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Dental Implants and Fixed Restorations in Three Hours ... Not Three Years

By Andrei Mark, D.D.S., Board Certified in Oral and Maxillofacial Surgery

Recently, an 81-year-old gentleman in good medical health presented to my office with failing mandibular dentition. He had several deteriorating mandibular incisors, as well as several crowns in pretty bad shape. He was wearing a bilateral posterior partial-denture for a long time and therefore had developed saddle defects bilaterally. After taking a CT scan it was apparent that he had a full maxillary arch rehabilitation, with dental implants placed by a different surgeon somewhere else. The implants appeared to be stable, but the porcelain in the anterior region had chipped and the vertical dimension of the central incisors was 2 to 3 millimeters too short. When I questioned the patient about the maxillary reconstruction, he told me it took him three years to be completed. When I mentioned that I wanted to restore his mandible with dental implants, he was a little hesitant, because, at 81 years old, he was not sure that he could afford to wait three more years for the completion of the next restoration. When I told him that we could probably accomplish his lower arch rehabilitation in three hours he was absolutely ecstatic.

The treatment plan called for extractions of all the remaining lower teeth (even the ones that could be saved) and immediate implant placement with posts and an immediate acrylic temporary roundhouse bridge. This brings us back to the concept of saving single teeth between dental implants. (I had mentioned this concept in my previous editorial column.)



Pre-Op scan



Post-Op scan

In order to understand how to deal with a single-tooth or several restorable teeth, we want to ask the following question: What is the final restoration that we are trying to accomplish, and how is a single tooth or multiple salvageable teeth going to improve or fit into the final restorative plan? For the best long-term predictability, it is best to create a roundhouse

bridge using six to eight implants that are fully supported; otherwise, you have a bridge broken up by individual crowns on natural teeth. A single tooth saved between implants, that has been restored with a crown, is very likely to fail due to a cavity, periodontal disease, irreversible pulpitis or orthodontic root movement, usually intrusion.

After the treatment plan was presented to the patient and accepted, a full set of articulated models were obtained and sent to the lab for fabrication of an acrylic temporary round-house bridge for the lower arch. The inside of the bridge was troughed to accommodate multiple mesiodistal positions of the future implants.

At the time of the surgical visit, the patient was pre-medicated with 2g of amoxicillin and local anesthesia was obtained in the usual manner using lidocaine with epinephrine 1 to 100,000. The root tips were extracted using the EXTRACTOR from Meisinger. This is an atraumatic extraction system using a pin that is inserted in the pulp chamber and a pulley system that attaches to the pin via a cable. A vise-like screw pulls the cable when rotating the large knob. I love the system because it gives me the ability to extract difficult root tips without a flap and bone removal.

The implants used in this case are part of the Seven implant system from MIS Implants Technologies Inc. (Fair Lawn, NJ). This implant has an internal hex connection with an aggressive thread design that offers excellent initial stability. The bone above the inferior alveolar nervehead resorbed, due to long-term denture wear. Therefore, the decision was made to place longer implants between the two mental foramina and also use shorter, but wider implants (5x8) in position 29 and

(5x10) in position 21. The canine positions were treated with immediate implants (5x13) because of the larger diameter of the extraction sockets. In addition, position number 28 was treated with a wide-diameter implant (5x13) because the extraction socket and available bone could accommodate it. Position 23, 25 and 26 were treated with standard-diameter implants (3.75x13) since the bone was narrow. Platelet rich plasma (PRP) mixed with autologous bone chips removed from the drilling process was used to fill in the postextraction defects. PRP is obtained from the patient's own plasma. In addition, fibrin matrix helps keep the graft together with multiple platelet-derived growth factors to enhance healing.

All the implants received straight titanium abutments, which were prepped for parallelism and the previously fabricated acrylic temporary was filled with acrylic and seated over the abutments. The temporary was then removed and reseated several times while the acrylic was hardening, in order to ensure that it would not to lock on to the abutments. After trimming and polishing, the temporary bridge was cemented with strong cement (Duralon). In order not to overstress the implants, only a small cantilever was placed bilaterally. Once the implants are osseointegrated, a larger cantilever may be added.

The procedure took approximately three hours and the patient was extremely satisfied. At his one-week follow-up, the gingiva looked healthy and pink and the patient had no discomfort whatsoever. He plans on going back to his original dentist to have the maxillary bridge remade.

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Manufacturer Profile

MIS Implants Technologies, a newer company in the U.S. market, has been manufacturing implants for over 12 years and currently sells products in over 50 countries. The company has a reputation for offering innovative surgical kits and implant products that are often compatible with other implant systems. Kits include The Abrahami Drill Guide for optimal spacing and parallelism between consecutive implants, the Bone Compression Kit to enhance initial stability when placing implants in soft bone, as well as drill stoppers and bone harvesting drill sets.

MIS offers a two-stage internal hex implant called the Seven and the Mistral, a single-stage implant that has a Morse-taper,

internal octagon connection. These implants feature a unique thread design, are packaged with a sterile, single-use final drill and most times include the restorative components to complete the case. The final drill allows for the evaluation of the implant without the need for a new surgical kit and the inclusion of restorative components offer value and cost reduction to the restoring clinician.

To receive a catalog or schedule an in-office appointment with a local representative, call 1-866-797-1333 or to learn more visit www.misimplants.com.