DITRON DENTAL
USA

Full Mouth Implant Supported Restoration with Hybrid Prostheses

Guy Levi, DDS

Dull Mouth Implant Supported Restoration with Hybrid Prostheses

Guy Levi, DDS, Los Angeles, California, USA

Dr. Guy Levi is a well-known California Board Certified General Dentist. Graduate of Tel Aviv University School of Dental Medicine, Israel. Over 15 years of clinical experience in cosmetic dentistry and full mouth reconstruction, surgical placement and prosthetic restoration of dental implants.

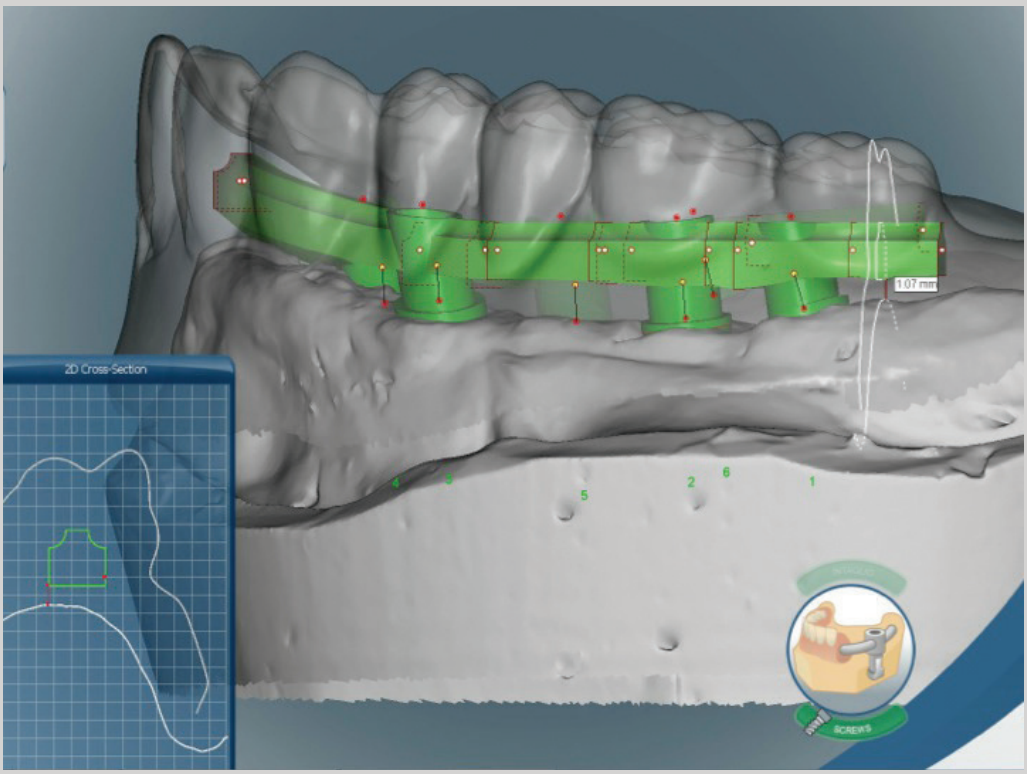
INTRODUCTION

Oral rehabilitation for a patient with major loss of alveolar bone and soft tissue resulting from severe periodontitis presents a challenge to clinicians. Bone and sinus augmentation are often required to replace loosening natural teeth with fixed prostheses supported by dental implants.

The treatment of complex clinical cases is frequently accompanied by various patient requests. High accessibility and increasing affordability of dental implants, as well as increasing patient knowledge on the subject, have popularized the concept of same day implant-supported restoration, which is achievable with temporary or even final implant supported prostheses.

The Screw-Retained Hybrid Dentures made from CAD/CAM- milled Titanium bar and the new Ivoclar Phonares NHC denture teeth is a proven replacement for removable prostheses worn by edentulous patients, offering excellent predictability, esthetics, and function. A custom acrylic framework or an acrylic duplicate of temporary denture is fabricated on the master stone model and then scanned. The scanned data of the framework and the individual implant platforms are transferred to a design station where the one-piece bar framework is finalized. After design, it is milled from Titanium for a precision fit of less than 20 microns. The industry standard Screw-Retained Hybrid Denture incorporates this bar into the acrylic processing of the denture tooth setup.

CAD/CAM technology has broadened the scope and application of those treatment options, allowing for prosthodontically-driven implant placement and ideal substructure design for optimal esthetics and biomechanics. As the computer aided design systems, surgical guides and imaging techniques optimizing implant placement evolve, implant placement becomes more and more restoratively oriented, providing rehabilitation not only of the dentition, but of the facial esthetics as a whole.



CAD/CAM-Milled Titanium Bar Design

Significant treatment planning is required in order to achieve proper complete-arch rehabilitation in cases of failing dentition. The patient may be temporarily left edentulous and using a provisional removable denture. Although many patients object to it due to functional, esthetic or psychological reasons, the approach is still useful, especially with patients already wearing a removable partial or full denture.

In the following case report, a screw-retained restoration using a custom-milled bar was performed on a 60-year old man with severe loss of dental and periodontal tissues. Although not immediate, the procedure has demonstrated excellent results in restoring not only the patient's teeth, but also the vertical dimension of occlusion and facial esthetics.

CLINICAL CASE REPORT

A 60-year old patient in good general health was accepted in my office for a full-mouth reconstruction that included extraction of all remaining teeth and a bilateral open sinus lifting, followed by placement of 6 maxillary and 6 mandibular implants *(MPI™ , Ditron Dental, Israel)* in a two stage surgery. Both jaws were restored by hybrid screw-retained prostheses upon milled Titanium bars.

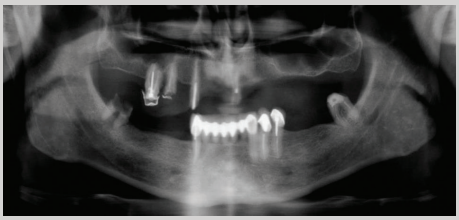


Fig. 1: Initial Condition -Panoramic X-Ray

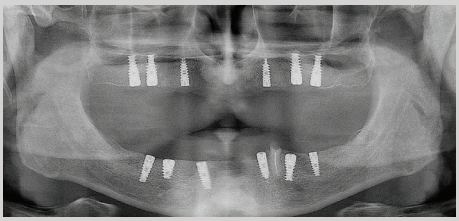


Fig. 2: 6 months after bilateral open sinus lifting and implants placement

Fig. 3 a-b: 6 weeks after implants exposure and extraction of tooth #34

Fig. 4a-b: Straight multi unit abutments installment (torqued,30N/sm) on the implants

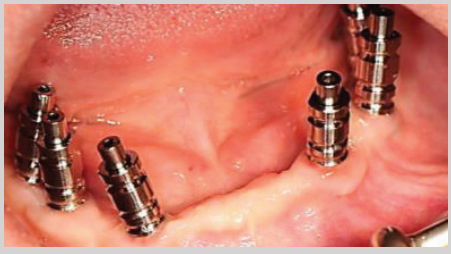


Fig. 5: Impression coping for final open-tray impression

Final impressions were taken with Impregum at the multi- unit abutments level using a custom acrylic tray. The copings were splinted with Pattern Resin, and analogs of the multi-unit abutments were installed on the impression.

Fig. 6a-c: Mandible

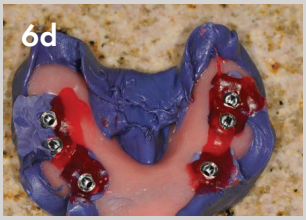
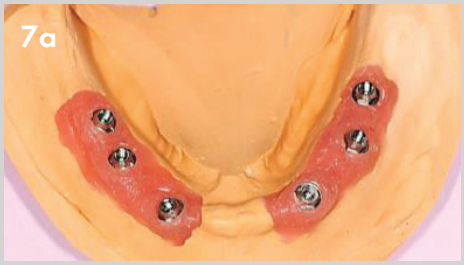


Fig. 6d-e: Maxilla



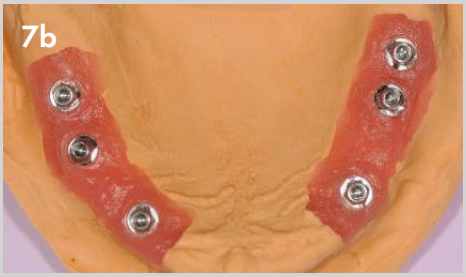


Fig. 7a-b: Final Working Models (Mandible and Maxilla)

Fig. 8a-c: Temporary metal reinforced screw retained acrylic dentures were created using temporary Titanium cylinders;

Fig. 9a-e : A Kois deprogrammer was used to find the proper centric relation of the patient. Bite registration was taken with the deprogrammer.

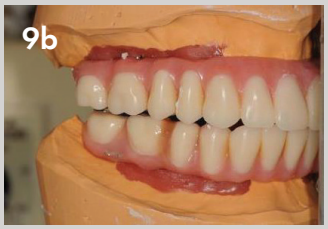


Fig. 10a-c: Kois Facial Analyser and Kois Laser Track used to find a facial midline and to ensure a proper position of upper master stone model in the articulator *(Panadent)*

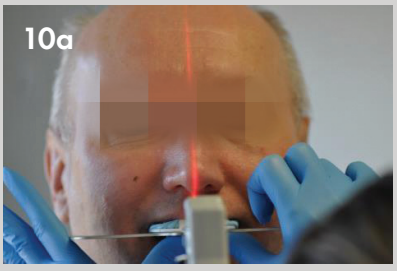


Fig. 11a-c: Final articulation using temporary screw retained dentures and bite registration with Kois deprogrammer

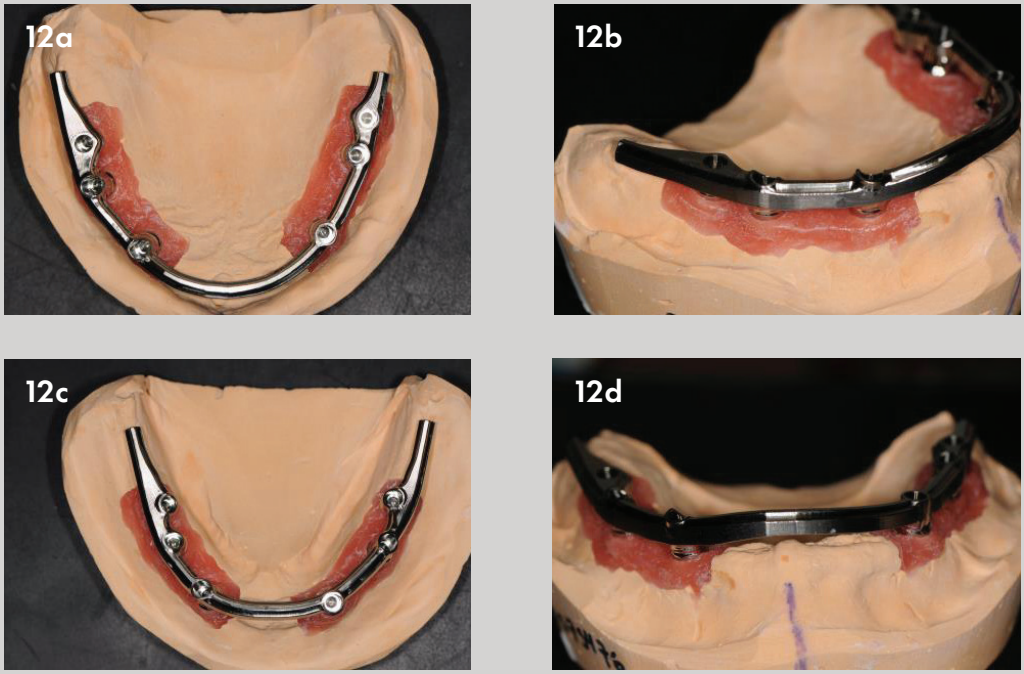


Fig. 12a-d: The dentures setup and the stone models were then scanned in order to create custom made, computer-manufactured Titanium bars for both jaws. The bars were designed and milled using a commercially available computer aided system *(Nobel Procera)*.

Fig. 13a-h: The final prostheses were then manufactured and delivered

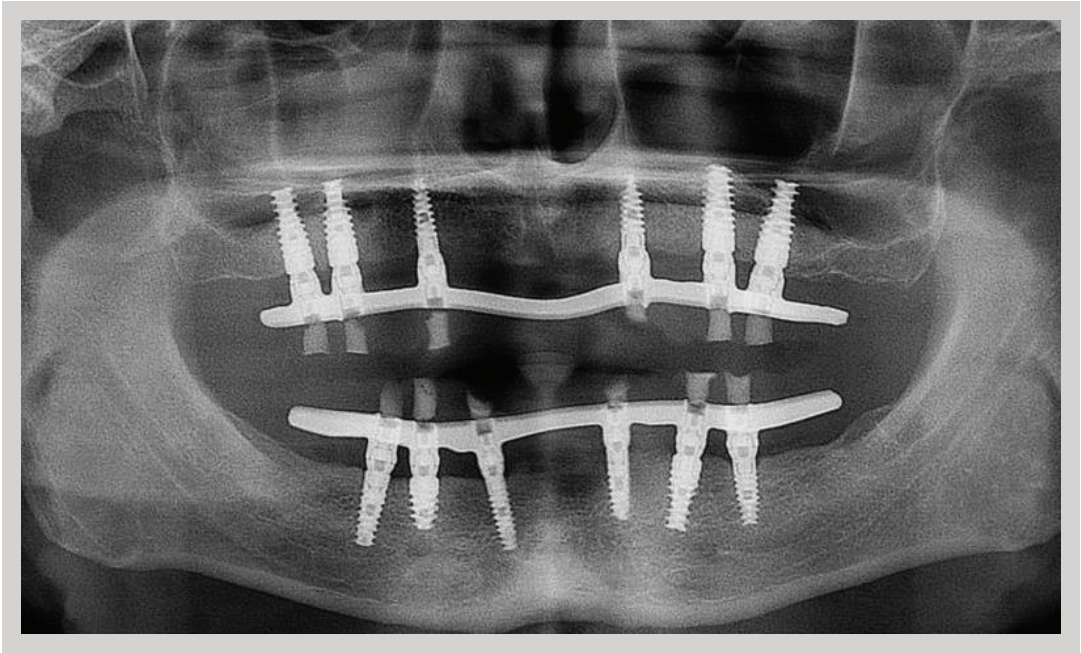


Fig. 14: Final Panoramic X-Ray

CONCLUSION

This clinical report demonstrates the use of CAD/CAM manufactured bars and screw-retained dentures for full-mouth restorations, including rehabilitation of facial esthetics. A staged approach proved useful here, providing the patient with the temporary screw retained dentures helping to restore his occlusal vertical dimension and to achieve excellent esthetic and functional results.

DITRON DENTAL
USA

For More Information:

www.ditrondentalusa.com
Tel: 844-434-8766
555 Corporate Drive, Suite 160
Ladera Ranch, CA 92694

STUDY-03/ver01