

3D Virtual Planning of Inferior Alveolar Nerve Transposition and Implant Placement: Case Report



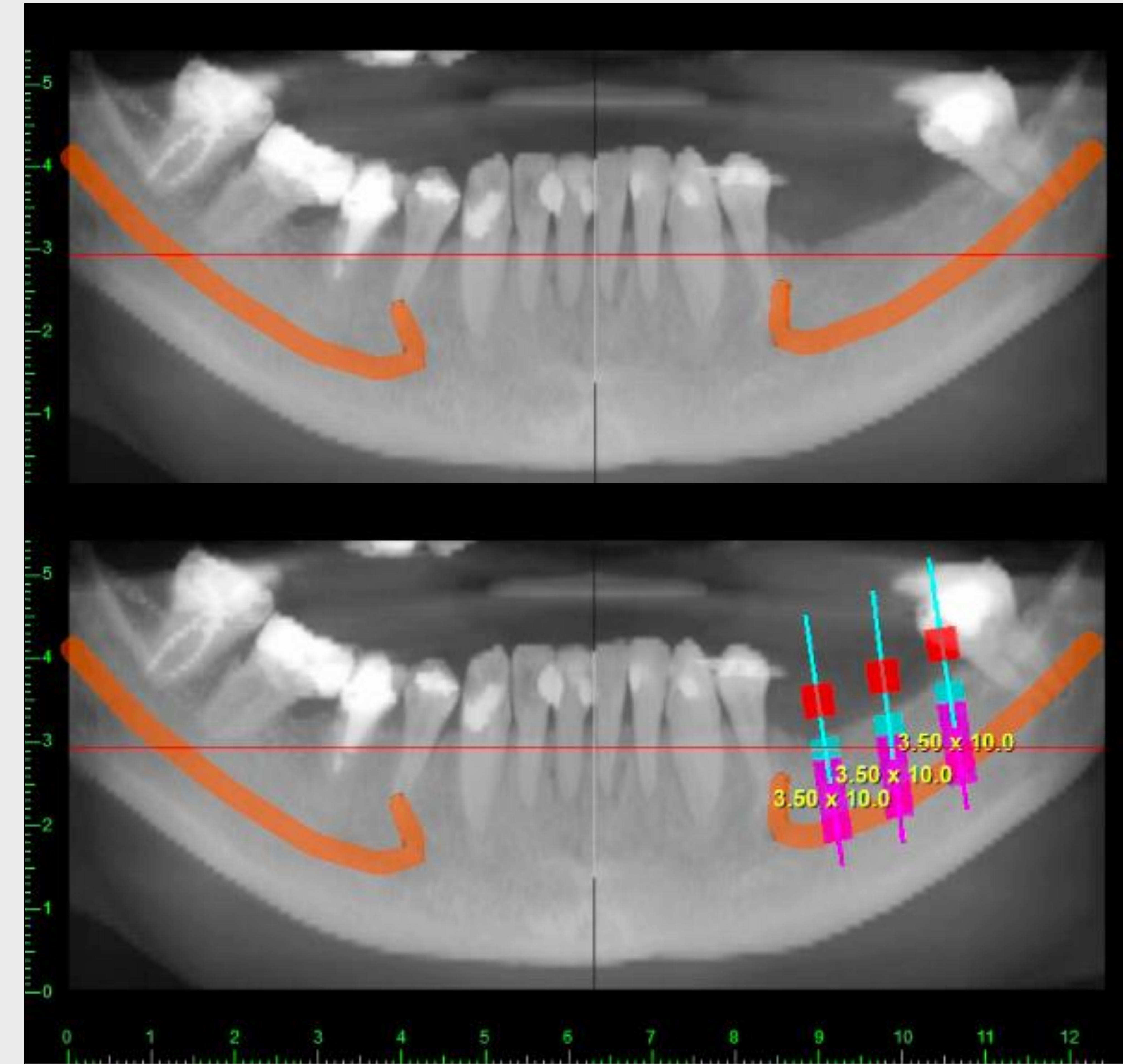
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INTRODUCTION: The mandibular canal and its contents, the inferior alveolar nerve (IAN) and advanced bone resorption can result in limited bone edge with inadequate vertical height, leading to a complex surgical execution, even for experienced clinicians. Furthermore, the weakening of the mandibular body, especially when multiple implants are placed simultaneously, and the altered sensory function of the nerve should be considered. Some treatment alternatives are suggested to manage these cases, and the Inferior Alveolar Nerve Transposition, or lateralization, might be an option that allows placing dental implants on an ideal positioning on the cortical and basal mandible bone. 3D virtual surgical planning softwares are helpful tools to provide a careful planning procedure.



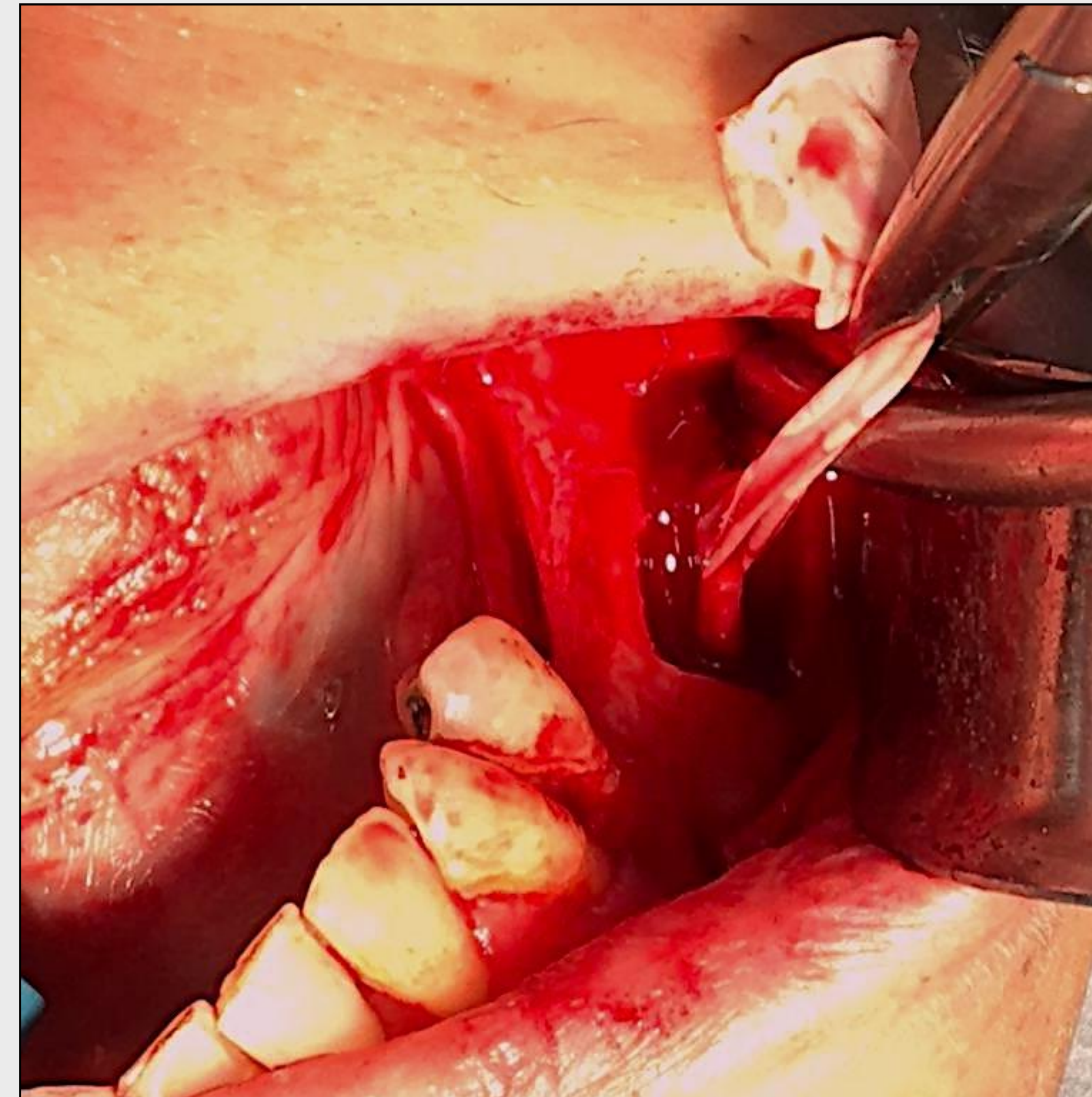
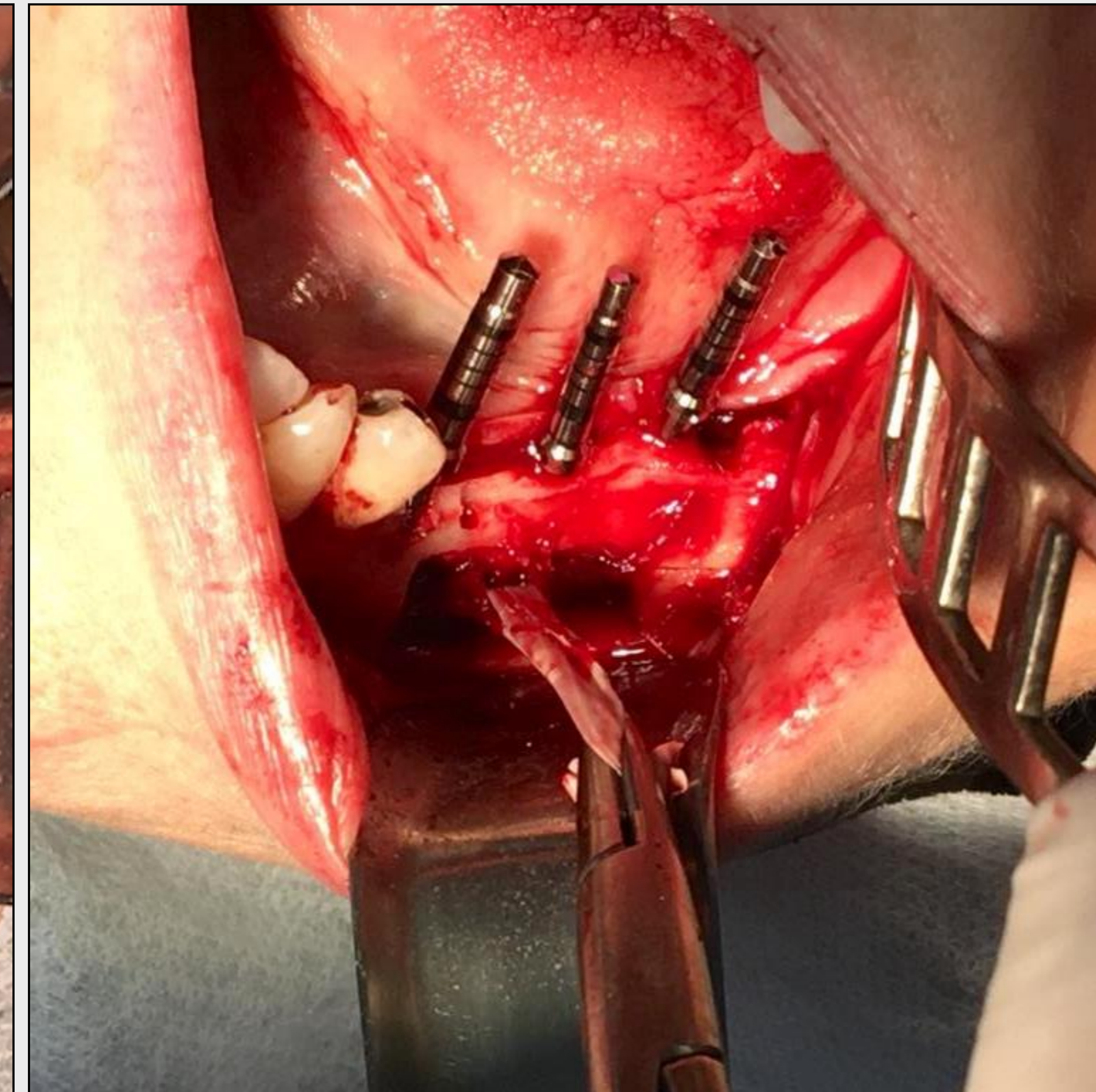
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CASE REPORT: A 50 year-old caucasian female caucasian presented to the dental care with dental absence in the left posterior mandible. After initial oral examination, a cone-beam computerized tomography (CBCT) was taken and applied to a 3D virtual surgical planning computer software. On the surgical procedure, a Piezoelectric device performed the lateral osteotomy of the mandibular canal and the bone around the neurovascular bundle was removed to provide the nerve manipulation to buccal direction. On that time, three morse taper dental implants by 3.5 x 10mm were placed under direct visualization. Bone Grafting, using autogenous bone and hydroxyapatite combined with PRF were placed before the suture.



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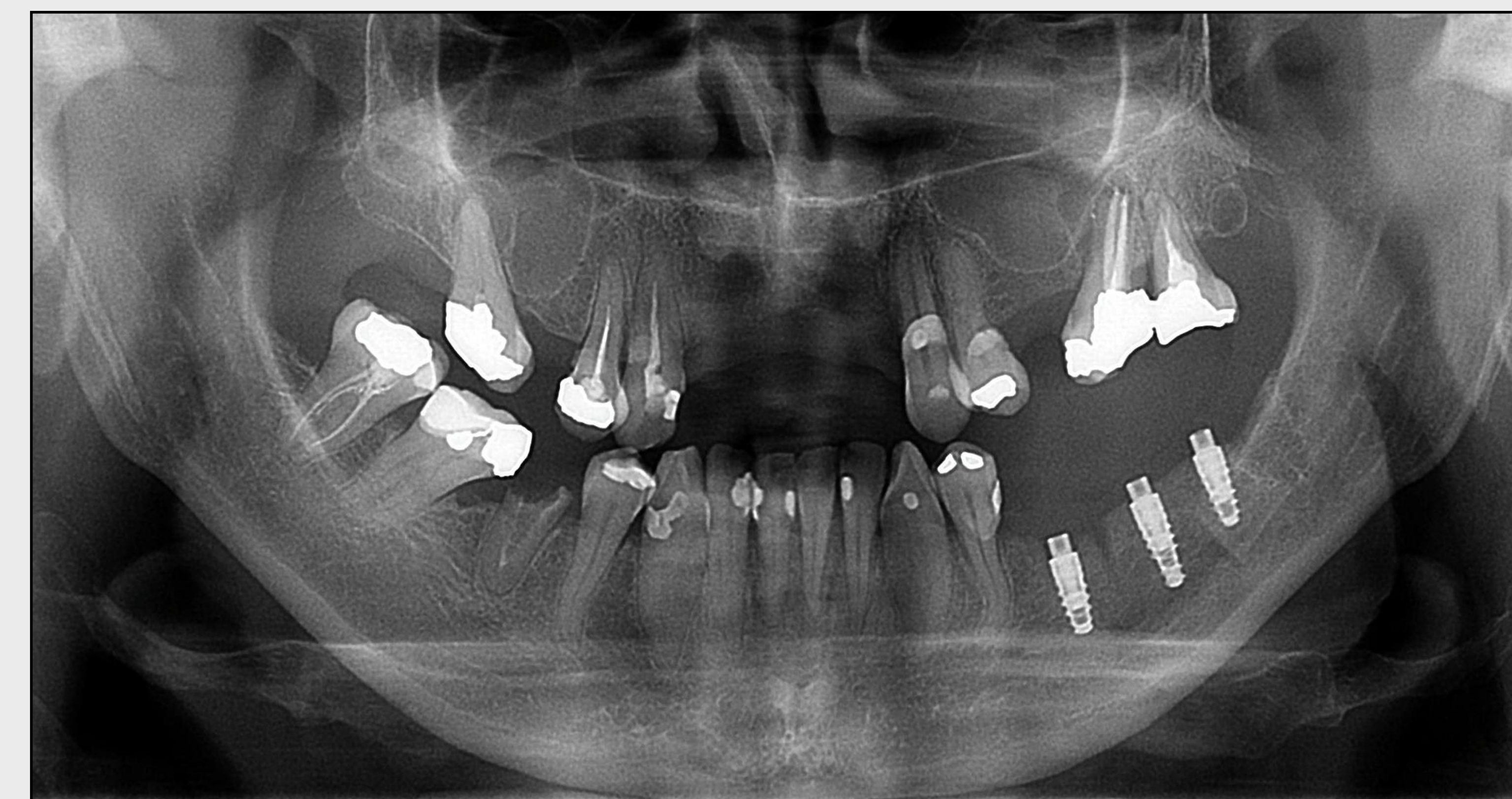
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RESULTS: Radiographic evaluation made with a digital panoramic showed osseointegration around all dental implants after four months of postoperative. The prosthetic phase was finalized with a metal - ceramic ferulized prostheses. The patient had a complete recovery of the mandible sensitivity seven months after the surgical procedure. After a two years follow-up no signs of dental failing are presented.

CONCLUSION: Despite the possible complications, the surgical technique for inferior alveolar nerve transposition is a valid option in selected cases. The use of 3D virtual planning improves the success for dental implant placement in restricted areas.



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