

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

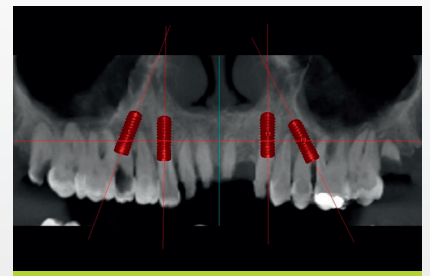


Fig. 3

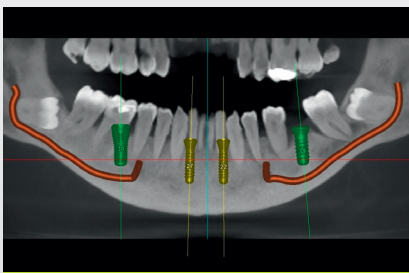


Fig. 4

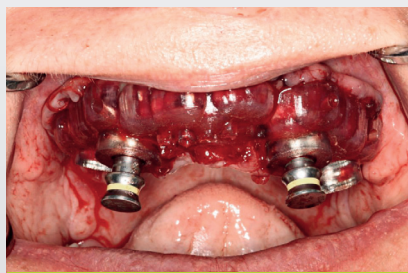


Fig. 5

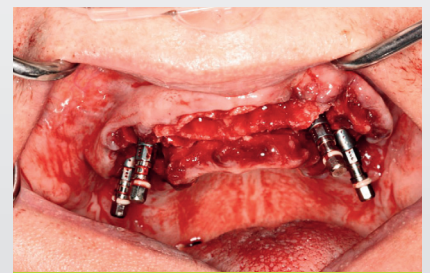


Fig. 6

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

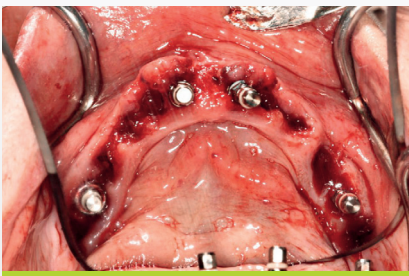


Fig. 7



Fig. 8



Fig. 9



Fig. 10

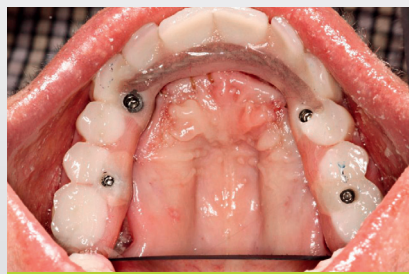


Fig. 11

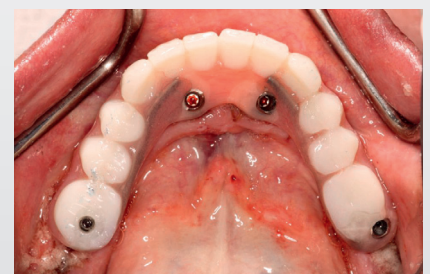


Fig. 12

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



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