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FREDERICK P. ROSE HALL
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Utilizing Immediately Loaded Small Diameter Implants to Manage Anterior Maxillary Ridge Defect: A Case Report

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"...Small diameter implants can be an aid in maintaining aesthetics while maxillary anterior ridge defects are being surgically treated..."

Small diameter implants(SDIs) can be an aid in maintaining aesthetics while maxillary anterior ridge defects are being surgically treated.

A 24 year old male patient presented with an advanced anterior maxillary horizontal defect due to previous trauma and was initially treated with four small diameter endosseous implants using a flap-less approach. These implants were connected to a screw retained acrylic fixed transitional restoration, and placed into immediate non-occlusal loading.

Six months later, the maxillary ridge defect was simultaneously reconstructed using two different block graft materials. An autogenous block graft from the ramus was used to treat one area of the defect and an alloplastic cortico-cancellous block was used to rebuild the other. The small diameter implant borne prosthesis was then adjusted to accommodate the graft material and the prosthesis was replaced immediately. This type of fixed implant supported prosthesis proved highly successful in providing the patient with an aesthetic and comfortable interim restoration while also protecting the augmented sites from loading and movement during the critical healing phase.

Five months later, two of the small diameter implants (#8, 9) were removed, and three conventional endosseous implants (#8, 9, 10) were placed into the healed augmented ridge using a two stage approach. The two remaining small diameter implants (#7, 12) were retained to support the transitional fixed prosthesis and will be incorporated into the final definitive restoration following integration of the conventional implants.

Fig 1. Pre-op frontal view

Fig 2. Pre-op occlusal view

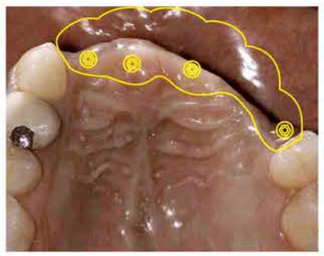

Fig 3. Tx plan for small diameter implant(SDI) sites

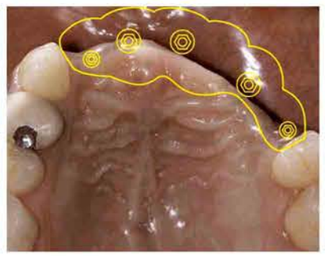

Fig 4. Tx plan for final implant sites

Fig 5. Screw retained provisional (mounted)

Fig 6. Screw retained provisional (try-in)

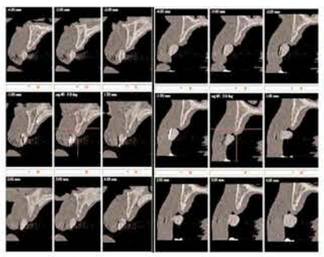

Fig 7. CT scan images (horizontal defects)

Fig 8. Computer generated surgical guide

Fig 9. SDI osteotomy (flapless approach)

Fig 10. SDI installation (2.2mm x 10mm x 4)

Fig 11. Panorex at SDI installation

Fig 12. Screw retained fixed provisional with 4 SDIs

Fig 13. Screw retained provisional (smile line)

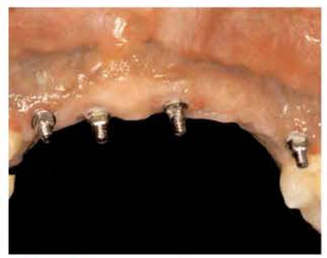

Fig 14. Tissue response (6 months post-op)

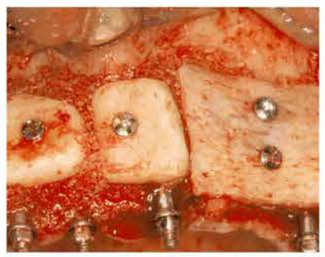

Fig 15. Ridge augmentation using Autograft + Allograft

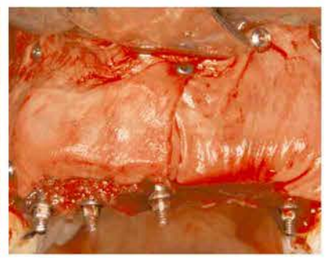

Fig 16. Membranes tacked into position

Fig 17. Tension-free primary closure

Fig 18. Re-insertion of screw retained fixed provisional

Fig 19. Five months post-grafting

Fig 20. Tissue response (5 months post-grafting)

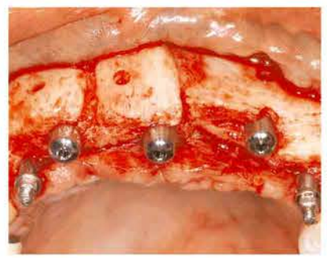

Fig 21. Three implants inserted (3.5mm x 13mm)

Fig 22. Primary closure

Fig 23. Re-insertion of screw retained fixed provisional

Fig 24. Transitional restoration (osseointegration period)

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