

Maintaining a 40-Year-Old Trans-mandibular Implant: The Role of Peri-Implant Soft Tissue Grafting

Rami Kassar , Abdusalam Alrmali, Ahmed Gabir, Berna Saglik, Purnima Kumar

Introduction:

Severe mandibular atrophy limits conventional implant rehabilitation, and the transmandibular implant (TMI) was historically used to stabilize overdentures in such cases. TMIs persist today as legacy implants in long-term function.

This case report describes a rare 40-year functioning TMI complicated by peri-implant mucosal deficiency, successfully managed with free gingival grafting to preserve implant function.

Methods:

Following clinical and radiographic confirmation of a stable transmandibular implant with peri-implant mucositis and insufficient keratinized mucosa, soft tissue augmentation was performed. Under local anesthesia, a partial-thickness flap was elevated to create a vascularized recipient bed, and a 1-mm free gingival graft harvested from the palate was contoured and secured with 5-0 monofilament sutures.

A periodontal dressing was applied, and the overdenture was temporarily discontinued. Postoperative care included chlorhexidine rinses, a soft diet, and follow-up to monitor graft integration.



A : Baseline Extra-oral Picture



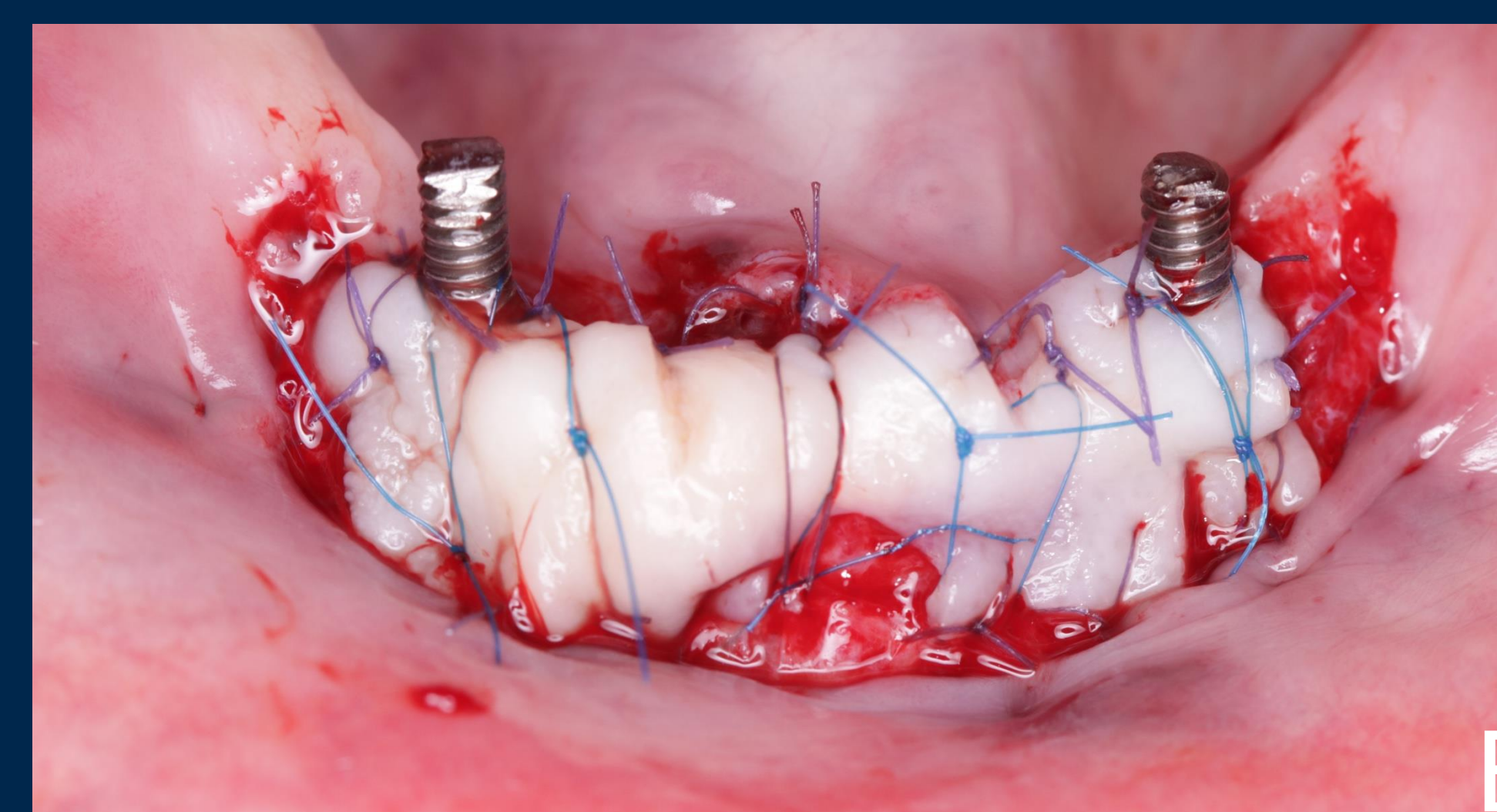
B : Baseline Extra-oral Picture



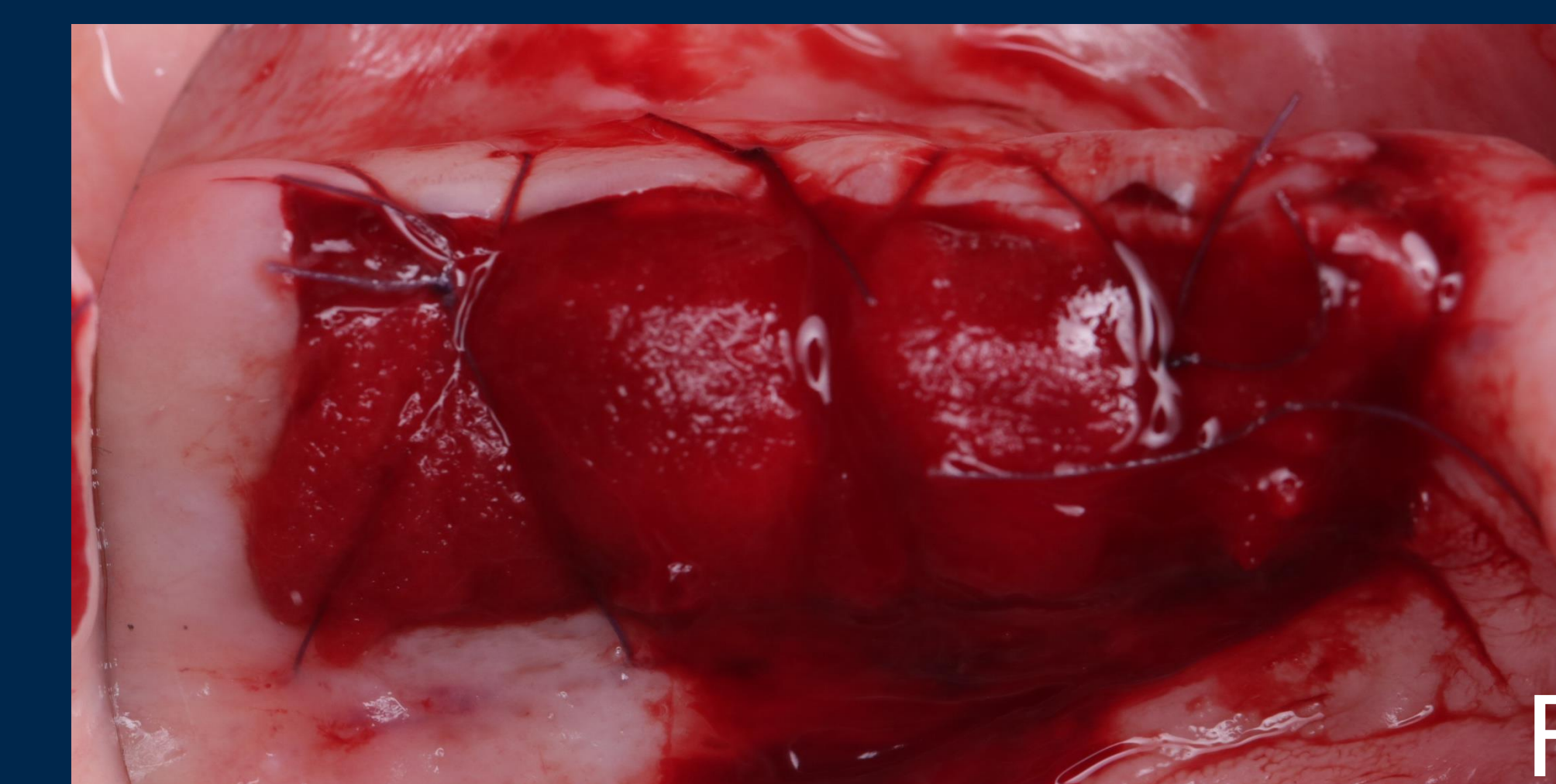
C : Preoperative - Graft Recipient Site



D : Preoperative - Graft Donor Site



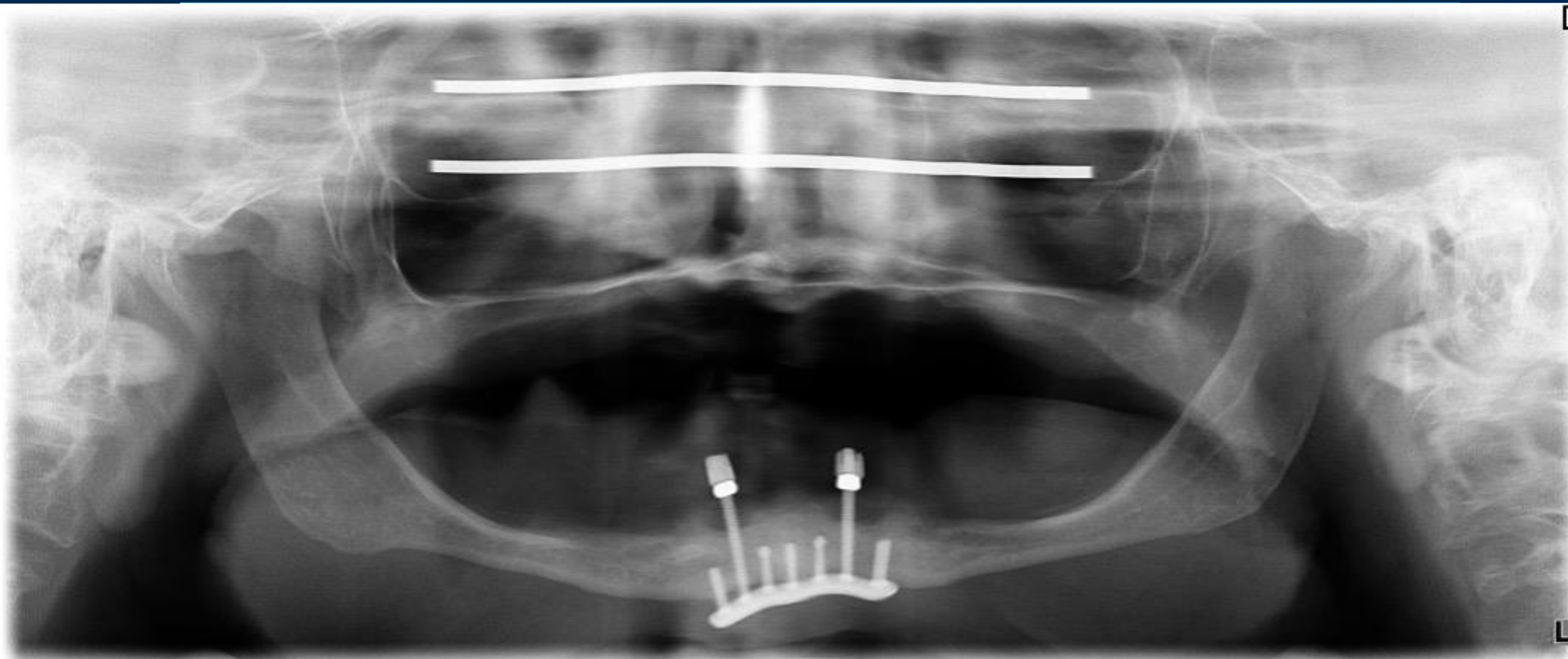
E: Intra-operative - Graft Recipient Site



F: Intra-operative - Graft Donor Site

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Results:

The free gingival graft healed uneventfully with successful integration. At two weeks, the graft was viable with early revascularization and increased tissue thickness. At one-month, keratinized mucosa increased with resolution of bleeding and improved plaque control.

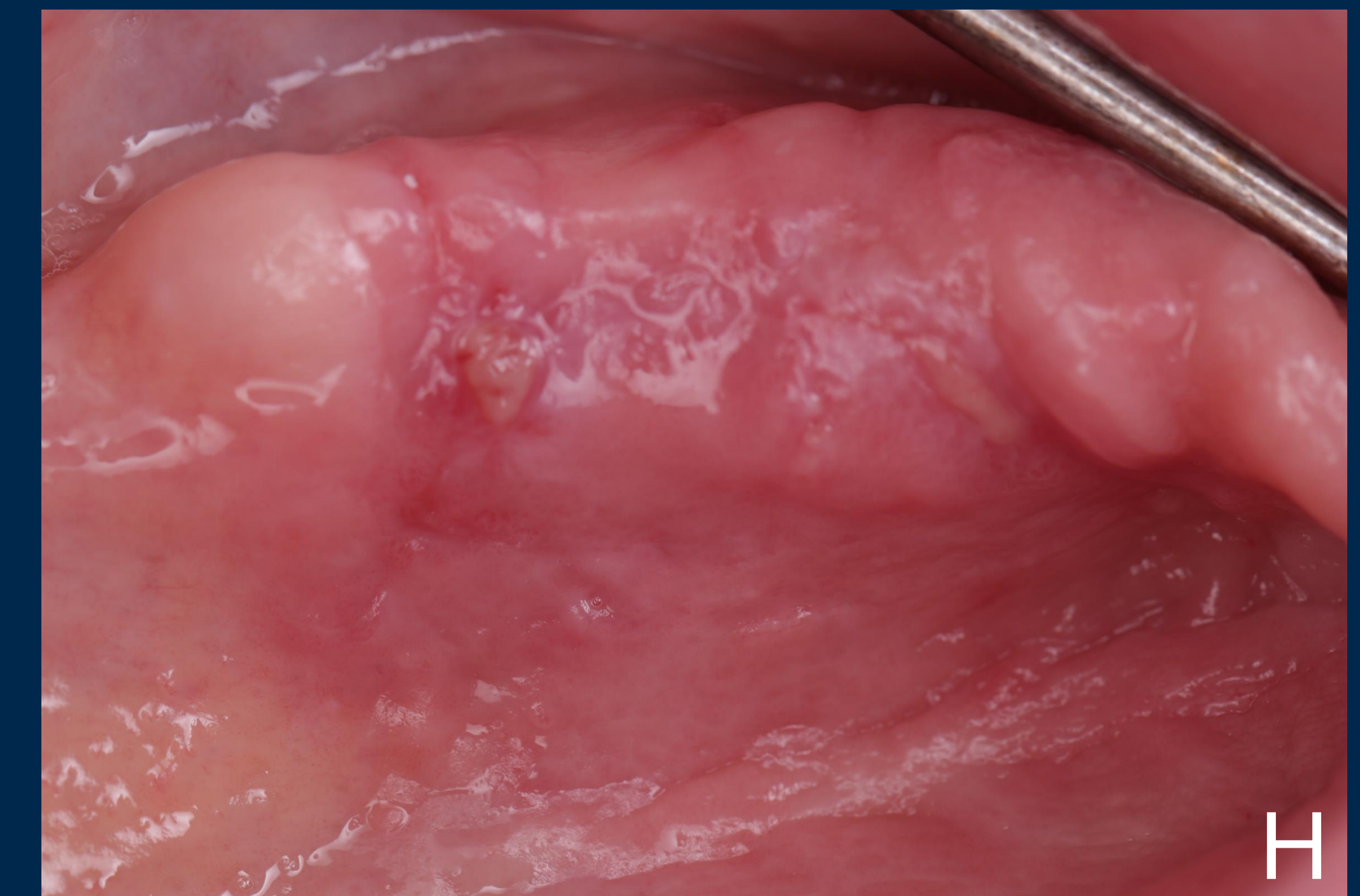
At 12 months, a stable band of keratinized tissue was maintained without recurrent mucositis. The transmandibular implant remained fully functional with restored overdenture stability and patient satisfaction.

Conclusion:

Soft tissue deficiency, rather than implant failure, may underlie late complications in long-standing transmandibular implants. Free gingival grafting predictably restored peri-implant keratinized mucosa, resolved inflammation, and preserved implant function. Even after 40 years, legacy TMIs can be maintained with targeted soft tissue management, avoiding complex removal.



G: Two Weeks Post-operative Picture -
Recipient Site



H: Two Weeks Post-operative Picture -
Donor Site



I: Four Weeks Post-operative Picture -
Recipient Site



J: Four Weeks Post-operative Picture -
Donor Site