Restoring the edentulous arch with BruxZir

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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.

The BruxZir® Full-Arch Implant Prosthesis (Glidewell Laboratories; Newport Beach, Calif.) provides a restoration that is more durable in the long term, while sacrificing nothing when it comes to esthetics.

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. 1, 2). 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 contained two screw-retained temporary cylinders that allowed 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 the patient required four multi-unit abutments in the anterior maxilla to ensure the screw access openings were within the confines of the planned prosthesis. 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.

The lab produced a fixed provisional appliance using precise CAD/CAM technology. The provisional implant prosthesis afforded the patient a trial period to evaluate the proposed restoration for esthetics and function (Fig. 3).

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. 4). 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.