

Alveolar Distraction Osteogenesis for Dental Implant Rehabilitation Following Fibular Reconstruction: A Case Series

Type: Article

Abstract:

Objective: Alveolar distraction osteogenesis (ADO), a novel bone augmentation technique, is gaining acceptance in restoring the vertical bone discrepancy between the transplanted graft and the residual alveolar bone after mandibular reconstruction. This case series presents the outcomes of ADO in fibula-reconstructed mandibles rehabilitated with dental implants, with an emphasis on clinical indications, surgical protocol, clinical outcomes, histologic evidence, and complications. **Materials and Methods:** Five patients underwent fibula distraction procedures after undergoing mandibular reconstruction with a vascularized fibula bone graft. The indication for the application of ADO was for the correction of the vertical discrepancy between the top of the reconstructed fibula and the adjacent alveolar crest to achieve adequate vertical bone height before implant placement. **Results:** The mean vertical bone height achieved was 13.58 mm. Twenty-two dental implants were placed in 5 patients. All patients were rehabilitated with implant-supported prostheses. Bone biopsies showed the distracted area was filled with newly formed, bony trabeculae between the transported fibula and the basal segments. The most common complication was transient infection around the distractor rod. **Conclusions:** ADO can be performed on fibula-reconstructed mandibles to achieve the restoration of alveolar height, which then can be rehabilitated with dental implant-supported prostheses. The procedure has a minor risk of infection associated with the distractor rod, which does not compromise the bone regeneration from distraction. Patients with mandibles reconstructed with fibulas can attain dental implant rehabilitation with ADO, achieving good esthetic and occlusal outcomes.

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