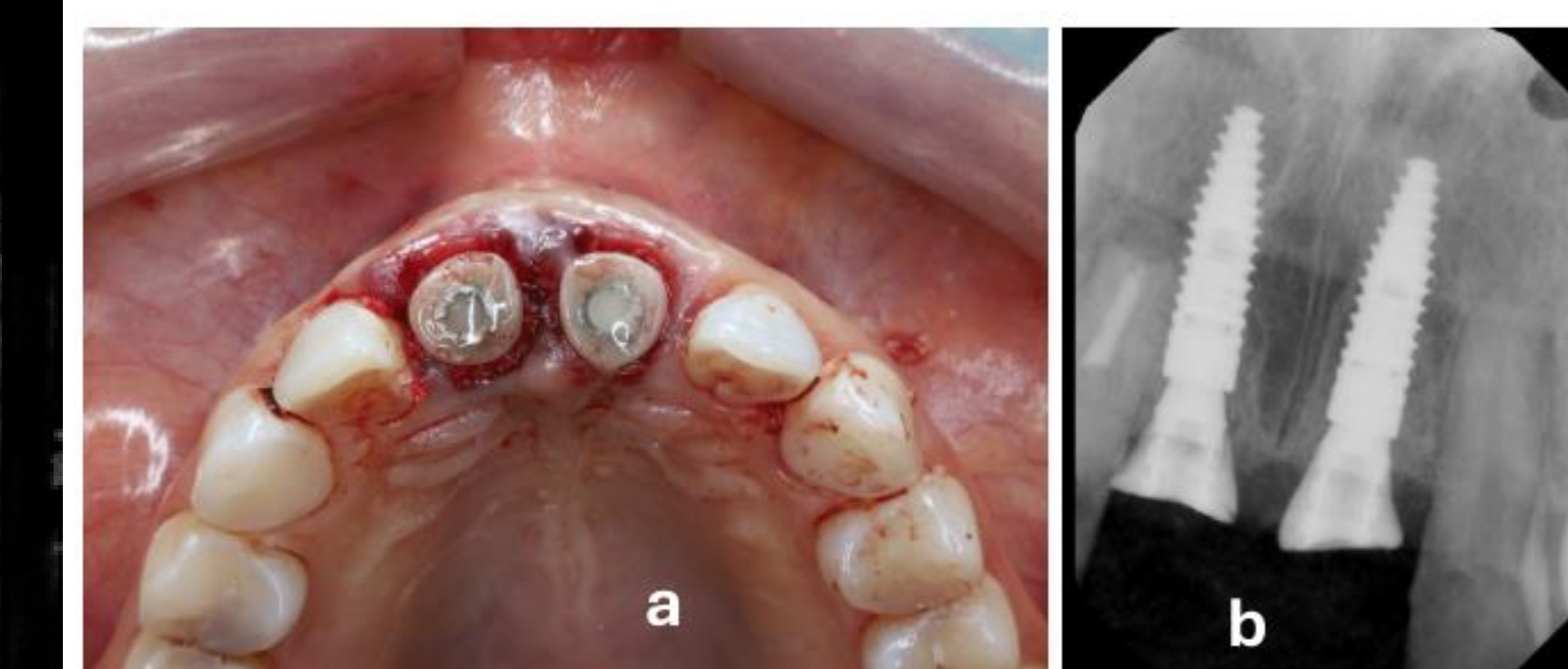


Figure 3: (a) implant placement at #8 and 9 occlusal view
(b) Buccal view

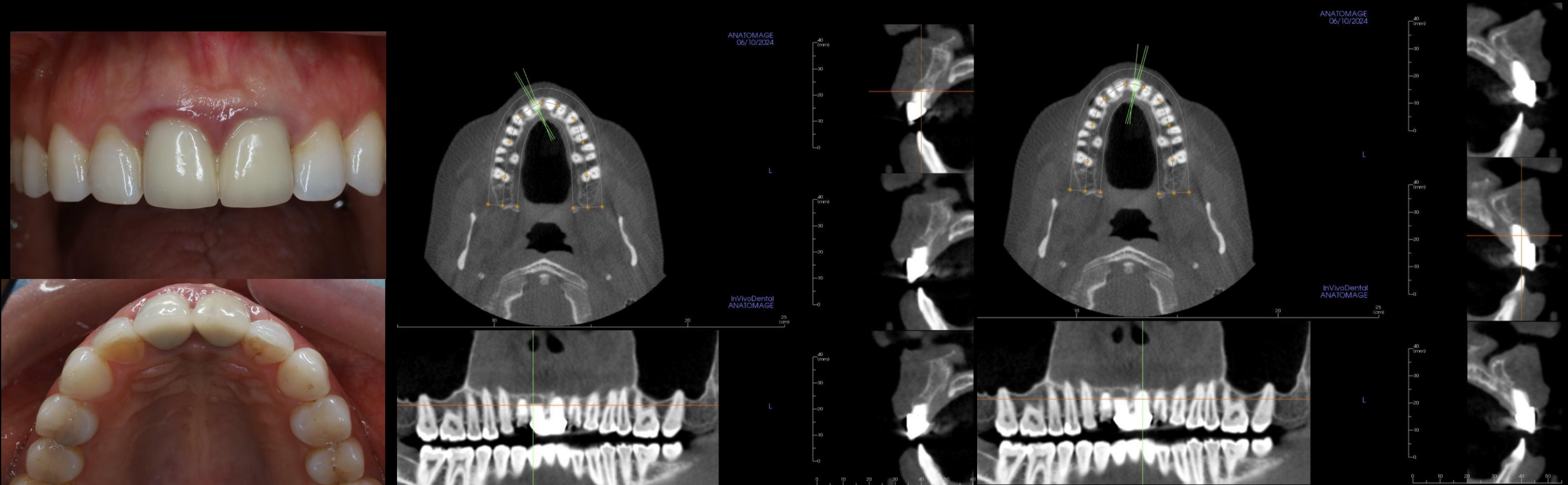


Figure 5: (a) 2 week post op buccal view
(b) Occlusal view

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Pre-op photos with 3-D Radiographic Analysis

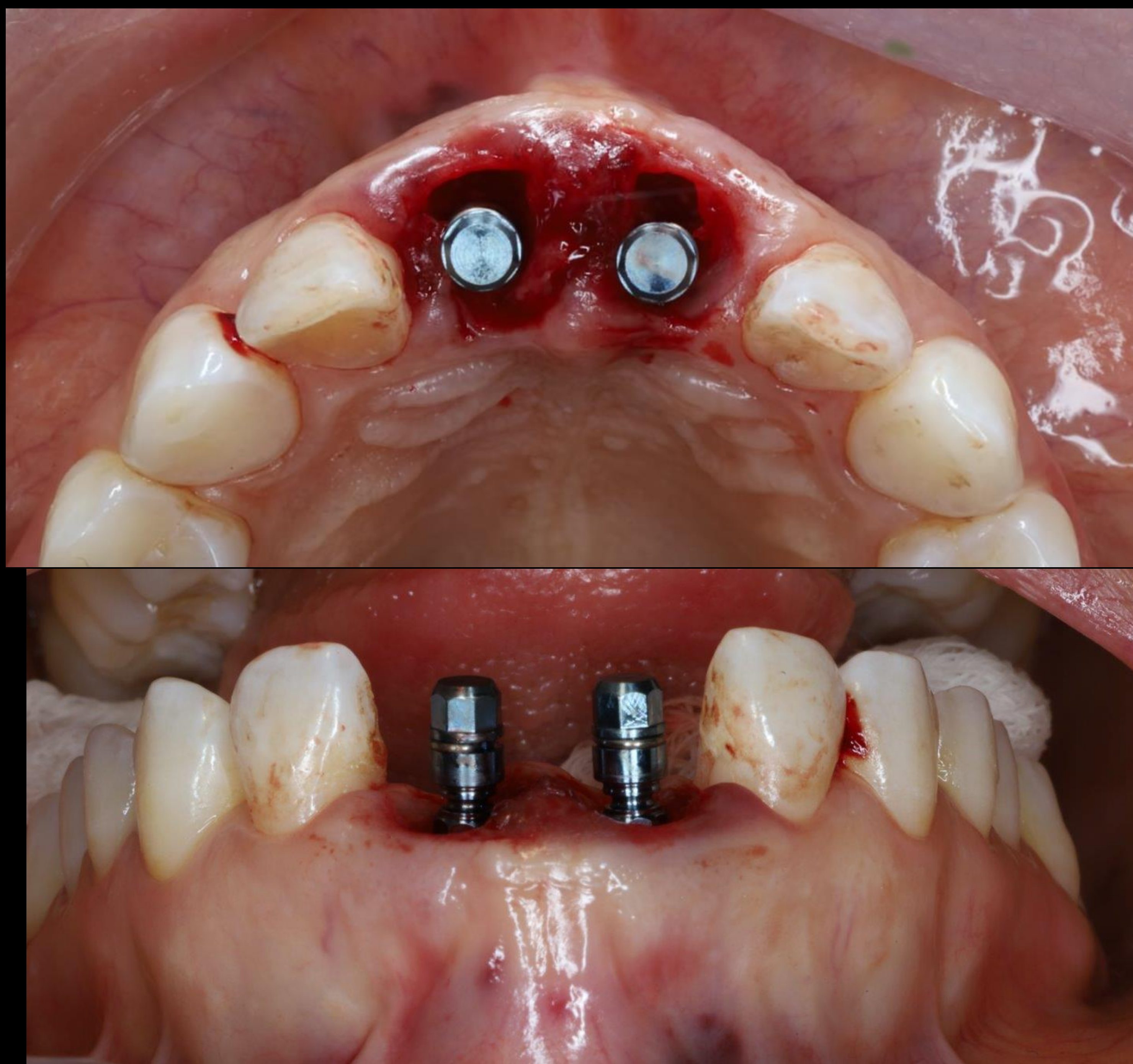


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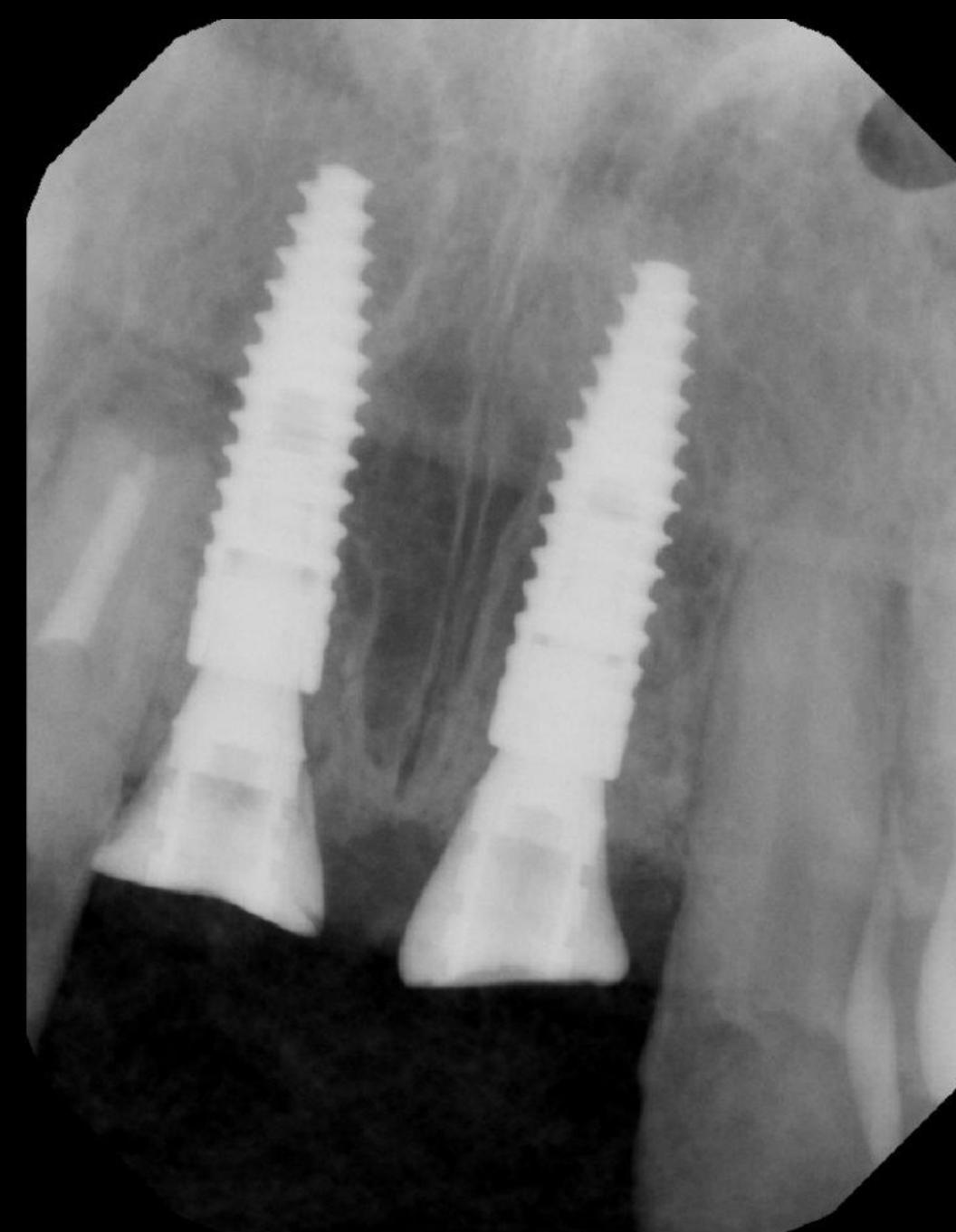
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Free handed implant placement



Post placement PA with custom healing abutment fabrication



2 week follow up



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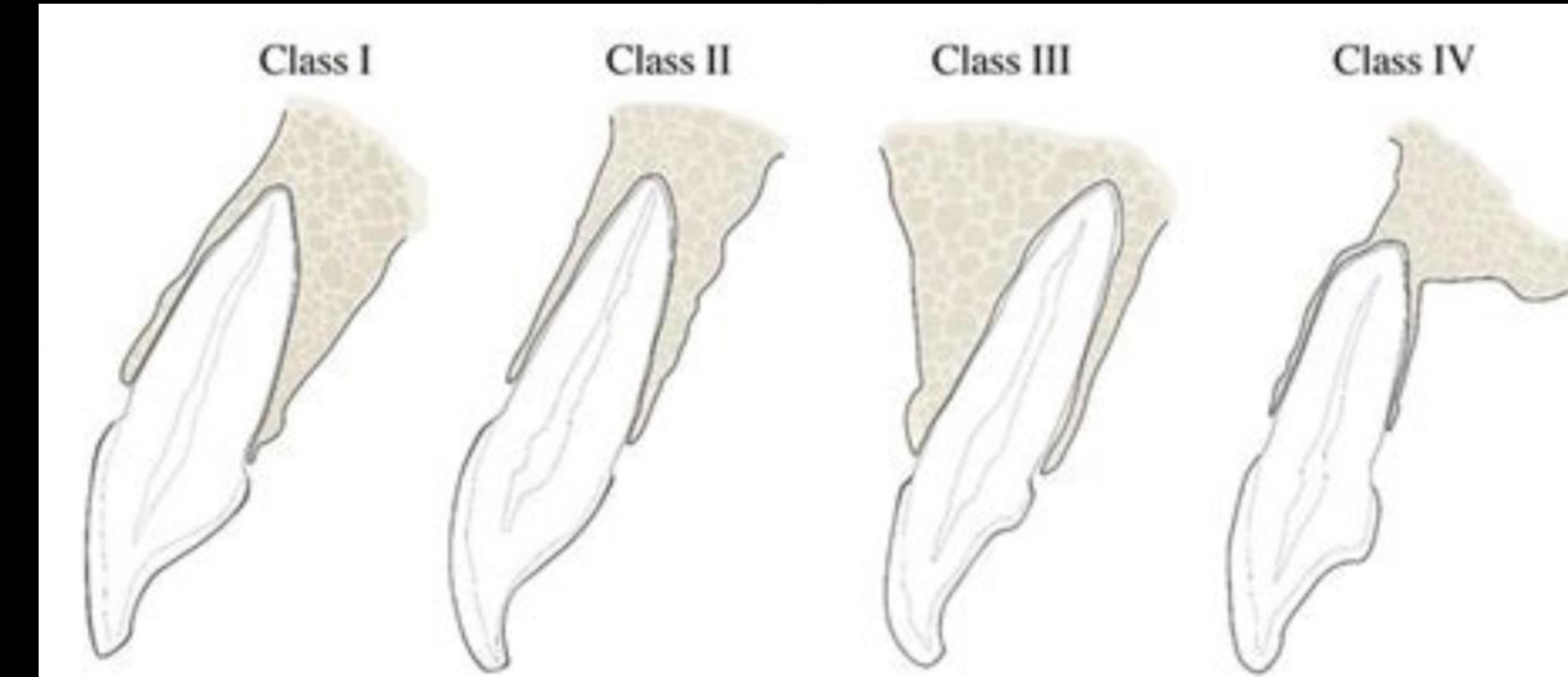
Recent advancements in immediate implant placement discuss socket configurations liked to higher implant success and failure risk. However, **there is little evidence that** specifically addresses the placement of an implant in a Class IV socket. This case illustrates how immediate implant placement can be performed in a Class IV socket configuration

Classification of sagittal root position in relation to the anterior maxillary osseous housing for immediate implant placement: a cone beam computed tomography study

Joseph Y K Kan ¹, Phillip Roe, Kitichai Rungcharassaeng, Rishi D Patel, Tomonori Waki, Jaime L Lozada, Grenith Zimmerman

Affiliations + expand

PMID: 21841998



Placement of immediate implant in a Class IV socket is possible, while it may be more difficult and technique sensitive, it still should not be considered an absolute contraindication. More studies and long term follow up will need to be performed in order to improve management for Class IV socket configurations.