



Immediate Loading of Small Diameter Implants in Severely Atrophic Mandibles: A Case Report

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“...Small diameter implants with flapless surgery to support conventional denture present a method of restoring patients with an atrophic mandible without any bone augmentation surgery...”

Conventional mandibular dentures for patients with severely atrophic mandibles often times present problems with retention, phonetics, function, and pain caused by denture pressure on the inferior alveolar nerve. The use of standard diameter implants to support an overdenture often requires ridge augmentation procedures in order to place the implant in bone of sufficient volume. Small diameter implants with flapless surgery to support conventional denture present a method of restoring patients with an atrophic mandible without any bone augmentation surgery. The purpose of this presentation is to report the use of immediately loaded small diameter implants to support an overdenture in severely atrophic mandibles.

A case report is presented of a 64-year-old asian man who was not able to use a conventional lower denture because of lack of stability in function. Placing four small diameter ball-type implants in the mandibular anterior area with flapless surgical procedures avoided the need for bone augmentation. A mandibular denture was then relined with a resilient silicone material to establish adequate retention. The denture provided immediate occlusal function and improved retention. The patient had no dietary restrictions. The patient reported that the result was comfortable. To date, the use of immediately placed small diameter implants to support removable overdenture in the mandible is well documented. Further studies are required to determine long term predictability of this treatment modality.

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Fig 1. Pre-existing upper denture



Fig 2. Pre-existing lower denture



Fig 3. Severely atrophied mandibular alveolar ridge



Fig 4. Radiographic view of edentulous ridge



Fig 5. Surgical and prosthetic instruments



Fig 6. Implant with adapter (manual)



Fig 7. Profile drill (1.3mm diameter)



Fig 8. Flapless osteotomy using profile drill



Fig 9. Reamer drill for dense bone (1.8mm diameter)

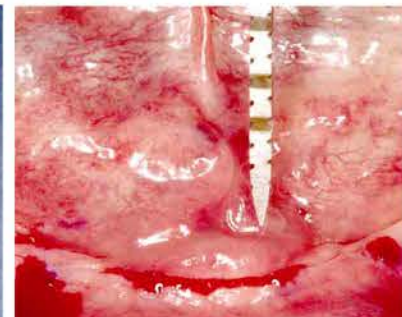


Fig 10. Osteotomy with reamer drill



Fig 11. 2.4mm x 14mm small diameter implants



Fig 12. Evenly distributed 4 implants between foramina



Fig 13. Identify location of implants with Fit-Checker



Fig 14. Mark implant location inside denture

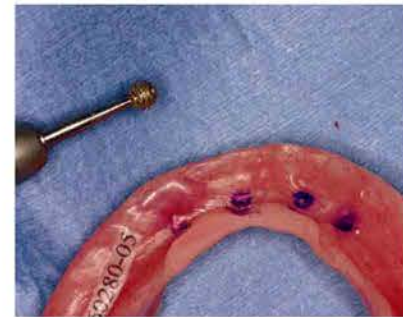


Fig 15. Employ spherical bur to...



Fig 16. Create adequate space for reline material

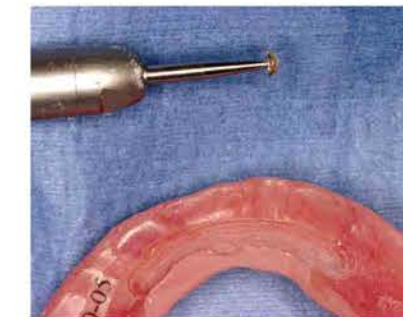


Fig 17. Employ encasement bur to...



Fig 18. Create undercut for mechanical retention



Fig 19. Silicone reline material and mixing pad



Fig 20. Use Monoject syringe to avoid overfill



Fig 21. Careful loading of reline material



Fig 22. Remove excess material with scissors



Fig 23. Post-op panoramic view



Fig 24. Same day prosthetic delivery