Surgical planning and immediate placement of implants:

Esthetic management of adjacent maxillary central incisors

By Michael Sonick DMD

Periodontist: Dr. Michael Sonick
Restorative Dentist: Dr. Patrice Foudy

Patient history
A medically and periodontally stable 50-year old woman presented with failing #8 and #9 teeth that exhibit asymmetry, lack of interdental papilla and a history of failing root-canal therapy and apicoectomy (Fig. 1).

Treatment plan
1. Extraction of teeth #8 and #9, immediate implantation of #8 and #9 and immediate non-functional provisionalization of #8 and #9.
2. Three-month healing period.
3. Gingivectomy to create mucosal symmetry.
4. Six-month healing period, during which contour adjustments to interim restoration will be made to manipulate papillary regeneration.
5. Placement of final single PFM crowns on implants #8 and #9.

Treatment plan rationale
Implant rehabilitation for sites #8 and #9 boosts long-term prosthetic success, which diminishes future costs and permits more future restorability options.

The patient is an ideal candidate for immediate implant placement and temporization because of her thick biotype, which resists recession, as well as the inherent coronal positioning of the gingival drape around #8 and #9 compared to the adjacent teeth, which allows any minor recession post-treatment to remain within esthetically pleasing bounds.

Extraction of teeth #8 and #9, immediate placement of implants #8 and #9 and immediate non-functional provisionalization of #8 and #9

After oral sedation with 0.25 mg triazolam and local anesthetic induction using 2 percent lidocaine with 1:100,000 epinephrine and 0.5 percent bupivacaine with 1:200,000 epinephrine, sulcular incisions were made circumferentially around teeth #8 and #9.

Extraction, immediate placement and immediate provisionalization

By Steven A. Guttenberg, DDS, MD

With all the technology available to dental practitioners today, very few can be described as “career altering.” One of my original reasons for investing in a cone-beam computed tomography (CBCT) scanner was to assist with the complete evaluation of dental implant sites.

A major concern during implant placement is the possibility of placing an implant too close to or penetrating the inferior alveolar nerve canal, likely resulting in injuries such as paresthesia, anesthesia or dysesthesia. In preparation for the insertion of fixtures, I wanted to be able to appropriately visualize important anatomic landmarks.
Degranulation of the sockets was performed using a carbide finishing bur and Neumeyer bur. A surgical guide was used to prepare the implant osteotomies, and proper positioning was attained (Fig. 5). After finalization of the osteotomy sites, rough-surfaced, internal hex 4 mm (diameter) x 15 mm (length) implants were placed into the #8 and #9 sites (NanoTite® Tapered Certain® Implant, BIOMET 3i, Palm Beach Gardens, Fla.) (Fig. 4). Healing abutments were placed on the implants to prevent soft-tissue and bony collapse during the period that extraoral fabrication of the temporary prostheses occurred (Fig. 5a). The orientation of the implants was ideal, and the fixtures exited from the sockets at the cingulum positions (Fig. 5a). Primary stability was achieved. Radiographic review of the implants revealed a peak of bone between the fixtures, an inter-implant distance of greater than 4 mm and an implant-tooth distance of 2 mm (Fig. 5b). To bridge the circumferential gap between the socket walls and the implant surfaces, freeze-dried bone allograft (FDBA) was used as graft material (LifeNet Health, Virginia Beach, Va.).

Temporary cylinders (Pre-Formance® Temporary Cylinder, Certain Internal Connection, 4.1 mm platform, hexed) were placed on the implants to check the restorative position (Fig. 6). These were removed, and an implant-level pick-up impression was taken. After chairside creation of a cast (Figs. 2b-2c). Healing abutments were placed on the implants to prevent soft-tissue and bony collapse during the period that extraoral fabrication of the temporary prostheses occurred (Fig. 5a). Primary stability was achieved. Radiographic review of the implants revealed a peak of bone between the fixtures, an inter-implant distance of greater than 4 mm and an implant-tooth distance of 2 mm (Fig. 5b). To bridge the circumferential gap between the socket walls and the implant surfaces, freeze-dried bone allograft (FDBA) was used as graft material (LifeNet Health, Virginia Beach, Va.).

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with implant analogs, the hexed temporary cylinders were connected to the analogs and acrylic resin interim crowns were fabricated using a vacuum-formed template made over ideally shaped central incisors.

The resin interim crowns were seated and screwed onto the implants using hexed titanium screws with 20 Ncm torque. Cotton pellets were placed over the screw heads, and the access holes were sealed with composite resin. Occlusal adjustment prevented functional contact upon excursions. The interim restorations did not fill the papillary space between #8 and #9 (Fig. 7). A radiograph taken following completion of provisionalization demonstrated satisfactory positioning and seating (Fig. 8).

Gingivectomy over implants #8 and #9
Healing of the implant sites proceeded without incident. At one week post-surgery, the buccal marginal tissue remained coronally-oriented and encroachment of the papilla into the unfilled interdental space began (Fig. 9). Three months after initial surgery, further coronal displacement and papilla fill occurred.

Fig. 1d: Left lateral initial smile view. Teeth #8 and #9 appear to be on a different occlusal plane. Attention is drawn to them.

Fig. 2c: Utilizing beaked serrated forceps and rotational apical pressure, tooth #8 is removed without any destruction to the alveolar plate.

Fig. 2b: Contact points are broken and the crowns are removed. Trauma to the bone and adjacent teeth is to be avoided.

Fig. 1e: Initial radiograph. Teeth #8 and #9 are failing endodontically.

Fig. 3a: A surgical guide is used to ensure correct orientation during osteotomy preparation. Buccal view of the guide in place with orientation pins is shown.

Fig. 2c: Contact points are broken and the crowns are removed. Trauma to the bone and adjacent teeth is to be avoided.

Fig. 1c: Initial radiograph. Teeth #8 and #9 are failing endodontically.

Fig. 2b: Following a subalar incision, piezosurgery is used to atraumatically remove the teeth.

Fig. 1b: Occlusal adjustment prevented functional contact upon excursions.
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Minor gingivectomy was performed to create mucosal symmetry between the maxillary central incisors. The contact point and contour of the interim crowns were also adjusted to create a fuller papilla.

**Final restoration of implants #8 and #9**

Six months after gingivectomy and provisional contour modification, the implants were ready for final prostheses (Fig. 11). Single final PFM crowns were placed on implants #8 and #9. Clinical analysis demonstrated resolution of inflammation.
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idealization of the soft-tissue drape and papillary regeneration (Fig. 12). A radiograph illustrated preservation of interproximal and peri-implant bone (Fig. 13). The patient was satisfied with the functional and esthetic results (Fig. 14).

**Post-operative instructions**

After each surgical procedure, the patient was instructed to take ibuprofen 600 mg q4-6 hours, hydrocodone 7.5 mg/acetaminophen 750 mg q4-6 hours prn pain and doxycycline...
Fig. 12d: Left lateral final view.

Fig. 13: Radiograph of final restoration. There is preservation of interproximal and peri-implant bone.

Fig. 14: Final facial view.

100 mg qd for 10 days. The patient was instructed not to brush at or near the surgical site but instead to rinse with 0.12 percent chlorhexidine or warm saline twice daily. The patient was also directed not to chew in the affected area for at least two weeks.

Dr. Michael Sonick is a full-time practicing periodontist and implant surgeon in Fairfield, Conn. A renowned educator, author and clinical researcher, he is a guest lecturer for the International Dental Program at New York University School of Dentistry, a former clinical assistant professor in the department of surgery at Yale University School of Medicine and University of Connecticut School of Dental Medicine and a frequent lecturer on periodontics, implants and practice management. He is the founder and director of the Fairfield County Dental Club, an advanced continuing education organization that provides courses on dentistry’s latest developments. He is also founder and director of Sonick Seminars, a multidisciplinary teaching institute. Courses are given on all surgical aspects of periodontics and implant dentistry. For more information, call (203) 254-2006 or visit www.sonicldmd.com.

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such as the inferior alveolar nerve canal, mental foramen, maxillary sinus, incisive canal, nasal floor, mylohyoid ridge and the location and morphologic variation of adjacent teeth. The data provided by the scan accurately locates such structures beforehand, so that they and potential iatrogenic injuries can be effectively avoided during surgery.

Obviously, with traditional two-dimensional radiographs, I could visualize the general location of these entities and approximate the height of the alveolus, but a 3-D scan provided more information about the morphology of that ridge — its height and width to within a hundredth of a millimeter as well as its angulation and variation of its form. Currently, I feel that the scope of data garnered from the CBCT is imperative to place implants safely and correctly for the best restorative options, and this technology has indeed, altered my approach to dentistry. I continue to learn from each case that I perform by acquiring low-radiation limited postoperative scans, which help me become a better surgeon.

The clear, virtual, revolving model of the dentition captured on the CBCT scan can be rotated, zoomed in on from any angle and viewed in 360 degrees to assist in the determination of the implant site as well as for the fixture’s proper inclination, length and diameter. As an added benefit, there are numerous CBCT-compatible, implant-positioning software programs available, such as SimPlant®, NobelGuide®*, EasyGuide® and Anatomage’s InVivo5. Besides its usefulness for implant patients, my CBCT has a myriad of other benefits. I use it to gain information for many of the procedures performed in my practice: extractions, diagnosis and treatment of pathology, orthognathic surgery, airway studies, dental, oral and maxillofacial trauma, bone grafting, and evaluation of the paranasal sinuses. For example, a cone-beam image can show the relationship of a tooth to vital structures, such as nerves, the sinus or other teeth, that could make an apparently simple extraction into a complicated one or provide one with information to treat complex extractions more easily. Using preoperative three-dimensional reconstructions, like those produced by InVivo5, has become indispensable preceding my treatment of jaw tumors, congenital and developmental deformities and maxillofacial trauma.

In addition to educating me regarding preoperative planning, the CBCT allows patients to better understand my approach to dentistry. I continue to learn from each case that I perform by acquiring low-radiation limited postoperative scans, which help me become a better surgeon. Patients also enjoy the convenience of the in-office cone-beam examination, which eliminates the need for an extra trip to an imaging center and additional appointments at our office.

Also, during these times when financial considerations and radiation exposure are making headlines, patients appreciate that my CBCT machine exposes them to considerably less radiation and lower costs than the traditional medical CT scans taken elsewhere.

For a practice-building perspective, we have noted patients are appreciative of in-office CBCT technology that results in safer and easier treatment and they discuss their experience with family and friends, resulting in increased referrals.

Quite frankly, I can’t even imagine how I could practice oral and maxillofacial surgery without my i-CAT®, and I would not want to place an implant without being aware of all the details that could affect its success or failure. The CBCT information helps me formulate the correct diagnosis, whether I am planning an implant, simple or complex dental procedure, or just consulting. For my practice, I consider it not only to be the standard of care, but the gold standard for dental practice.
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Presenting implant treatment can be extremely challenging. While the value of implant treatment is readily apparent, the cost is often a deterrent to case acceptance. When patients find out that insurance provides little or no coverage for implant treatment, most people will say “no” — unless the practice offers a way to make the cost affordable.

Patient financing does just that. It breaks the total cost of dental implants into comfortable monthly payments. Levin Group recommends offering financing options to all patients, not just those who express interest. According to a 2010 survey conducted by Levin Group, seven out of 10 doctors said offering patient financing increased case acceptance.

Financing by an outside dental-oriented patient financing company provides convenience for patients and practice alike. Patients can be approved in a matter of minutes — very important for implant case acceptance. Remember that patients are contemplating a great deal of new information. A quick and painless financing process will help ensure that they stay motivated for implant treatment.

Get 95 percent of something
A surprising number of implant practices today fail to tell patients that outside patient financing is available. Why? Some doctors are hesitant to give up a very small portion of the fee as part of the financing arrangement. This is clearly not in the practice’s best interests. The small portion of the fee that is retained by the financing company is insignificant compared with the return to the practice. This is not a matter of receiving 100 percent of your fee as opposed to receiving 95 percent of your fee. It’s a matter of receiving 95 percent of your fee as opposed to receiving none of your fee, if the patient is unable to pay for the implant case. Without financing, many patients will not be able to afford implant treatment.

In addition, patient financing removes all patient financial arrangements from your practice. Once the revolving line of credit is put into place, the patient is obligated to the finance company rather than to your dental practice. This is not a matter of receiving 95 percent of your fee as opposed to receiving none of your fee, if the patient is unable to pay for the implant case. Without financing, many patients will not be able to afford implant treatment.

Patients financing addresses reservations patients may have concerning fees. Offering this option makes it far easier for patients to say “yes” to implants. Ultimately, outside financing benefits both the implant patient and the practice.

Implant Tribune readers are entitled to receive a 20 percent courtesy on a Levin Group Practice Potential Analysis — an in-office evaluation designed to identify the true potential of your practice. Call (888) 973-0000 and mention “Implant Tribune” or e-mail customerservice@levingroup.com with “Implant Tribune” in the subject line. For more information on Levin Group seminars and programs, go to www.levingroup.com.

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Grand Industries signs with Redrock Trading Partners

Grand Industries (dba CK Dental Industries and dba Grand Biologics) has signed an agreement with Redrock Trading Partners, a United States FINRA broker dealer.

Grand Industries has selected Redrock to help seek capital to grow and expand its dental and medical products business. Grand Industries plans to file a Form S-1 and 15c211 to enter the public markets on behalf of investors.

Chuck Keyler, CEO of CK Dental Industries, announced the terms of the agreement: Redrock will act as an "introducing broker" on behalf of Grand Industries to introduce a funding partner. If these introductions result in a successful business transaction, Grand Industries will pay Redrock an introducing fee based on the total funding amount of the transaction.

About Grand Industries

Grand Industries is a California limited liability company doing business as CK Dental Industries and Grand Biologics, providing proprietary products to dental and medical customers. These include dental biologics, stem cell, surgical instrumentation and medical orthopedic products for the health-care industry.

CK Dental Industries is a national leader in providing surgical instrumentation and dental human allografts, synthetic and bovine regenerative products to maxillofacial oral surgeons, periodontists, endodontists and general practitioners. Visit www.ckdental.net.


For additional information or to invest, request a private placement memorandum/prospectus by calling (800) 675-2537.

Materialise, Dr. Norton to present at EAO

Materialise Dental will present at the European Association for Osseointegration from Oct. 6-9 in Glasgow, United Kingdom.

A personalized SurgiGuide® drill guide ensures accurate and predictable computer-guided surgery and provides the seamless link between a 5-D treatment plan and actual treatment. Reduced surgery time, increased case success rates and esthetic perfection thanks to prosthetic-driven planning and surgery are just a few benefits of guided-implant placement.

Internationally renowned speaker Michael Norton, BDS, FDS, RCS(Ed), will demonstrate how a SurgiGuide can prove valuable in every implant case — from pretty straightforward cases to the more complex ones. SurgiGuide showcases your high standards for safety, efficiency and functional esthetics — and your determination to go even beyond these.

About Materialise Dental

Materialise Dental: creating a better and healthier world through 3-D digital dentistry. Materialise Dental has always been at the forefront of developing innovative 3-D technology solutions for dental professionals and oral and maxillofacial surgeons. The company strives to offer you the best 3-D diagnostic and (implant) treatment planning tools available on the market.

(Source: Materialise Dental)
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Osteogenics Biomedical introduces new Pro-fix precision fixation system

Osteogenics Biomedical, manufacturer of Cytoplast® barrier membranes and PTFE suture, announces the addition of a new fixation system, Pro-fix™, to its regenerative portfolio.

The Pro-fix system will include self-drilling membrane fixation screws, self-drilling tenting screws and self-tapping bone fixation screws. The self-drilling membrane fixation screws are immediately available for sale.

The Pro-fix system is a single kit designed to supply and store the variety of fixation screws used in regenerative practices. The Pro-fix system features a locking-taper cruciform drive system that allows easy pickup and safe transport of the screw to the surgical site.

Osteogenics will first introduce membrane fixation screws, which consist of 3 mm self-drilling titanium alloy screws designed to engage bone without the need for a pre-drilled pilot hole. Each screw’s aggressive tip design allows for precise membrane placement — even in cortical bone.

Pro-fix is now available for purchase online at www.osteogenics.com or by calling (888) 796-1823. Replacement screws and the system’s individual components are also available for purchase. Self-drilling tenting screws and self-tapping bone fixation screws will be available this fall.

About Osteogenics Biomedical:
Headquartered in Lubbock, Texas, Osteogenics Biomedical was founded in 1996 and has grown into a leader in the dental bone grafting industry, serving periodontists, oral & maxillofacial surgeons and clinicians involved in regenerative and implant dentistry throughout the world. The company’s core brands include Cytoplast® barrier membranes, Cytoplast PTFE suture, Pro-fix Precision Fixation System and Osteogenics Clinical Education.
New Legacy angled overdenture abutments provide unmatched versatility at approximately half the cost of comparable abutments for greater overdenture treatment plan flexibility and case acceptance. Dentists can now choose between 15-degree or 30-degree angled abutments for use with numerous internal-hex implants industry-wide that range in size from 3.3 mm to 6.0 mm diameters.

As another “simply smarter” solution by Implant Direct, the Legacy angled overdenture abutments’ compatibility with nine implants across the Legacy System allows dentists to treatment plan with an assortment of body types and diameters that utilize a single surgical kit. Simplicity is also evident in the abutment design, which enables dentists to easily seat the abutment screw without compromising the integrity of the oral cavity seal — unlike some current market offerings, according to the company.

In addition to screw-retained prostheses, the angled abutment base may be used with the clinician’s preferred overdenture attachment system when combined with a ball top or a GPS® abutment top with LOCATOR®-compatible profile (sold separately).

The 15-degree and 30-degree angled abutments are available for both 3.5 mm and 4.5 mm platforms. The All-in-One packaging includes an abutment screw, transfer, screw-receiving top and comfort cap along with the abutment base.

Available in a variety of body designs, all Legacy System implants feature the internal bevel/hex platform developed by Dr. Gerald Niznick in 1986 (US Pat. 4,960,381).

The common prosthetic platform enhances treatment-planning flexibility and color coding simplifies implant identification. While the thread design, aggressiveness of self-tapping grooves, packaging and diameter options vary by implant, all Legacy System implants are designed with Implant Direct’s patented micro-threads for increased stability and double-thread leads for faster insertion.

All-in-One packaging ensures each implant includes a cover screw and 2 mm healing collar.

About Implant Direct Int’l.
Implant Direct Int’l. was founded in 2004 by Dr. Gerald Niznick, who revolutionized the implant industry with his Screw-Vent design. Implant Direct continues that tradition of innovation through its commitment to provide dentists with high-quality implant products at a market-appropriate price. The company releases numerous new product lines and line extensions each year while also continually improving its existing product designs, manufactur- ing processes and online store. With its unique business model, Implant Direct has quickly become a “simply smarter” choice for any dentist placing implants.
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