Replacing a failing dentition
with new technology

By Dr. Ara Nazarian, USA

Having the ability to take a patient from start to finish in a fewer number of appointments within your practice allows you to position yourself as a provider that can fulfill your patient’s surgical and restorative needs. With the proper training, a dental provider may provide extraction, grafted, and implant placement within one appointment at one location. Not only does this allow you to reduce the amount of visits for the patient, but this type of service also helps maintain the cost to the patient since they are not seeing multiple dental providers. Most importantly, this enables the dental provider full control of the surgical and prosthesis outcome. Depending on the patient’s desires, the clinical conditions of the oral environment present and the skills of the provider, a dentist may choose to extract teeth, level bone, and graft with guided dental implant placement within his/her dental practice. A patient presented to my practice for a consultation wanting to return her smile (Fig. 2). She complained of generalized discomfort in her entire dentition, probably due to the rampant caries and infection that was already present (Figs. 2-5). Having already visited an orthodontist for an evaluation, she was very frustrated with conflicting treatment options offered. Either the suggested treatment would require multiple surgical and restorative visits that would extend for a very long time or dental treatment would require a team approach where little coordination by dentist and specialist was communicated to the patient. Since many of these options did not appeal to her, the patient decided to have me present comprehensive treatment that would include extractions, bone leveling, grafting, dental implant placement, immediate reconstruction, and prosthetic rehabilitation within my own practice.

When presenting cases like this to my patients, I will always use the Dine Digital Solutions (WeissTech-A Dine) Not only is this camera small, light and waterproof, it also has very effective and clear in taking close-up photos as well as full face shots. Additionally, I will always offer my patients a third party payment option like the Lending Club (San Francisco, CA) for their treatment. Lending Club Patient Solutions provides patients great funding flexibility with very low rates and high approvals. Most of all, the support from their staff has been very professional.

Planning

A CBCT scan was taken to accurately treat the patient since they are not seeing multiple dental providers. Most importantly, this enables the dental provider full control of the surgical and prosthesis outcome. Depending on the patient’s desires, the clinical conditions of the oral environment present and the skills of the provider, a dentist may choose to extract teeth, level bone, and graft with guided dental implant placement within his/her dental practice. A patient presented to my practice for a consultation wanting to return her smile (Fig. 2). She complained of generalized discomfort in her entire dentition, probably due to the rampant caries and infection that was already present (Figs. 2-5). Having already visited an orthodontist for an evaluation, she was very frustrated with conflicting treatment options offered. Either the suggested treatment would require multiple surgical and restorative visits that would extend for a very long time or dental treatment would require a team approach where little coordination by dentist and specialist was communicated to the patient. Since many of these options did not appeal to her, the patient decided to have me present comprehensive treatment that would include extractions, bone leveling, grafting, dental implant placement, immediate reconstruction, and prosthetic rehabilitation within my own practice.

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Once the patient was completely sedated and anaesthetized, the teeth were extracted in a systematic manner, working in sections at a time starting from the anterior maxillary teeth. Acting like a modified class I lever, the Physics Forces (Golden Dental Solutions) were used to atraumatically extract the teeth with the goal of try not to disturb the underlying bone. The beak of the forces was placed on the lingual cortical part of each tooth, where the soft bumber portion was placed on the buccal alveolar ridge at the approximate location of the mucogingival junction. During the extraction process, the beak grasps the tooth and the bumber acts as the fulcrum. Extractions were accomplished with only slight wrist action in a buccal direction taking about 40 to 60 seconds each depending on the tooth morphology and density of bone.

Once all the maxillary teeth were extracted, the alveolar crest was leveled 2–3 mm apically following the parameters set by the bone leveling guide with the AEU-7000 surgical motor/handpiece (Aespecto), so that the patient’s transition line from the ridge to the prosthesis would not be visible when the patient smiled. Once completed, the surgical drilling guide was inserted and the sites for the implants were initiated with the Hiossen Ostem Guided kit (Fig. 6). In the upper arch, six 4.0 mm diameter ET III SA dental implants were placed in the areas of teeth 84, 6, 9, 11 and 13 to support an All on Six restoration. The most distal implants were angled in order to avoid the maxillary sinus cavities and any augmentation in that area.

In the lower arch, several different...
widths (3.5, 4.5 and 5.0 mm) of the ET III SA dental implants were used due to various widths of bone available in the remaining ridge. Here, the tooth areas that would have dental implant placement included 19, 22, 23, 25, 27 and 30.

A baseline ISQ reading was taken of these implants utilising the Osstell ISQ unit. Since the initial readings were all above 65 and the quality of bone after leveling was good, temporary cylinders (Hiossen) were placed on the multiunit abutments (Hiossen) for immediate provisionalisation. Any residual areas around the implants or in the sockets were grafted with a pure blend of cortical mineralised and demineralised bone grafting material to optimise the area for regeneration. Primary closure was achieved by suturing the tissue with resorbable sutures.

The immediate provisional restoration was tried in to insure a passive fit over the temporary abutments (Fig. 9). Once confirmed, block-out material was placed to avoid the restoration from locking on and chairside hard denture mishandle material (Rebase II, Tokuyama) placed within recesses around the temporary abutments to pick up the restoration. After the material completely set, the immediate provisional restoration was removed and any access material trimmed and polished with the Torque Plus (Aseptico) lab handpiece and acrylic bur (Komet). A similar series of steps was utilised for the mandibular arch. In fact, the ISQ values were even higher due to the type and quality of bone present in the patient’s mandible. At this point, a Panorex was taken to confirm the placement and position of the dental implants with their corresponding multi-unit abutments and temporary cylinders.

Seven days postoperatively the patient returned with very little discomfort, swelling or bruising. She was very pleased with her fixed provisional restorations (Fig. 10). Now that the patient was no longer anaesthetised, the occlusion was checked again to confirm there were no interferences in lateral and protrusive movements. The next step in her treatment would consist of impressions for the definitive upper and lower restorations approximately 4 to 5 months postoperatively. Approximately 16 weeks after implant placement, the patient returned for the prosthodontic phase of her treatment. The gingival tissue around the implants looked healthy, so the healing caps were removed and the implants evaluated. Each implant was tested with the Osstell ISQ (Osstell, Linthicum, Md.) implant stability meter. Since the ISQ readings were all very high (above 75), impressions (Hiossen) were inserted on the multi-unit abutments.

Since all the dental implants were well integrated, impressions were taken for the definitive restorations. For both arches, impressions were taken using Instant Custom C&B Trays (Goodfitt) with a heavy and light body vinyl polysiloxane impression material (Take I Advanced, Kerr).

Bite relations was accomplished by picking up clear duplicates of the provisional restorations (Fig. 9). Instructions for size shape and color for the definitive restorations was forwarded to the dental laboratory and any changes indicated easily communicated to the dental laboratory technician. A PP3 prosthesis would be fabricated for the patient’s upper and lower restorations. The pink gingival areas of this prosthesis type were needed to reconstitute the maxillary and mandibular tissue contours, as substantial bone leveling was required to even out the patient’s smile.

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Celtra Duo (ZLS) blocks, Prime&Bond universal™ Adhesive, and Calibra® Ceram Cement were designed to enhance and strengthen the individual benefits each of them provides, resulting in an easy-to-use system that streamlines the restoration process.

Celtra Duo (ZLS) blocks
• Restoration longevity of Celtra Duo (ZLS) is ensured when used with Prime&Bond universal Adhesive and Calibra Ceram Cement
• Firing is optional; choose either fire and seat or polish and seat

Prime&Bond universal Adhesive
• No need to use a self cure activator when used with Calibra Ceram Cement
• Low film thickness to allow passive seating of the crown

Calibra Ceram Cement
• One-step curing when used with Prime&Bond universal Adhesive
• 10-second tack cure window and 45-second gel phase ensures an easy, no-stress cleanup
With improvements in materials and advancements in CAD/CAM technology (Fig. 10), full-arch prostheses can now be precisely milled from metal and ceramic, enabling aesthetic and functional restorations that will last a lifetime. This review will look at the treatment of two patients requiring extensive restorations, one female and one male, who presented to the dental clinic complaining of increased discomfort from their two first molar teeth when biting. Both patients had experienced pain over the last week and reported difficulty chewing solid food.

### Case characteristics

**Gender:** Female

**Age:** 39 years old

**Area of restoration:** Upper and lower first molars

**Reason for treatment:** Patient wanted a long-lasting aesthetic restoration in one visit due to busy work schedule.

### Introduction

With the information now available, patients can now enjoy the benefits of high-quality, long-lasting restorations in a single visit.

### Case Report

#### Patient 1

**Reason for treatment:** Patient wanted a long-lasting aesthetic restoration in one visit due to busy work schedule. Although the pain she was experiencing was slight, there was a need for some form of intervention.

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**Case characteristics:**

- **Age:** 39 years old
- **Gender:** Female
- **Area of restoration:** Upper and lower first molars
- **Teeth numbers:** 16, 46
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#### Introduction

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#### Patient first contact

A 39-year-old woman attended the dental clinic complaining of increased discomfort from her two first molar teeth when biting. She had been experiencing this discomfort over the last few months, but her busy work schedule had made it difficult to see a dentist.

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#### Treatment with MyCrown

The amalgam restorations were removed with high volume suction. English medical water flow with High speed hand piece. Appropriate supple- ments were given to the patient to assist in decontamination and flushing of the mouth. The patient was referred for further care.

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#### Conclusion

Computer-generated 3D virtual treatment plans allow the dental provider to train or accurately place dental implants efficiently and effectively. With a variety of different software and associated surgical instrumentation available, dental implant diagnosis and treatment has become more simplified.

### Conclusion

This case study demonstrates the ease and efficiency of providing high-quality aesthetically superior restorations with minimal inconvenience to the patient. The patient was given the option of having composite resin placed instead of using MyCrown technology and this would have taken longer to provide a poorer quality restoration. It’s a no-brainer for the patient and for the dentist.