

Immediate Full Mouth Restoration Using Implant-Supported Fixed Hybrid Prosthetics

by Corbin Partridge and Brent Garrison

Initial Situation

A 49 year old woman with an unremarkable medical history presented for a full mouth extraction. Severe periodontal disease was present in addition to mobile teeth and noted bone loss (Figs. 1, 2). She indicated that she wanted to have an implant-supported fixed prosthesis in order to avoid having to wear traditional dentures long term.

Treatment Plan

A CT scan was performed and converted into implant planning software. Upon examination of the CT scan and reconsultation with the patient, it was determined that four implants in each arch

would be placed to support a fixed prosthesis. Using the converted scan, the implant sizes and locations were planned for both the mandible and the maxilla using the implant planning software. Four Straumann® Bone Level implants¹ were planned for the maxilla and four Straumann® Soft Tissue Level implants² were planned for the mandible (Figs. 3, 4). The posterior implants in the areas of #14 and #25 were angled to avoid the sinus and still provide for first molar occlusion in the final prosthesis. A guided surgical stent was then ordered through the software for the maxilla. The referring office supplied the immediate denture prior to surgery. The patient was scheduled for surgery approximately one month after the second consultation to allow for creation of the stent and immediate dentures.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6

Surgical Procedure

The initial phase of the surgery involved removing all of the existing teeth with the exception of the #38 and #48, due to nerve involvement. The patient was sedated and the teeth were extracted as atraumatically as possible. Once the teeth were removed, the maxillary arch was exposed and the surgical stent was secured to the maxilla. The osteotomies were performed through the guide using a Straumann® Guided Surgical Kit with a final drill diameter of 3.5 mm (Fig. 5). Stabilization pins were used to secure the stent while other osteotomy sites were prepared. The four Straumann® Bone Level implants were then placed with primary stability using a hand piece at 35Ncm (Fig. 6). Sutures were used for ridge closure in a continuous and interrupted fashion. Attention was then directed to the mandible, where osteotomies were performed in the areas of #36, #33, #43 and #46. The Standard Plus implants were placed in the anterior sites #33 and #43. The Regular Neck Tapered Effect implant was placed in the area of #36 and the Wide Neck Tapered Effect implant was placed in the area of #46 (Fig. 7). All implants were placed with primary stability

using a hand piece at 35Ncm. No sutures were required as the mandibular ridge was not exposed.

Prosthetic Procedure

Immediately after the implants were placed, impression posts were attached and impressions of both arches were taken. After the impressions were taken, healing caps were placed on all implants, the impressions and immediate dentures were sent to the lab, and the patient left the office. Using the impressions, the lab converted the immediate dentures into screw retained immediate prostheses, which were heat cured overnight (Figs. 8–10). The patient returned to the office the next day for placement of the provisional prostheses. The healing caps were removed and the appropriate abutments were placed. The maxillary prosthesis was placed over the abutments and attached using four screws, with the mandibular prosthesis fixed in a similar fashion (Figs. 11, 12). The patient's bite was adjusted using a handpiece with a denture bur. Once the adjustments were finished and the patient was satisfied with her bite, a temporary filling material was placed in the screw holes of the prostheses and final x-rays were taken (Figs. 13–17). The



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11



Fig. 12

patient was given instructions for post-op hygiene and told not to chew for eight weeks to allow for proper integration, after which a limited soft-chew diet was recommended. This is recommended due to the limited strength of the provisional prostheses, which serves a more esthetic rather than functional purpose.

Outcome

The patient returned to the office for her one week check, and was healing well. She will wear the provisional fixed prostheses for approximately six months, allowing the ridges to form fully and heal. At this time, she will return to the office for final impressions, which will be used by the laboratory to create the permanent bar retained prostheses. Combining the milled bar-retained prostheses with the splinted Straumann® SLActive® implants will result in a strong and permanent alternative to traditional dentures.

¹ 4x Straumann® Bone Level Implant RC Ø 4.1, 12 mm SLActive. ² 2x Standard Plus RN Ø 3.3, 12 mm SLActive/1 x Tapered Effect WN Ø 4.8, 12 mm WN/1 x Tapered Effect RN Ø 4.1 x 10 mm)



Fig. 13



Fig. 14



Fig. 15



Fig. 16



Fig. 17



Corbin G. Partridge, DMD

Oral and maxillofacial surgeon. Full-time private practice at Northeast Oral and Maxillofacial Surgery in Indianapolis, Indiana. He has published several papers in both the Journal of Oral and Maxillofacial Surgery and the Journal of the Indiana Dental Association. He served in the U.S. Army as the Executive Officer of the Head and Neck Surgery Team with the 47th Combat Support Hospital in Mosul, Iraq during Operation "Iraqi Freedom" 2005–2007. He is an ITI member.

cpartridge@neomsindy.com



Brent T. Garrison, DDS, MSD

Oral and maxillofacial surgeon. Full-time private practice at Northeast Oral and Maxillofacial Surgery in Indianapolis, Indiana. He has published several articles and given numerous presentations on all aspects of oral and maxillofacial surgery. He has served terms as President of the Great Lakes Society of Oral and Maxillofacial Surgery, the Indiana Society of Oral and Maxillofacial Surgeons and the Indianapolis District Dental Society. He is Assistant Clinical Professor of Oral and Maxillofacial Surgery at the Indiana University Medical Center. He is an ITI member.

bgarrison@neomsindy.com



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STRAUMANN GUARANTEE

International Headquarters

Institut Straumann AG
Peter Merian-Weg 12
CH-4002 Basel, Switzerland
Phone +41 (0)61 965 11 11
Fax +41 (0)61 965 11 01

North American Distributors

Straumann USA, LLC
60 Minuteman Road
Andover, MA 01810
Phone 800/448 8168
978/747 2500
Fax 978/747 2490
www.straumannusa.com

Straumann Canada Limited
4145 North Service Road, Suite 303
Burlington, ON L7L 6A3
Phone 800/363 4024
905/319 2900
Fax 905/319 2911
www.straumann.ca