Case Report

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Rehabilitation of an Edentulous jaw with an ATLANTIS ISUS 2in1 suprastructure

This 75 year old male patient presented with a no remaining dentition other than an root on the LR3. He has been unable to tolerate dentures and has been using his edentulous ridges to masticate. This had lead to an unusual resorption pattern and loss of his OVD. Treatment involved constructing upper and lower dentures, ensuring the patient could tolerate the occlusion we designed, A CBCT scan was taken to asses ridge volume and 4 upper implants placed in the optimal bio-mechanical spread using a stent. Due to the pattern of resorption the anterior implants were placed in positions that made restoration complex. an ATLANTIS ISUS™ 2in1 CAD CAM milled suprastructure was designed and constructed to overcome the restorative challenges faced with this case.

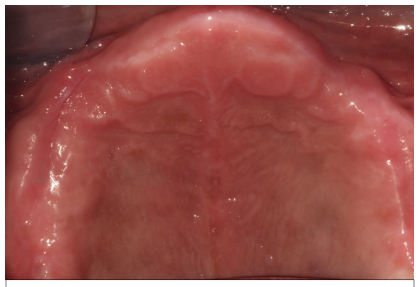




1. Initial presentation showing edentulous ridges with a retained root LRS and functional resorption on the UR34 and UL3456 areas



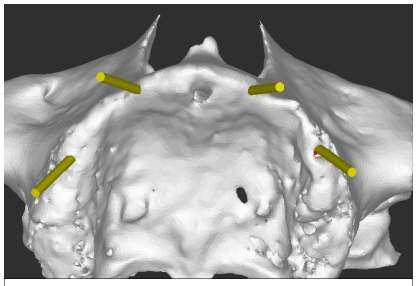
2. The patients biting position showing posturing of the lower jaw in function



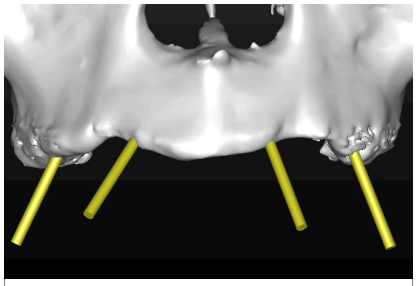
3. Upper edentulous ridge



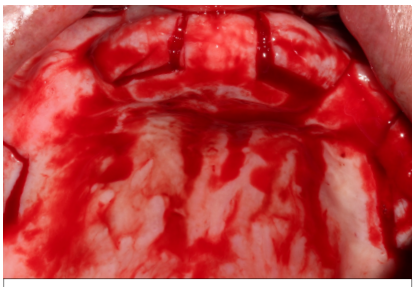
4. Initial radiographic assessment.



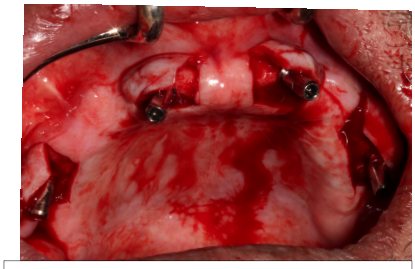
5. Simplant (Materialise Belgium) reformatted CBT scan showing planned implant positions with ideal biomechanical spread



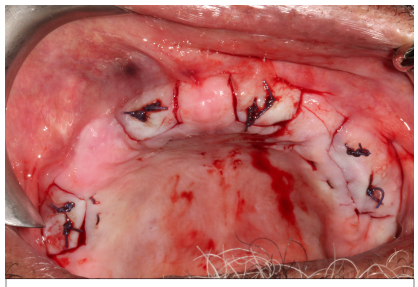
6. Reformatted CBCT scan showing planned implant positions and implant in UL23 restorative space and angulation scan.



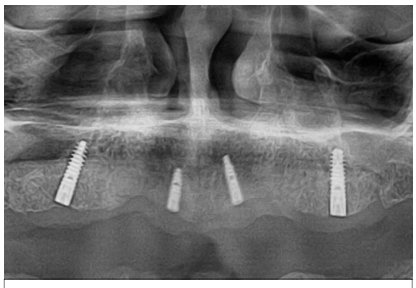
7. Full Aseptic setup during surgery. Mid palatal flaps raised in at surgery



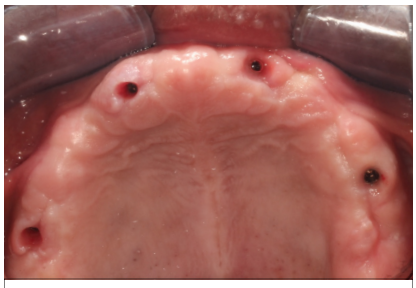
8. 4 Ankylos CX implants placed



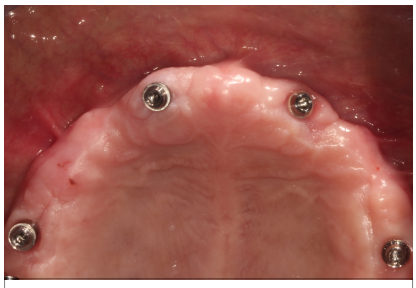
9. Flaps closed with 3.0 Vicryl mattress sutures



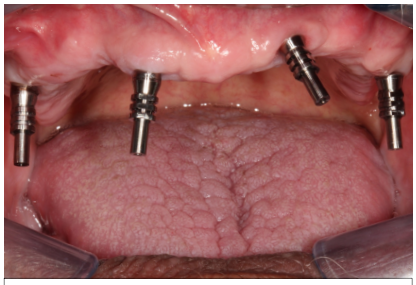
10. Post operative radiograph showing implants



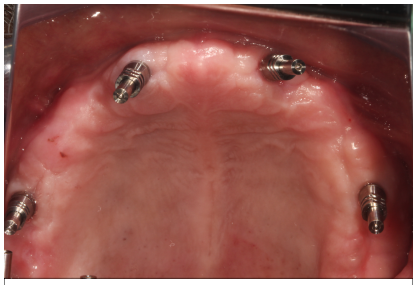
11. View of exposed implants at 3 months. healing was uneventful. The lower arch was restored with 2 implants and locators.



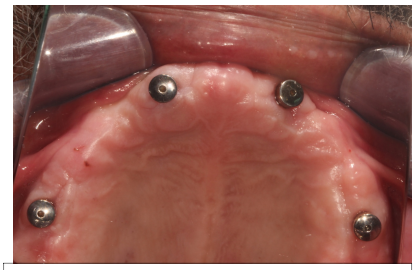
12. Balance anterior abutments placed on the implants. a combination of straight and angled abutments has been used, with collar heights to match the soft tissue around the implants



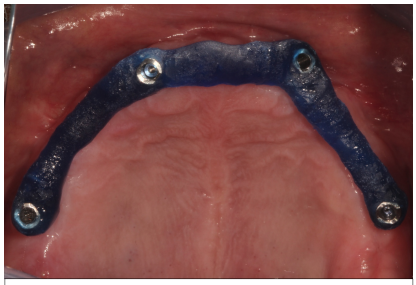
13. Impression posts are connected to the balance anterior abutments showing height and angulation divergence of UL2 implant. An abutment level impression was taken



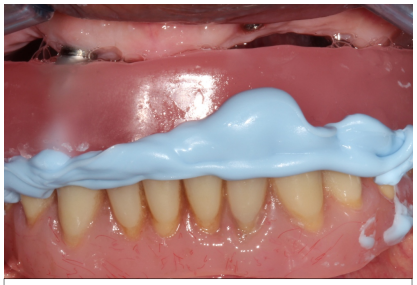
14. Occlusal view of the impression posts showing good anteroposterior spread.



15. Healing caps were placed over the abutments and the patients denture adjusted to accommodate these



16. A verification jig was constructed from the impression. This was tried in the mouth to ensure that the master model was accurate.

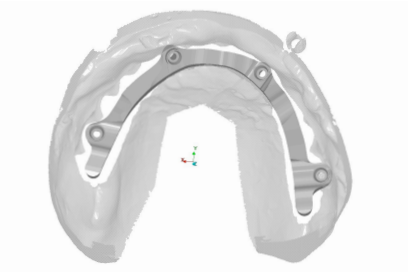


17. A screw retained bite registration of the upper jaw was taken

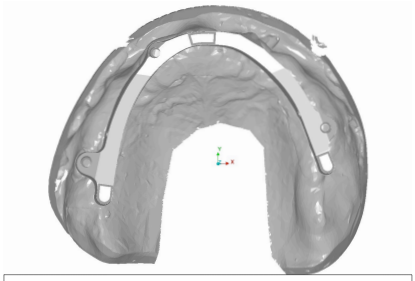


18. A screw retained wax try in was taken to verify the fit, aesthetics, phonetics and function of the proposed overdenture. This was approved by the patient at this stage

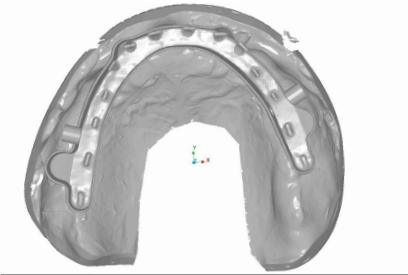
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19. The master model with wax try in was sent to ATLANTIS and scanned. The amount to restorative space needed was calculated based on the try and a primary and secondary bar designed. In this view the secondary bar has been removed



20. View of the primary ATLANTIS ISUS bar on a virtual model of the jaw



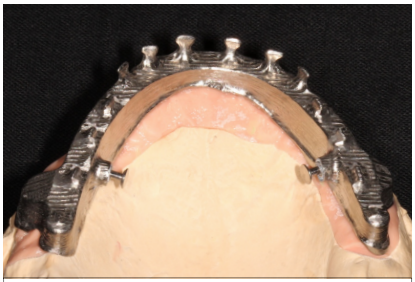
21. View of the secondary bar on the virtual model



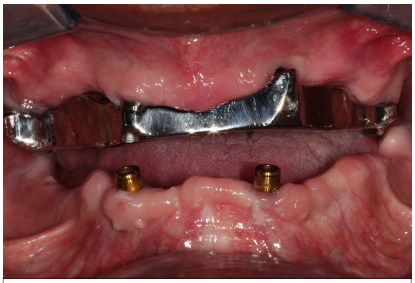
22. The primary ATLANTIS ISUS titanium bar.



23. The Secondary ATLANTIC ISUS bar with retention pins in the molar region and retention spikes to retain acrylic or composite teeth.



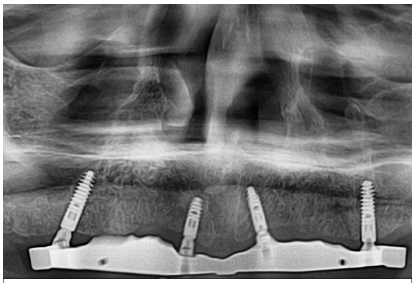
24. The completed 2in1 bar on the master model.



25. The primary bar was tried in and the fit checked visually



26. Occlusal view of the primary bar in the mouth. A the Sheffield test was conducted to ensure a passive fit of the bar in the mouth



27. The Fit of the bar was checked radiographically before the final laboratory stages.



28. Acrylic and composite layers were bonded to the secondary framework



29. The primary bar was placed on the abutments, and the retaining screws torqued to 15 Ncm. the secondary bar was placed on top of this and the patient shown how to insert and remove the overdenture. The patient was delighted with the appearance and surprised at strength of the retention and the ease if removal.



30. The final upper ISUS 2 in 1 bar and lower overdenture in place. The patients edentulous ridges have been brought into function and he is tolerating the change in vertical dimension and jaw position well.

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