off the FIX on SIX restoration. The hygienist will then completely clean the implants, the restoration, and the surrounding tissue and easily reinsert the restoration without patient discomfort. This FIX on SIX procedure is completed in a fraction of the time that would have been required using the All-on-4 technique. The success rates of the immediate loading mini dental implant endosseous procedures are competitive with the All-on-4 technique. If one of the mini dental implants were to fail with a FIX on SIX restoration, the failed mini implant can be easily replaced with a new mini implant and o-ring housing placed in the same or different location. In addition, the FIX on SIX restorations are considerably more affordable than the All-on-4 with approximately a 50% to 60% savings. Consequently, the FIX on SIX restorations are more desirable to the patient due to their affordability, greater comfort, reduced treatment time, and the less invasive nature of the procedure.

Fixed partial dentures are commonly supported by mini dental implants to provide a natural, aesthetic appearance for the patient. In recent years, zirconium dioxide (zirconia) frameworks have been used in dentistry for fixed restorations. The introduction of zirconia has allowed the fabrication of metal-free prostheses via CAD/CAM technology. The result is improved aesthetics with increased success and reliability. There is also evidence that there is less plaque accumulation on zirconia, helping to prevent postoperative gingival problems.20 The architecture of these zirconia-based prosthetics enables superior strength and chewing resistance on the posterior teeth relative to other ceramics.21 Due to its favorable chemical composition and mechanical properties, clinicians have been eager to use zirconia in implant-supported restorations after its successful use in tooth-supported restorations.18

The following case study (Figures 1 to 15) presents a clinical report of mini dental implants with FIX on SIX technique. The use of 6 to 8 (or 10) mini dental implants allows for the functional and aesthetically pleasing zirconia fixed prostheses to be supported. Using BCCT technology, a zirconia prosthetic restoration was created and fixed over the Shatkin FLRST mini dental implants (by Intra-Lock) using o-ring housings pressed into the zirconia framework.

CASE REPORT

A 56-year-old male patient with an upper denture presented for a consult on May 15, 2013. He had come in after seeing the Shatkin FLRST television marketing campaign. At the consult, our new patient had a CT scan (using our Shatkin FLRST CBCT machine for pre-op and post-op scans) (Figure 1), treatment plan, and impressions taken for a FIX on SIX detachable-removable bridge (Figure 2). To minimize the discomfort and to eliminate the existing issues with his old denture, a zirconia bridge was prescribed and designed to fit on the mini dental implants that would be placed. Zirconia was chosen as the fabrication material due to its strength and durability and resistance to fracture. A treatment plan for placing 10 Mini DriveLocks (MDL, Intra-Lock) in the maxillary arch using the Shatkin FLRST technique for mini dental implant placement was chosen. He was asked to return in 2 weeks for his procedure and placement of a temporary bridge.

About one month later, the patient returned, signed the consent form, and treatment was begun. A local anesthetic (2 carpules of Septocaine with epinephrine [Septodent]) was administered. A CT-guided stent from Shatkin FLRST was used for this case. The position of the 20 implants was marked using a Thompson marking pen and the CT-guided stent (Figure 3). Nine Intra-Lock mini dental implants were used on the upper maxillary arch, size 3.3 mm × 13 mm at Nos. 3 to 6 and 9 to 13 and one 2.5 mm × 11 mm for No. 9. The CT-guided stent was used throughout the procedure (Figure 4), removing it between final placement of each implant, using the patented FLRST technique. When finished placing all 20 implants using the Shatkin FLRST procedure, the housings were placed, and At Luxatemp (DMG America) was used to create the temporary bridge. The patient liked the temporary impressions were taken and sent to the Shatkin FLRST Lab (Figures 5 to 8). Two prescriptions (penicillin 500 mg. Nebicillin 5) were sent to the patient’s pharmacy, and an appointment for 2 weeks was made for the delivery of the permanent FIX on SIX detachable-removable bridge.

Two weeks later, the patient returned, and the temporary was removed. The FIX on SIX detachable removable roundhouse restoration was then placed (Figures 9 to 12). The FIX on SIX restoration had good aesthetics, and the patient was happy (Figures 13 to 15). The patient was given a Shatkin Water Flosser and a Sonicare (Philips Oral Healthcare) toothbrush. These are provided as a part of the treatment to our mini implant patients for home care. These have been very successful hygiene tools to keep the soft tissues healthy and clean between checkups, when the FIX on SIX is removed.

CLOSING COMMENTS

This article presents an alternative to All-on-4 that is less expensive, less invasive and painful, and demonstrates faster results while utilizing zirconia, a strong and biocompatible dental material. FIX on SIX is a beautiful zirconia restoration that can be removed by the clinician while providing the patients with the feel and aesthetics of a fixed prostheses. Creating a fixed prosthesis that is able to withstand the occlusal forces applied while providing cosmetic appeal and patient satisfaction is an enduring task for all dentists.15 Today in dentistry, zirconia has traditionally been
used in fixed partial dentures as tooth-sup- ported restorations. A large majority of cases used zirconia as a fixed partial denture, highest success rates have been recorded, mostly higher than 95%. Zirconia’s ability to increase the durability of the prosthesis by up to 30% to 40% has made it a good candidate for use in fixed hybrid cases. The use of CT technology increases zirconia’s durability in conjunction with decreasing failure rates of these restorations, due to the industrial processing.

In this case study, the patient was dissatisfied with his upper denture because of cracks in the acrylic along the palate, and the dentures were not comfortable to wear, and food would trap under them. By designing a fixed zirconia bridge ( FIX on SIIX) instead of acrylic dentures or a hybrid acrylic fixed bridge, the patient will no longer have these negative experiences. The use of zirconia instead of acrylic increases durability of the prosthesis while also offering the comfort of fixed restoration and healthier surrounding gingival tissues.

References