Clinical Management of an Atypically Positioned Mental Nerve During Peri-Implant Soft Tissue Augmentation.

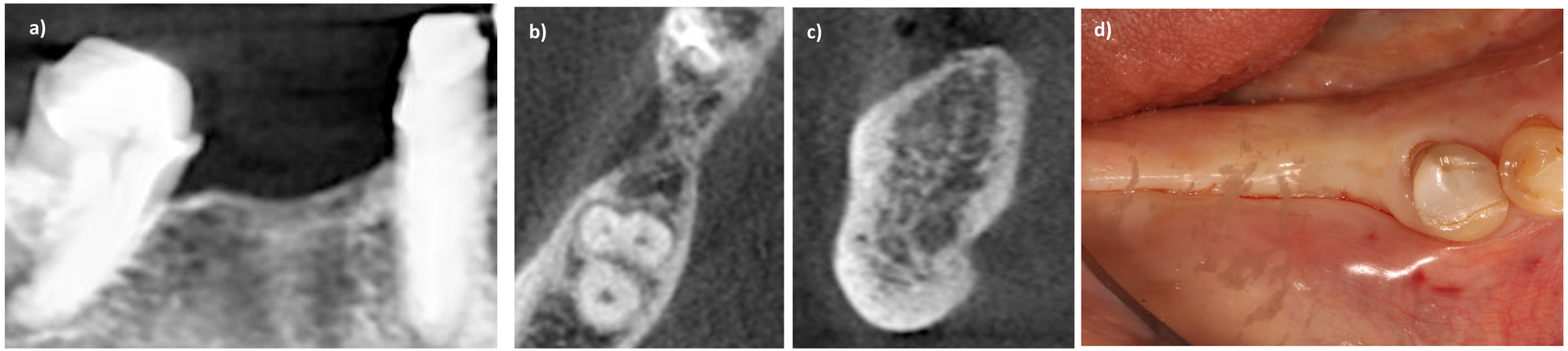
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Figures

a) Pre-extraction CBCT (sagittal)
b) Axial view CBCT
c) Coronal view CBCT
d) Post-extraction healing (pre-graft)

Background

The inferior alveolar nerve (IAN) and its branches are the most commonly injured terminal branches of the trigeminal nerve during oral and maxillofacial treatment accounting for 64.7% of adverse cases.[1] The IAN extends lingually along the mandibular canal exiting the mental foramen (MF) as the mental nerve (MN). Several groups have reported the MF as 1-3mm inferior to the apex of the second premolar (52.8%) and between the mandibular premolars (29.6%).[2,3] The average length (AL) of the anterior loop is 1.96mm (58.08%) with indications that AL decreases in incidence and length with aging populations.[2, 4, 5] MN injury occurs following numerous surgeries and injections. Symptoms include paresthesia, neuropathy, and occlusal discomfort. Recovery periods range from 8 weeks to 24 months with roughly 10% of cases demonstrating permanent damage.[1, 6]

Aim

The aim of this case report is to present the clinical management of an atypically positioned mental nerve during peri-implant soft tissue augmentation.

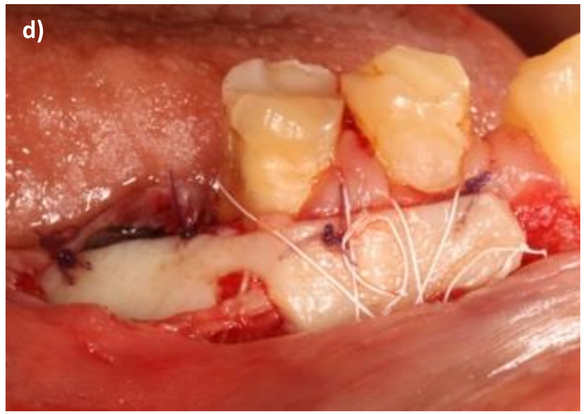
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Materials & Methods

A 67 year-old male patient was referred to the graduate periodontics clinic for implant consultation to address edentulous #19. Clinical Diagnosis: Partial edentulism at sites #17-19. Mucogingival deformities: lack of keratinized gingiva #21M-#19D, gingival soft/tissue recession #20-21 (RT2)[7], peri-implant soft and hard tissue deficiencies #19, and decreased vestibular depth. Treatment Plan: Staged placement of an anatomically sloped implant (4.8mm x 9mm) #19. At least 2mm of keratinized tissue was repositioned around adjacent teeth and implant to prevent plaque accumulation, patient discomfort, bleeding, and recession.[8] Second stage implant surgery #19 with simultaneous free gingival graft (FGG) #19-21 after 6 months. The MN was exposed during recipient bed preparation. An FGG was harvested, trimmed to a semi-lunar shape, and positioned to accommodate the MN. Polypropylene sutures were used to anchor the graft to the existing attached gingiva. Periosteal-stabilizing PTFE sling sutures were placed anterior to the nerve to stabilize the graft against the recipient bed. Posterior suture placement was avoided due to prevent MB injury. Post-operative analgesics and glucocorticoids were administered.

Figures

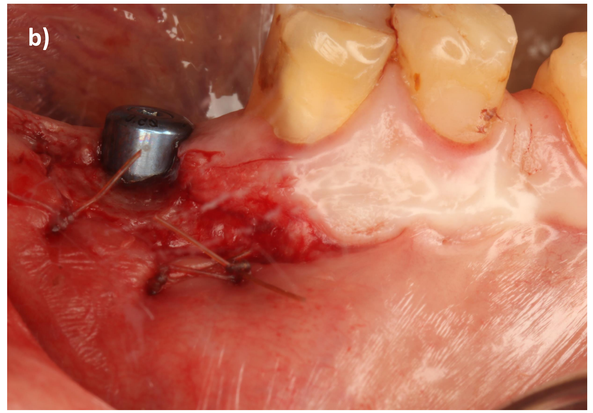
a) Pre-Operative view
b) Recipient bed preparation with MN exposure
c) occlusal viewpoint of donor graft
d) FGG trimmed and sutured around the MN

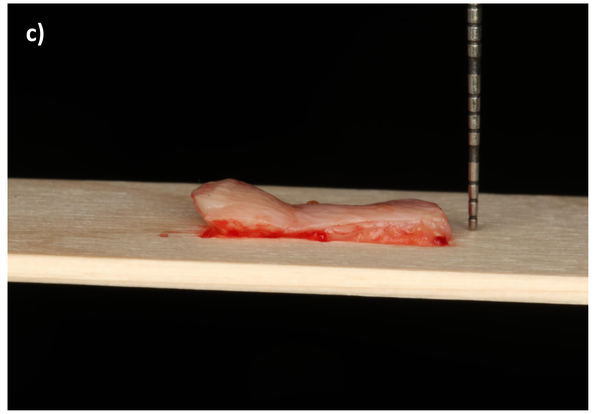
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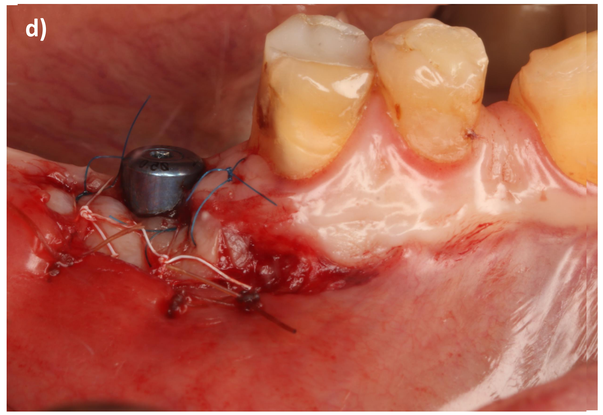
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Results

No complications reported. 4-month clinical examination revealed adequate increase in vestibular depth, significant keratinized tissue width gain and thickness on #20D and #21M. Keratinized tissue gain was minimal at implant site #19. A revision FGG was later completed to extend keratinized tissue buccal to implant using a similar technique.

Conclusion

This case report presents an atypically located mental nerve during the soft tissue augmentation procedure. The semi-lunar free gingival graft technique allowed preservation of the mental nerve without post-operative complications.

Figures

a) 4 month post-operative view
b) Bed preparation #2 with stabilizing sutures
c) Palatal donor graft #2
d) Graft trimmed and sutured into bed

References:

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