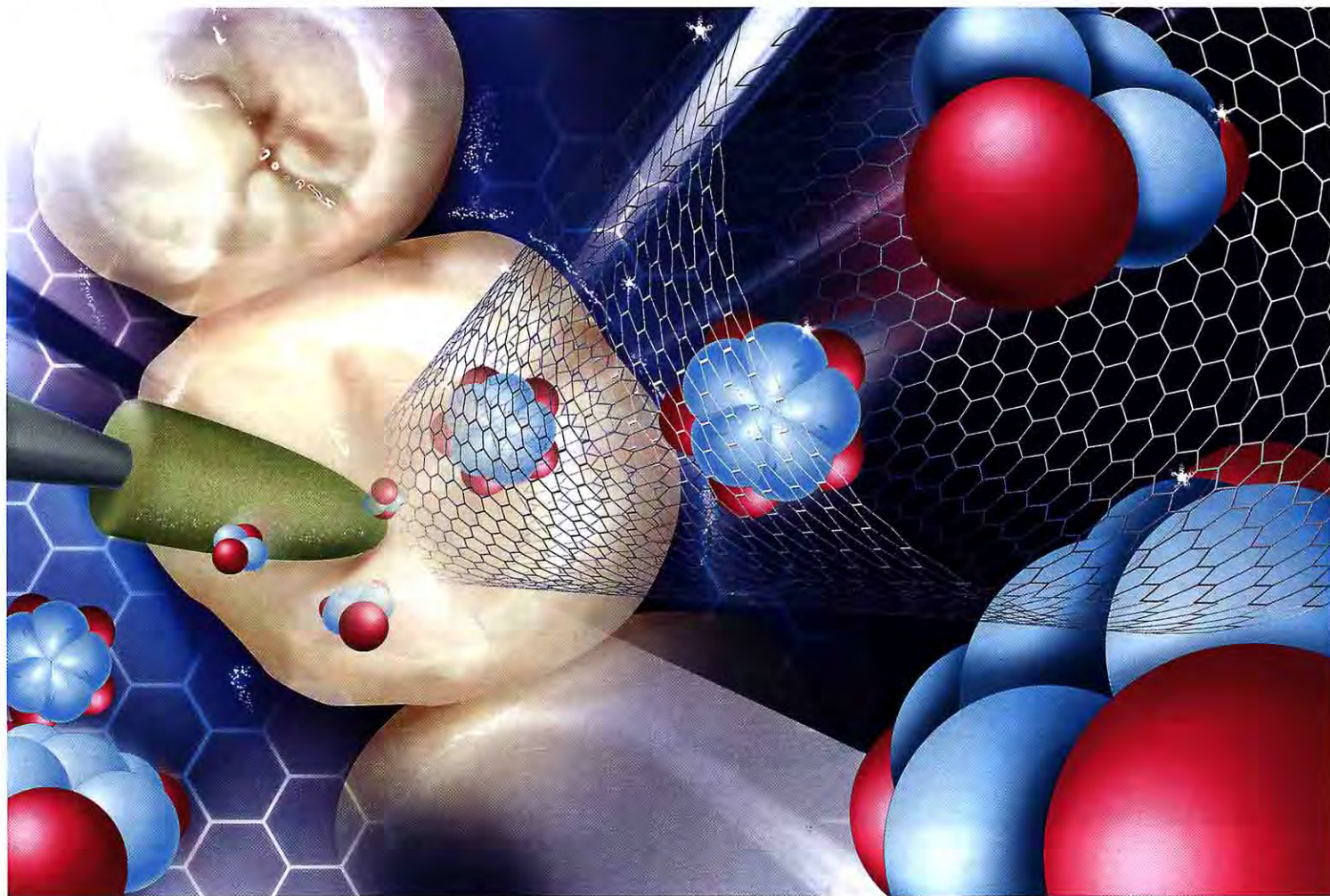


Contemporary Esthetics

AND RESTORATIVE PRACTICE®

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Case Study

Achieving Predictable and Esthetic Posterior Restorations Using a Nanoparticle Universal Composite

Edward Lowe, BSc, DMD

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Unique Implant Technology for Immediate Provisional Restorations at Implant Placement



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The conventional approach to implant reconstruction is based on a 2-stage implant surgical protocol.^{1,2} The treatment plan includes advanced bone grafting and regenerative procedures to reconstruct the patient's deficient alveolar ridge with a stable mature implant bone interface.³⁻⁵ To achieve adequate bone regeneration and implant stability, external forces that cause micro- or macromovement to the bone graft and implants had to be carefully eliminated. Consequently, most practitioners instructed their patients not to wear any appliances or dentures for a while. Being without teeth is a "deal breaker" for the many patients needing advanced procedures, because they would not be able to maintain their occupational, family, and social activities for some time.

In the early 1990s, a method for immediate teeth replacement with cemented provisional restorations was introduced.⁶⁻⁹ The Modular Transitional Implant (MTI) System (Dentatus USA, Ltd) provided efficient and practical means for chairside provisional restoration. They simultaneously stabilize graft sites in ridge augmentation procedures,⁶⁻⁹ and absorb the occlusal forces over the newly placed definitive implants. Thus, the prosthesis provide patients with immediate loaded functioning teeth, maintain the vertical and spatial dimension, and allow patients to continue in their normal daily activities. The MTI system was

described during a lengthy 10-year span in 50 clinical articles attesting to its utility and safety.

The Anew implants (Dentatus USA, Ltd), was introduced with the innovative resin screwcap, and is used for provisional and long-term implant supported single multiunit crowns and dentures.

The clinical example provided in this article demonstrates the use of the Anew implant system and introduces the extraordinary high resiliency silicone with long-term dimensional stability for denture retention without copings, O-rings, or adhesives.

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Clinical Example

The 56 year-old patient's rehabilitation treatment plan consisted of diagnostic planning with study models, a face-bow transfer and diagnostic dentate wax forms, and digital panoramic radiographs (Figure 1). The treatment included extraction of all the remaining teeth and ridge preservation procedures, and placing an immediate maxillary full denture.

The mandibular implant-supported prosthesis was constructed with the Anew screwcap attached splint and a removable overdenture was frictionally retained with the

Tuf-Link silicone resilient liner (Dentatus USA, Ltd).

A significant part of the mandibular treatment plan was to use the Anew implants with a stabilized splint for the provisional overdenture providing an uninterrupted healing phase for the definitive implants and the graft site. After administration of an appropriate local anesthetic, the remaining teeth were carefully removed. Platelet-rich-plasma (PRP) and an enhanced allogenic graft complex was placed into the residual extraction defects followed by the insertion of the upper full denture.

that were made with the Dentatus needlepoint drill. The pilot osteotomies were enlarged with the Dentatus sizing reamers for 3 Anew 2.4 mm × 14 mm long implants and 2 mm × 10 mm medium length implants (Figure 3).

The 5 Anew placed implants that did not require perfect alignment served as the support for a splinted framework for the provisional prosthesis. Regeneration of the mandibular alveolar defects proceeded by placing of the PRP/allogenic graft complex into the large residual defects,¹⁰ after the wound was closed with a 4.0 Vicryl Rapide sutures (Ethicon, Inc) in a continuous sling and horizontal mattress suturing technique.

The chairside construction of the splint with auto-cure resin and the Anew prosthetic components and metal bar were used in accordance with manufacturer's instructions. The splinted framework consisting of the antirrotational titanium index copings, titanium bars, and nonhygroscopic resin screwcaps were carefully assembled. To prevent acrylic becoming entangled with the sutures, a rubber dam was placed over the surgery site before the installation of the prosthetic components attached with the screwcaps.

Brass plugs were placed into the screwcaps' square openings preventing the soft flowing acrylic from blocking the manual driver re-entry. A clear flexible template was placed over the framework marking the location of the 5 Anew



Figure 1—Preoperative digital panoramic radiograph.



Figure 2—Definitive implants were seated into the alveolar ridge.



Figure 3—Anew implants were seated interstitially between the definitive implants.



Figure 4—Chairside constructed titanium bar reinforced the resin splint.



Figure 5—Ovoid resin splint with orientation groove for denture insertion.



Figure 6—Denture base was prepared for splint and seamless groove for the relin.



Figure 7—The provisional denture was supported by the screwcap attached to the splint relined with Tuf-Link resilient retention, without copings or O-rings.



Figure 8—Completed reconstruction with upper and lower prosthesis.



Figure 9—Postoperative digital panoramic radiograph.

implants. Holes for the screwcaps were created with the Dentatus trephine drill for unimpeded seating of the template. Auto-cure resin (that does not become attached to the screwcaps) in initial elastic stage was placed into the clear template and seated, and was allowed to polymerize to hard state (Figure 4). The splint was then disassembled reducing its size (to fit in the denture) creating a mild ovoid form with a "V" groove for a seating guide. The splint attached with the screwcap reduced to the level was filled with temporary resin for subsequent access (Figure 5). The splint provided stabilization of the implant and bone graft with secure retention for the removable prosthesis.

The base was prepared with the Dentatus denture instrument making a deeper space for the splint and creating a shallow relief for the crest of the ridge up to the retromolar pads. The inner periphery was scored with the denture cutting instrument creating a seamless groove that locks-in the relin in place without adhesive (Figure 6). The Tuf-Link (Dentatus USA, Ltd) resilient material was mixed for 40 seconds and placed into the prepared space and gentle pressure was applied for almost 5 minutes. The polymerized liner was removed with a pointed tool and the excess material was cut away with small scissors along the visible seam line and snapped into the base with finger pressure or a blunt instrument. The Tuf-Link relin long-term

dimensional stability maintains its resilient accurate-form for up to 18 months depending on the variables of home care and other contravening conditions can be simply replaced within minutes by the office assisting personnel and (the liner can likewise be attached with a brush-on retention technique) (Figure 7). At insertion, the implant prosthetic complex with stable silicone tissue comfortable interface alongside the entire ridge allowed the ridge to heal without pressure or dislocation (Figures 8 and 9).

After complete healing and bone maturation, the splint was disassembled and the implants were removed by counterclockwise rotation with the Anew manual driver. The conversion of the provisional denture was accomplished by the conventional placement of healing abutments on the definitive im-

plant. The denture was retrofitted with a new Tuf-Link reliner completing the implant prosthetic reconstruction process for a very satisfied and appreciative patient.

Conclusion

The Anew titanium alloy implants for immediate and long-term support are used for fixed single teeth, long-span bridges, and full-arch restorations. The retrofitting of problematic nonretentive overdentures can be accomplished in a single chairside procedure. Following the outlined protocol, patients can have a stable, screw-retained implant-supported prosthesis in one office procedure. ■


Disclosure

The author is a consultant for Dentatus USA, Ltd and Zimmer Dental.

References

1. Branemark PI, Zarb GA, Albrektson T, eds. *Tissue-Integrated Prosthesis: Osseointegration in Clinical Dentistry*. Carol Stream, IL: Quintessence Publishing; 1985:11-81.
2. Adell R, Lekholm U, Rockler B, et al. A 15-year study of osseointegrated implants in the treatment of the edentulous jaw. *Int J Oral Surg*. 1981;10(6):387-416.
3. Jovanovic SA, Spiekermann H, Rizhter EJ. Bone regeneration around titanium dental implants in dehiscence defect sites: a clinical study. *Int J Oral Maxillofac Implants*. 1992;7(2):233-245.
4. Nevins M, Mellonig JT. The advantages of localized ridge augmentation prior to implant placement: a staged event. *Int J Periodontics Restorative Dent*. 1994;14(2):96-111.
5. Lazzara RJ. Immediate implant placement into extraction sites: surgical and restorative advantages. *Int J Periodontics Restorative Dent*. 1997;17(5):324-343.
6. Petrangaro PS. Fixed temporization and bone-augmented ridge stabilization with transitional implants. *Pract Periodontics Aesthet Dent*. 1997;9(9):1071-1078.
7. Petrangaro PS, Smilanich MD, Adams T. Altering the concepts of implantology for the 21st century. *Contemporary Esthetics and Restorative Practice*. 1999;3(3):30-37.
8. Froum S, Emtiaz S, Bloom M, et al. The use of transitional implants for immediate fixed temporary prosthesis, in cases of implant restorations. *Pract Periodontics Aesthet Dent*. 1998; 10(6):737-746.
9. Petrangaro PS. Reconstruction of severely resorbed atrophic maxillae and management with transitional implants. *Implant Dent*. 2000; 9(3):271-276.
10. Petrangaro PS. Platelet-rich plasma for dental implants and soft-tissue grafting. *Dent Implantol Update*. 2001;12(6):41-46.

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