Prima™ Implant System
Clinical Case Report, No. 5

Esthetic Replacement of Failing Teeth #8 and #9 Using Lifecore’s PrimaConnex® Implant System

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Surgical Diagnosis
Prior to surgical treatment, an interim removable partial denture (a “flipper”) and an implant guide splint were fabricated. At the first surgical appointment, teeth #8 and #9 were removed (Fig. 3). An allograft was placed into the sockets and a barrier membrane was placed over the grafted sites.

Following approximately 4 months of healing, the surgical site was found to have healed well (Fig. 4). Clinically, good residual ridge height and width was maintained. Radiographic evaluation gave the appearance of good bone fill in the extraction sites (Fig. 5).

Implant osteotomies were performed in sites #8 and #9 using the LifeCore Prima implant surgical kit. Care was taken not to impinge on either the incisive foramen or the adjacent lateral incisors. Parallelism was achieved using parallel pins and implant drills. The 4.0 x 13mm, regular diameter, straight, RBM textured, internal connection implants (PrimaConnex, LifeCore Biomédical) were placed into #8 and #9 (Fig. 6). Impression post screws were placed into the implants to provide immediate verification of implant parallelism. The use of the impression post screws on the implants and the implant guide stent provided by the restorative dentist confirmed proper implant angulation (Fig. 7). The implants were not placed below the hard tissue crest due to the concerns of overly elongated teeth and the ability to keep deep gingival cuffs cleanable.

The surgical site was found to heal well after about 1 month (Fig. 8A). The gingiva was healthy, pink, and free of inflammation (Fig. 8B). Removal of the healing abutment revealed a healthy gingival cuff with a natural emergence profile (Fig. 9). With the exception of blunted central papillae, good gingival contours were achieved.

Restorative Diagnosis
To meet the patient’s esthetic expectations, teeth #7 and #10 were prepared for all-ceramic crowns. Two PMMA Temporary Abutments (PrimaConnex, LifeCore Biomédical) were secured with a titanium-nitride coated screw to the implants and prepared extra-orally in order to fabricate a provisional restoration (Fig. 10). Approximately two months later, the provisional restorations and abutments were removed, and contoured impression posts (PrimaConnex, LifeCore Biomédical) were connected to the implants. Custom abutments were modified and cast with a porcelain-compatible alloy. The custom abutments were torqued to 30Nm with the Quad Driver and the four all-ceramic Zirconia restorations were cemented with self-etching adhesive cement. The final radiograph (Fig. 11) and clinical situation (Fig. 12) of the implant and prosthetic reconstruction one year post-op shows stable bone levels and healthy soft tissue.

Conclusion
Esthetic restoration of adjacent dental implants, especially in sites #8 and #9, represents among the most challenging implant cases. Immediate implant placement andatraumatic surgical design have become common and successful modes of therapy in properly selected cases.

Despite the difficulties in this case, a highly esthetic result was obtained with healthy and esthetic gingival contours, while the secure internal connection of the implant system utilized will maintain the mechanical stability of the restorations.