Restoring the edentulous arch with BruxZir full-arch implant prosthesis

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Fixed hybrid dentures have been used to successfully restore fully edentulous patients for decades. Their durability, however, leaves room for improvement. There are three issues that can complicate the long-term success of the traditional fixed hybrid denture: The acrylic teeth tend to wear; the teeth can fracture or dislodge from the acrylic base; and the acrylic base itself can fracture. The BruxZir® Full-Arch Implant Prosthesis (Glidewell Laboratories, Newport Beach, Calif.) eliminates these issues, providing a restoration that is more durable in the long term, while sacrificing nothing when it comes to esthetics. Milled from a single block of BruxZir Solid Zirconia — an exceptionally fracture-resistant material that exhibits flexural strength up to 1465 MPa — this fixed prosthesis utilizes advanced staining and glazing techniques, coloring the prosthetic teeth to closely mimic natural dentition and the gingival areas to match the shade of the patient’s soft tissue.

Case report
The patient is a 58-year-old male with no contraindications for implant treatment. The patient had a total of 11 BioHorizons® Internal Hex implants (BioHorizons; Birmingham, Ala.) placed, including six in the maxilla and five in the mandible (Figs. 1a, b). The implants integrated for more than six months, and the patient presented for restoration of his edentulous arches.

First, preliminary impressions of the implants were made. After removing the healing abutments, closed-tray impression copings were seated. The impressions were made in stock plastic trays, and the impression copings were placed back into the impressions before the case was sent off to the laboratory. The laboratory poured casts from the initial impressions and fabricated bite blocks and occlusal rims for the centric jaw relationship (CJR) records. Each bite block contains two screw-retained temporary cylinders that allow the wax rims to be screwed down, producing a very accurate CJR. The contoured rims were returned to the laboratory with the initial casts.

Upon receiving the wax rims and jaw relation records, the laboratory and dentist decided that the patient required four multi-unit abutments in the anterior maxilla to ensure that the screw access openings were within the confines of the planned prosthesis, so at the next appointment, the patient’s healing abutments were removed, and the multi-unit abutments were transferred to the patient’s mouth and torqued into place.

Later, wax setups were tried in and evaluated for proper esthetics, phonetics, contours, occlusion and tooth arrangement.

The implant verification jig (IVJ), which precisely captures the depth and angulation of the implants in the final impression, was seated and tightened into place. After bonding the individual sections of the IVJ together, a final impression was made using an open-tray
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Fig. 2: The provisional prostheses fit well and afforded the patient a trial period to evaluate the proposed restoration for esthetics and function over a period of weeks. Note that the gingival shade was adjusted for the fabrication of the final restoration.

Fig. 3: The patient was extremely satisfied with the function and esthetics of the final restoration, which fit perfectly thanks to the precision of the CAD/CAM design process and the confirmation provided during the provisional trial period.

The final restoration was fabricated using the CAD design that was confirmed during the provisional trial period. The final prostheses were delivered without complication, exhibiting excellent fit, occlusion and esthetics (Fig. 3). The patient was exceptionally pleased with the function offered by this fixed restoration, which he should be able to enjoy for a great number of years given the extraordinary durability of BruxZir Solid Zirconia.

Dr. Ken Whelan graduated from dental school broke with $500,000 in student-loan debt. But within 10 months, the fee-for-service practice he started from scratch had generated more than $1 million. And during the next five years he surpassed $9 million — all on a part-time schedule.

According to Whelan, any dentist can achieve the same by establishing a reputation as the go-to dental expert in his or her service area. Whelan says two fundamentals of the era make that a realistic goal:

• The power of the Internet.
• Advancements in modern dentistry.

Whelan took full advantage of both fundamentals to answer this question: “How do you maintain your integrity and have a thriving practice where patients flock to you for ideal comprehensive care — not based on if you have the lowest price or take their insurance but because you’re perceived as the most respected dental leader in your community?”

Whelan tapped Internet-based resources to educate his community about oral health and advancements in dental care. Then he started helping other dentists accomplish the same, partnering with them to build many more thriving practices.

Whelan realized he had created a system any dentist could master. He labeled it the “Winning Practice Strategy,” and he packaged its eight core components into a video series. Then, of course, he built a website: www.NewLocalLeader.com.

“It’s a way to jumpstart and grow your practice by following a fresh, new direction,” Whelan said, encouraging dentists to visit regardless of their career stage. “I share everything I’ve learned about the big concepts that help you create a thriving ‘go-to’ practice as a local dental leader.”

(Source: Winning Practice Strategy)