

TECHNICAL PROFILE

Dentistry for an Aging Population: The ERA Implant Overdenture

Although there has been a huge influx of new materials and techniques to provide both the esthetic dentist and patient more economical and predictable results, few of these products have been geared toward the denture patient and dentist. Currently, denture patients rely on dental adhesive. Many dentists choose to not see these patients because frustration tends to be the end result. As the percentage of the US population older than 50 years grows, so does the number of edentulous people. This is partly a result of the aging “baby boomers” as well as the fact that people are living longer. To help this group, the ERA Implant provides a predictable and economical tool that can help reverse the frustration felt by both denture patients and dentists.

CLINICAL CASE

The patient presented with few expectations, a lot of frustration, and hope that there was a solution to her problem. She was not concerned about esthetics or the lack of support that her denture offered. Her main concern was to be free from

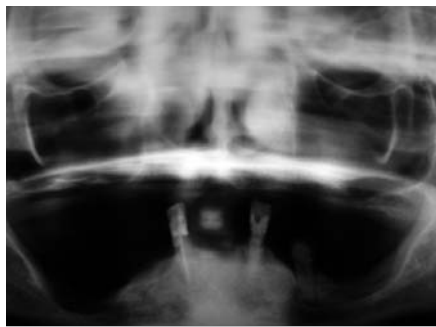


Figure 1 Radiograph of the patient's dentition on presentation.



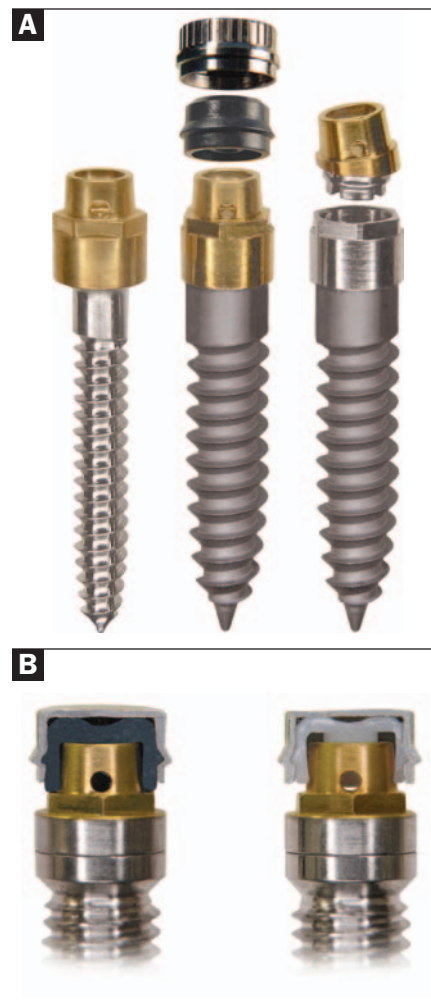
Figure 2 Frontal view of the patient's dentition on presentation.

pain while wearing her dentures. She presented with an upper denture with very little retention, a lower partial denture that had been retained by a periodontally hopeless second bicuspid and her two nonparallel cuspids that had been endodontically treated and restored with o-ring copings. Unfortunately, her right cuspid fractured below the level of the crestal bone and, shortly after, her left cuspid fractured at the gingival crest. Therefore, the pain the patient was experiencing stemmed not only from her bicuspid, but also from the denture impinging on the neurovascular bundle, which was caused by significant bilateral atrophy of the mandible (Figures 1 and 2). On examination, we found that the upper denture instability was largely a result of the lower partial. This patient had already been to two other dentists who suggested extracting the remaining lower dentition and fabricating a lower denture. One also told her that for successful implant placement, bone would likely have to be removed from her hip and grafted to create enough bone for placement.

The patient had searched the internet and found information on the ERA Implant (Figures 3A and 3B). This led her to our office, hoping she would be a candidate for the procedure that would give her the stability she had lost as well as rid her of the pain she had found. Like most denture patients, she was not concerned with esthetics or retention. All she wanted was stability.

Treatment Options

After taking impressions, occlusal records, and new radiographs, a treatment plan was formulated. Because her present partial (even when stabilized), had significant occlusal problems, we presented her with two options. The first involved making a new upper and lower denture, placing mandibular implants, and relining the lower 2 to 3 months later. The second option was to place the mandibular implants, but for her to not wear her lower denture during the healing period. Because the patient had already not worn her partial for 2 months (since the teeth fractured), she selected the second



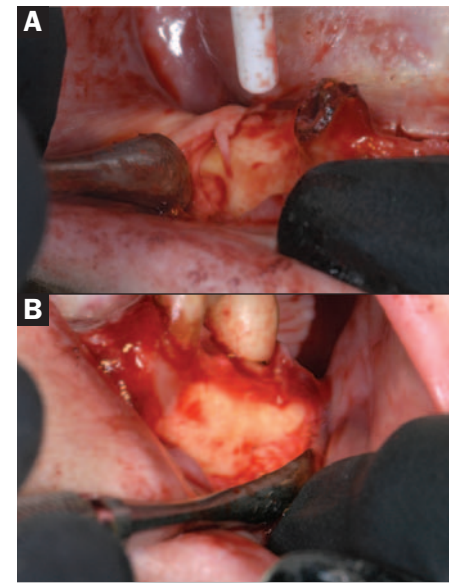
Figures 3A and 3B The ERA Implant.

option. At this point, the patient began asking about esthetic options. An additional concern was pain during and after the procedure.

Treatment

The patient was sedated with nitrous oxide, .25 mg halcion, and 10 mg valium. She was given a two-week prescription for 300 mg of clindamycin, starting 2 days before the procedure, and a dose pack of methyl prednisolone that she started the day of the procedure.

After local anesthesia was administered, the remaining bicuspid and 2 cuspids were removed and the sockets curetted of all granulation tissue. A crestal incision was made from just distal to the left second bicuspid to the same position on the right side. The facial flap was elevated via blunt dissection subperiosteally and each mental foramen was identified (Figures 4A and 4B). A surgical carbide bur in a high-speed handpiece and copious irrigation were used to remove bone along the ridge to create a broader ridge buccolingually. This also reduced the socket height. These changes allowed the implants to be placed within boney confines. With irrigation, the 1.6-mm bur was used in the lower right cuspid residual socket to create a 15-mm-deep osteotomy. It was followed by the 3.25- x 15-mm countersink/drill. This bur creates an osteotomy 2.5 mm in diameter x 12 mm deep, while making a flat spot on the surface of the bone that is 3.4 mm in diameter (Figure 5). This allows the 3.25-mm x 15-mm self-tapping ERA Implant to engage the bone for



Figures 4A and 4B The facial flap was elevated via blunt dissection subperiosteally and each mental foramen was identified.



Figure 5 The countersink/drill bur creates an osteotomy 2.5 mm in diameter x 12 mm deep, while making a flat spot on the surface of the bone that is 3.4 mm in diameter, which allows the implant to engage the bone for maximum stability.



Figure 6 The zero-degree female is snapped into the socket of the implant and a paralleling device is seated. This device can be moved into various positions.

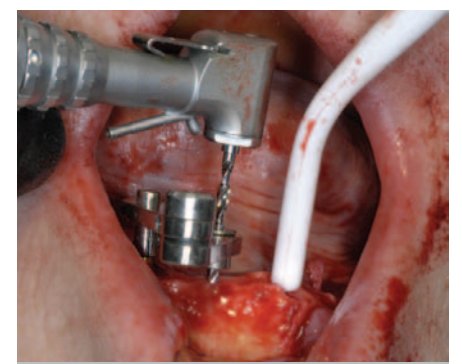


Figure 7 The paralleling device ensures that the next whole is drilled parallel to the first.

maximum stability. The implant could not be placed closer than 4 mm from seating using finger pressure; therefore, the implant was removed and a 3.25 tap was used to a depth of 12 mm. This allowed the implant to be placed within 2 mm of seating using the hand-driven insertion tool. The implant was completely seated using the socket and ratchet wrench with slow finger pressure. A zero-degree female was then snapped into the socket of the implant and a paralleling device was seated on the implant. This device can be moved into various positions to make sure that we would drill in the bony confines and remain at least 3 mm anterior to the 2 mental foramen (Figures 6 and 7). The 3 anterior sites and 1 posterior site were then rechecked with the paralleling guides to verify that they were, in fact, parallel. The 1.6-mm bur was used to extend the holes to 15 mm on the middle and the residual extraction site of the cuspid. These were immediately enlarged with the 3.25- x 15-mm countersink/drill. Finally the 3.25-mm tap was used as on the first implant. Two zero-degree, 1-piece 2.2-mm ERA Implants were placed in the area of the bicuspids and three 3.25-mm two-piece angle correction implants, with zero-degree females, were placed anteriorly (Figure 8). The micro ERA overdenture metal jackets with black male inserts were placed over all 5 implants and 5 "O" chromic sutures were used to close the incision (Figure 9 and 10).

The patient had not worn her lower partial for months and decided to wait until after healing to have the lower overdenture made. At that time, a new upper denture would also be constructed. Two months after surgery the new upper and lower dentures were constructed. Because the patient now had a stable and retentive lower overdenture, her bite could be opened, which meant that the lower third of her face was restored to its original proportion. When she was interviewed after the completion of the restoration, the patient was thrilled with her new appearance and confidence, not about the loss of pain, which was her primary reason for having the implants placed.

CONCLUSION

The implant-retained overdenture is not just a nice alternative to complete dentures, it is a significant improvement to a patient's quality of life. For many patients this is necessary treatment to give them proper function and esthetics, while freeing them from pain. The ERA Implant offers patients those benefits at a fraction of the cost of traditional implant restorations. This means that we have a tool that will allow us to provide satisfaction to many more patients.

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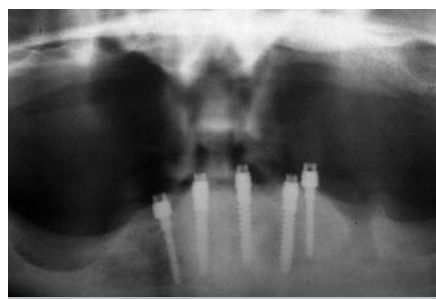


Figure 8 Radiograph of the placed implants.

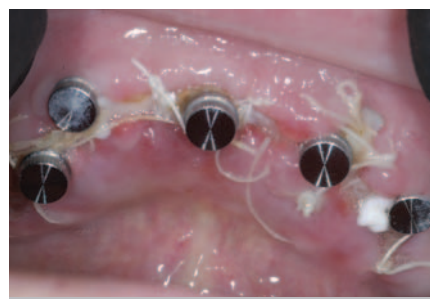


Figure 9 The micro ERA overdenture metal jackets with black male inserts were placed over all 5 implants and 5 "O" chromic sutures were used to close the incision.



Figure 10 ERA black males were used to protect the attachments during the healing period.