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The Journal of Cosmetic Dentistry

Volume 24 • Number 2
Summer 2008

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The Journal of Cosmetic Dentistry

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AACD Mission Statement

The American Academy of Cosmetic Dentistry is dedicated to advancing excellence in the Art and Science of Cosmetic Dentistry and encouraging the highest standards of ethical conduct and responsible patient care.

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Editor's Message

Your Journey

Journey versus destination; process versus outcome. We all are familiar with these contrasting terms, but have you considered how they actually affect your life? Have you thought about your goals and where you hope to be one, three, or five years from now? Have you really thought about your journey?

The "journey" I'm referring to is *within* you. It is a process, certainly—a process of self-discovery. It affects your daily life in terms of how you believe in yourself and how you perceive others. Where does it come from? Rather than discussing "nature versus nurture," I want to focus on where it is taking you today, and how it affects you *in the moment*.

No matter how you look at things in your life and your interactions with others, all that you really have is the present moment. Yes, you have memories of the past and dreams for the future, but all that you can *truly* partake in at any given time is that instant that exists right now! In fact, your journey is composed of those very moments… and how you deal with them creates the path that you follow.

Too often, we focus on trying to determine our path or journey. When we do so, we wind up concentrating on future goals, which takes us away from the present moment. The journey actually is a process of self-discovery that happens in *each* and *every* moment. I want each of you to cherish *today*, and not to let life pass you by because you are thinking too much about tomorrow.

The journey brings us face to face with ourselves. The more we slow down and smell the flowers (or, better yet, see pretty smiles and happy faces around us), the more we come to understand our purpose in this world. Some of us might discover something about our purpose within our dental practices. Consider this, for example: When doing a 10-unit veneer case, working in the confines of a space the size of a tennis ball, you place 10 porcelain facings smaller than your fingernails. In so doing, you have the potential to change someone's life! Was it the veneers that really touched your patient's life, or was it the interaction between the two of you? It is easy to see how a patient notices the change in his or her smile, but where did *your* personal reward come from? That's the key, the moment we want to hang on to for a lifetime. That's the formula that we want to recreate each and every moment of every day of our journey!

So… does the person create the journey, or does the journey create the person? In my opinion, both! The journey is *now*, your experiences are *now*, and the person experiencing the journey is *you*, *now*! I cannot emphasize this enough, but all you really ever have, each and every one of you, is yourself and the present moment. The journey you travel is your life. Where you take your life, where you take yourself is predicated upon how you live *now*, in this instant!

The journey is life itself. Enjoy each and every second!

In all things, may your expectations be forever exceeded.

Michael

Michael J. Koczarski, DDS, Editor

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President's Message

Advocating for our Members

First of all, I wish to thank our Immediate Past President, Laura Kelly, for serving the American Academy of Cosmetic Dentistry (AACD) with amazing skill and grace during the past 12 months and demonstrating how to truly lead with style. It is my honor to succeed her and to serve this year as your president.

The Academy will see some new and exciting programs in the coming months, including expanded educational opportunities during this, our 25th Anniversary year. The first Two-Day AACD Scientific Session will be held November 14-15 in Knoxville, Tennessee, with our unrivaled camaraderie and dynamic lineup of star speakers. Affiliates from Kentucky, Georgia, Mississippi, and Tennessee will come together for the first time as co-sponsors for this unique program featuring Drs. Elizabeth Bakeman, Corky Willhite, Jeff Morley, Rhys Spoor, and Mark Hyman; and Ms. Sandy Roth. More information is available at www.aacd.com. Our new eLearning program will continue to grow throughout the year and, as it expands our educational offerings, it will make it easier for members to access education on a regular basis at their own convenience. If you haven't yet experienced this new way of learning in the comfort of your own home, check it out! Expanding our educational influence globally is also a priority, and we are redefining and expanding our role as advocates for the Accreditation credential and for the benefits that all Academy members receive.

The concept of advocacy is not new to professional organizations; members' rights have been vigorously protected for many years by the courts, by state dental boards, and in the media. A year ago, the AACD formed an Advocacy Task Force to begin examining matters that our own members face. Because there were significant issues, the Board of Directors (BOD) elevated the task force to a committee. The BOD is now researching the possibility of engaging counsel to approach some of these concerns.

Advertising issues currently are being negotiated in four states: California, Colorado, Florida, and Georgia. The issues are similar in most states. The state boards are influenced by groups that would restrict the advertising of legitimate credentials from bona fide organizations such as the AACD, the Academy of General Dentistry (AGD), the Academy of Laser Dentistry (ALD), and the American Academy of Implant Dentistry (AAID). In some states, there would even be restrictions on advertising membership in such organizations. The AACD Advocacy Committee's position is that the First Amendment of the U.S. Constitution gives us the right to inform the public of our professional affiliations and our legitimate credentials. We are also considering forming an Advocacy Advisory Council with representatives from the 50 United States and Canada, and we will continue to explore how to advocate for our international members.

The advertising "rules" of many state boards, as well as ADA Ethics Guidelines, prohibit organizations that are not recognized as specialties by the ADA from marketing credentials (at all, or without a disclaimer such as, "*The State Board of _____ does not recognize cosmetic dentistry as a specialty*"). Our Advocacy Committee has partnered with the AGD, the ALD, and the AAID to negotiate with these entities to come to mutually acceptable solutions. For instance, we might propose a disclaimer that reads: *Joe Smith, DDS, Accredited member, American Academy of Cosmetic Dentistry—General Dentist*. Use of this designation would take nothing away from the dentist placing the advertisement, would deal honestly with the public, and should appease those dentists whose specialties are recognized by the ADA.

It is through a focused and committed effort such as this that our Academy must diligently work to protect our intellectual capital assets, which have become more meaningful and respected as the AACD has grown and prospered. Over the last 25 years, the AACD's leaders and volunteers have built an amazing organization committed to excellence in cosmetic dental education. *Each and every one of you* "owns" this great organization; it is yours to protect and to carry forward into the future. I look forward to the year ahead and welcome your e-mails and phone calls with any comments or concerns. I can be reached at mbernst1@comcast.net or at 901.754.0540.

Mickey Bernstein, DDS, AACD President

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About the Cover

Full face, before.

10 Direct Resin Veneers, Gingival Contour/Lift, Whitening of Lower Teeth

Akane lives near the North Shore of the Hawaiian island of Oahu, and thus traveled a great distance to our Honolulu office, hoping to find a way to improve her smile. She was unhappy with her "gummy" smile, her "small" teeth, and the fact that they tilted lingually while not filling her buccal corridor. She wanted her smile to be fuller, brighter, less "gummy" in appearance, and more "mature-looking." Time was a factor, as she also wanted the work to be completed before she left for a trip to a family wedding the following month. Akane was given several different treatment options, from orthodontics to indirect porcelain veneers to direct resin veneers. Considering Akane's age, esthetic problems, dental health, and time constraints, direct resin veneers were the perfect choice to address all of her cosmetic concerns. After carefully reviewing all her options, Akane decided to go with resin veneers. They were placed on the upper anteriors in conjunction with a gingival lift and re-contour. Whitening was also done on her lower opposing teeth. The front six anterior veneers and gingival contours were done on the first day. She returned the following day for treatment of the remaining four bicuspids. (See page 76 for a clinical article about this case.)

Akane is overjoyed with her new smile, and that has increased her confidence in general. She was already beautiful, but now her smile complements as well as completes her. We felt it was only appropriate to combine photographs of her beautiful smile with a gorgeous beach background. The scenic backdrop allowed us not only to showcase Akane's new smile, but also the unique ambiance of the Hawaiian Islands and its people.

Patient's Statement

"I had always wanted a beautiful, confident smile, and had considered cosmetic dentistry for many years. My small, uneven teeth looked very childish and I was self-conscious about smiling, laughing, and taking photographs. I did not want to do anything invasive or aggressive; Dr. Do discussed options and procedures that better suited my needs. The results are far beyond my expectations! I am thrilled with my makeover, and it shows. This has been a life-changing experience, achieved in a very short time. I am eternally grateful for Dr. Do's skill."

Dentistry: Keri Do, DDS, Honolulu, Hawaii. Patient: Akane, Oahu, Hawaii. Photographer: Garrett Nose, Honolulu, Hawaii. AD

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Before

After

"This has been a life-changing experience..." ~ Akane

AN INTERVIEW WITH JEFF LAVERS OF 3M ESPE

by Michael J. Koczarski, DDS
Seattle, WA
www.aacd.com

Jeff Lavers
St. Paul, MN
www.3MESPE.com

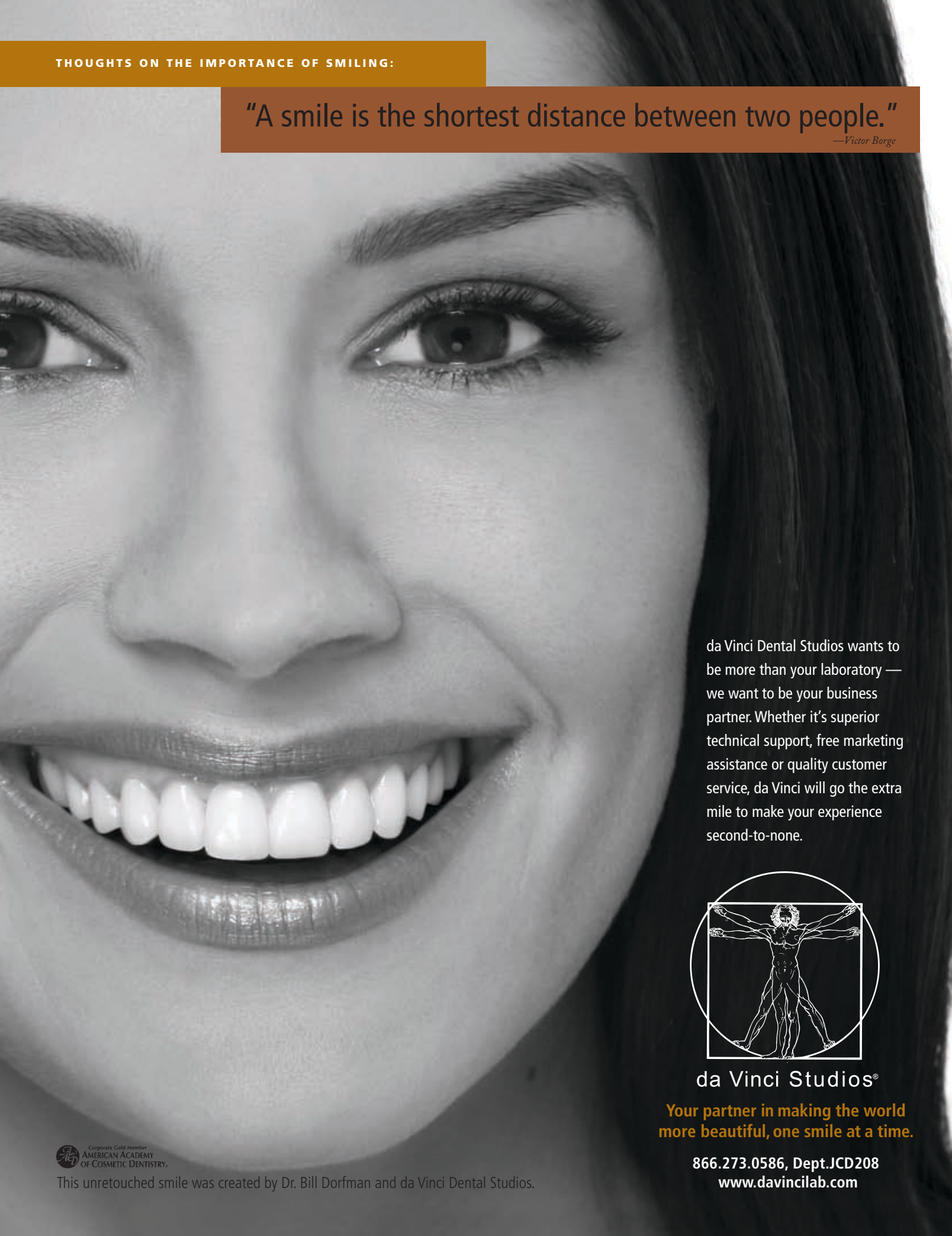
The Journal of Cosmetic Dentistry is pleased to offer another in its series of interviews with leaders in the dental industry, including clinicians, manufacturers, and educators. Here, *Journal* Editor Dr. Michael J. Koczarski (MK) talks with Jeff Lavers (JL), vice president of 3M ESPE Dental Products.

MK: There are countless products in the dental industry that 3M ESPE could create or improve upon. How do you decide which take priority?

JL: Innovation is not a one- or two-time occurrence in this company. It is a way of life, and listening to our customers is the first step in that process. 3M ESPE leverages 3M's 40-plus technology platforms to develop new products designed with "faster, easier, and better" in mind. We work with dental professionals worldwide early on in product development to determine what is going to make the greatest impact on the dental professional. The products and solutions that are a priority for us are the ones that we believe will make a real difference for dentists in their everyday work.

MK: American Academy of Cosmetic Dentistry (AACD) dentists have requirements that go beyond traditional general dentistry needs. How has 3M ESPE made itself relevant to the AACD audience?

JL: It is our focus on collaborating with customers that has made the difference. We have continual communication with many AACD dentists, working with them to create the next groundbreaking product. This type of environment has resulted in some very significant breakthroughs. For instance, 3M ESPE was the first company to focus on better resin cement for veneers (RelyX veneer cement). All existing cements were dual-cure



THOUGHTS ON THE IMPORTANCE OF SMILING:

"A smile is the shortest distance between two people."
—*Victor Borge*

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This unretouched smile was created by Dr. Bill Dorfman and da Vinci Dental Studios.

and suffered from handling issues and inaccuracy of try-in shades, and were subject to shade-shifting over time. While some in the industry had reservations about a light-cure-only veneer cement, 3M ESPE persisted in this development. Today, light-cure-only cements are the materials of choice for veneer cementation.

3M ESPE has always had excellent direct composite materials in regard to physical properties and handling characteristics. However, AACD members did not perceive them as materials that could provide AACD-level cosmetic results. Interactions with individual AACD members created the stimulus and direction to understand what was lacking, and to address the problem. Filtek Supreme Plus restorative focused on opacities and shades essential to AACD members, while also delivering on handling and polishability characteristics. On the indirect side, Lava crowns and bridges have become the standard by which other zirconia materials are measured.

At the end of the day, it all goes back to listening to the customer.

MK: Zirconia is really taking off as the restoration material of choice in many practices because of its esthetics and strength. There are a lot of options available, but are they really different?

JL: 3M ESPE prides itself on its expertise in materials science and digital technology; as, for example, with our overall Lava brand offering. I can tell you that all zirconia are not alike. In fact, we recently held a Global Symposium in St. Paul, Minnesota, with more than 130 leaders in dentistry from 40 countries, and this topic was discussed heavily. One of the attendees shared research that unequivocally made that very point. It is the reason that 3M ESPE has introduced the Lava Authentication Program, which allows dentists to verify, via the Internet, that the restoration they have received is a true Lava restoration. Our reputation goes along with that Lava product, as does the reputation of the dentist who uses the product. We all need to be sure that the product that professionals—and their patients—get is the one they expect.

MK: I know 3M ESPE is generating a lot of excitement with its Lava Chairside Oral Scanner (COS). How is this technology going to make its way into clinical practice?

JL: As a leading company in physical impressioning, it only makes sense for 3M ESPE to continue its efforts to be a leader in digital impressioning. Of course, it goes much further than the COS, which is part of a bigger picture that we refer to as the "digital workflow of the future." There is not enough time here to get into all the details, but the Lava COS can be the entry point for dentists to move into the future of digital dentistry. The next 20 years of dentistry are going to be nothing like the last 20 years. This industry is transforming and 3M ESPE is committed to leading it forward by facilitating the sharing of ideas and being a reliable source of information to clinicians.

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THE FOUNDATIONS OF SUCCESS

by Alan Richardson
Anacortes, WA
www.richardsoncoaching.com

FOUR MOLDING FORCES

I have lived in England, Africa, Australia, South America, and North America; and have spent time with thousands of people in all walks of life, varied professions, and occupations. In all those interactions, the questions that intrigued me most were, *"Why are these people—who are more successful, have better relationships, have greater prosperity—also better leaders?" "What were the forces that molded these individuals to be what they became?"*

I believe that there are four forces that mold characters, behavior, relationships, and success. They are as follows:

- beliefs
- values
- references (experiences)
- rules.

When you were born, you had none of these; you were an "empty vessel," eagerly waiting to be filled. With time, you "filled up" with beliefs, values, references, and rules. These were in large part determined by your parents; and by other factors such as faith, teachers, friends, and media messages. These four forces came from everywhere and as you adopted them—usually without question—you became who you are.

BELIEFS

We are certain of these; we will fight for them, often in blind obedience, as people have done from the beginning of time. Be aware of your beliefs. They are so powerful that you will follow them to your benefit…or your detriment.

Beliefs influence how you think and feel every moment of your life. They determine what you will and what you will not do. They determine how you

feel about everything that occurs in your life.

I recently asked a number of dentists, "*How long does it take you to prepare a lower posterior crown?*" The answers ranged from seven minutes to 45 minutes. Upon further questioning, the responses were surprising. The faster doctors said that the longer it took, the less satisfied they were with the result. The slower doctors said that the longer it took, the better the result. Others said that if they finished too quickly, patients would feel that they had not received value for their money.

As a non-dentist, I am surprised that a procedure that is performed so frequently by dentists could produce such varied beliefs—all based on time taken—as to what constitutes a good result.

In the hygiene area, I see a wide range in the quality of care. These differences are driven by the caregiver's beliefs. Examples include the diagnosis and enrollment in treatment of periodontal disease. Some hygienists enroll patients easily in treatment. Others fear patients' reactions and continue to perform "bloody" prophys. Scheduling preventive appointments can vary widely from practice to practice and from hygienist to hygienist in the same practice, again driven by the hygienist's beliefs.

Values

Happiness, love, commitment, determination, success, freedom, and security are examples of values. They guide your every decision. When you know what is important to you, making a decision is easy. Values such as honesty, integrity, wanting to contribute to society, and knowing right from wrong come, in large part, from the people you were most closely associated with while you were growing up. Any time you have difficulty making an important decision, you can be sure that it is because you are unclear about your values. It is essential to be clear about what is most important in your life, both personal and professional, and to decide to live by those values, no matter what happens.

References

References accumulate from life experiences, both good and bad. These in large part will determine your future behavior when faced with similar situations or circumstances. Take, for example, a dentist performing an endodontic procedure or an extraction that does not have a successful outcome. The dentist's confidence level with these procedures will be greatly impaired, which may result in him or her referring future similar cases to a specialist. The opposite is also true—when procedures go well, confidence levels increase and the likelihood of future good results also increases greatly. The solution is to get better training and develop a new set of references that, in turn, will build confidence.

The way you use your references will determine how you feel, because whether an experience is perceived as good or bad is based on what you are comparing it to.

This is highly significant when attempting eight- or 10-unit anterior cases; training and practice create the references that give you confidence and skill. Obviously, pursuing Accreditation, during which you have the opportunity for skilled mentoring, would be the ultimate skill and confidence builder.

Rules

Rules affect day-to-day behavior. When you become upset, it is because something, or someone, has broken one or more of your "rules" (by saying or doing things that in your opinion are wrong, incorrect, or inappropriate). The more rules you have for other people, the more you will live your life in a state of upset. Think about the last time you were upset with someone: Were you really upset with them, or were you upset because they violated one of your rules? The challenge is that others do not know your rules and even if they do, they may not care.

It is very helpful to have rules for yourself—for your own behavior, health, and security. You will know when you break your own rules because you will feel guilty. You also have rules for your team, and you should identify what these are. Decide which you want to keep and eliminate those that do not make sense or serve you. Communicate the ones you want to keep with your team and make them "must" rules. Teams always perform better when they know the rules. The side benefit is that you will be upset much less frequently.

Examples in dentistry

To further expand the impact of beliefs, values, references, and rules that affect your practice and the quality of your life, I will address some examples of these in dentistry. Picking examples that are controversial or interesting can help you determine how you feel and think about the issue.

Insurance—the very word can generate a torrent of negative emotions in many practitioners. Yet to others, insurance, which might comprise 60 percent or more of practice income, is regarded as an opportunity. Do your beliefs, values, references, or rules dictate your relationship with insurance?

Other examples include opposing attitudes such as the following:

- *"Employees are out to take advantage of me every opportunity they have."* Or, *"Employees want to contribute to the best of their abilities."*
- *"Doctors who 'cut' on virgin teeth are irresponsible."* Or, *"To create a great smile, it often is necessary to prepare virgin teeth."*
- *"I only diagnose to the limits of my ability to do the work."* Or, *"I diagnose the optimum treatment and find someone qualified to meet that need."*
- *"I don't trust my staff and believe they will embezzle."* Or, *"I put in place business systems to protect my team and minimize the opportunity for theft."*
- *"I believe the best practices are those that focus on advanced esthetics."* Or, *"I offer full-service treatment, including advanced esthetics, to my patients."*
- *"I am working hard because I want to retire early."* Or, *"I am working for the joy of what I do and intend to have a full career and stop when I am no longer able to contribute."*
- *"I crave the acknowledgement of my peers to feel successful."* Or, *"I feel good about the opportunity to help others. That is what makes me feel fulfilled."*
- *"I have my degree and no longer have to take continuing education courses."* Or, *"I owe it to my patients and my profession to invest my resources in training and technology to be the best I can be."*
- *"Amalgams have been around for 100 years and I see nothing wrong with doing them when I need to, and certainly see no need to replace them."* Or, *"I believe my patients want white teeth and I will certainly share with them the new materials and techniques available to give them beautiful white teeth."*
- *"Why do bad things always happen to me?"* Or, *"Everything happens for a reason."*

Summary

It is necessary and very appropriate to examine your beliefs and ask yourself questions that either reinforce or cast doubts on them. Either way, be sure that your beliefs are ones you have chosen, and that they serve you.

Examine your values—are they giving you a fulfilling life, or are you grappling with guilt? Make a conscious choice as to who you want to be.

References can either enforce or eat away your self-esteem. If you have had bad experiences regarding what you are capable of, then work to achieve better experiences.

The challenge in terms of rules is to remember that the more rules you have for others, the more upsets you are going to have. When you have rules within your practice, make sure your team knows what they are—the quality of your life will improve proportionally.

What really matters is whether your beliefs empower or diminish you. Begin today to develop the habit of focusing on the consequences of all your beliefs. Are they strengthening your foundation by moving you to action in the direction you desire, or are they holding you back?

Beliefs are a tremendous source of power. You can choose what to believe about yourself, and these beliefs will determine the actions you take. A key component to creating long-term change is a shift in beliefs. Beliefs determine whether we operate out of abundance or scarcity. Choose beliefs that support you and give you hope and energy.

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Excellence in Cosmetic Dentistry 25th Anniversary AACD Scientific Session in Honolulu, Hawaii Monday, April 27-Friday, May 1

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2009

EXCELLENCE IN COSMETIC DENTISTRY 2009

ADD A LITTLE *aloha* TO YOUR PRACTICE

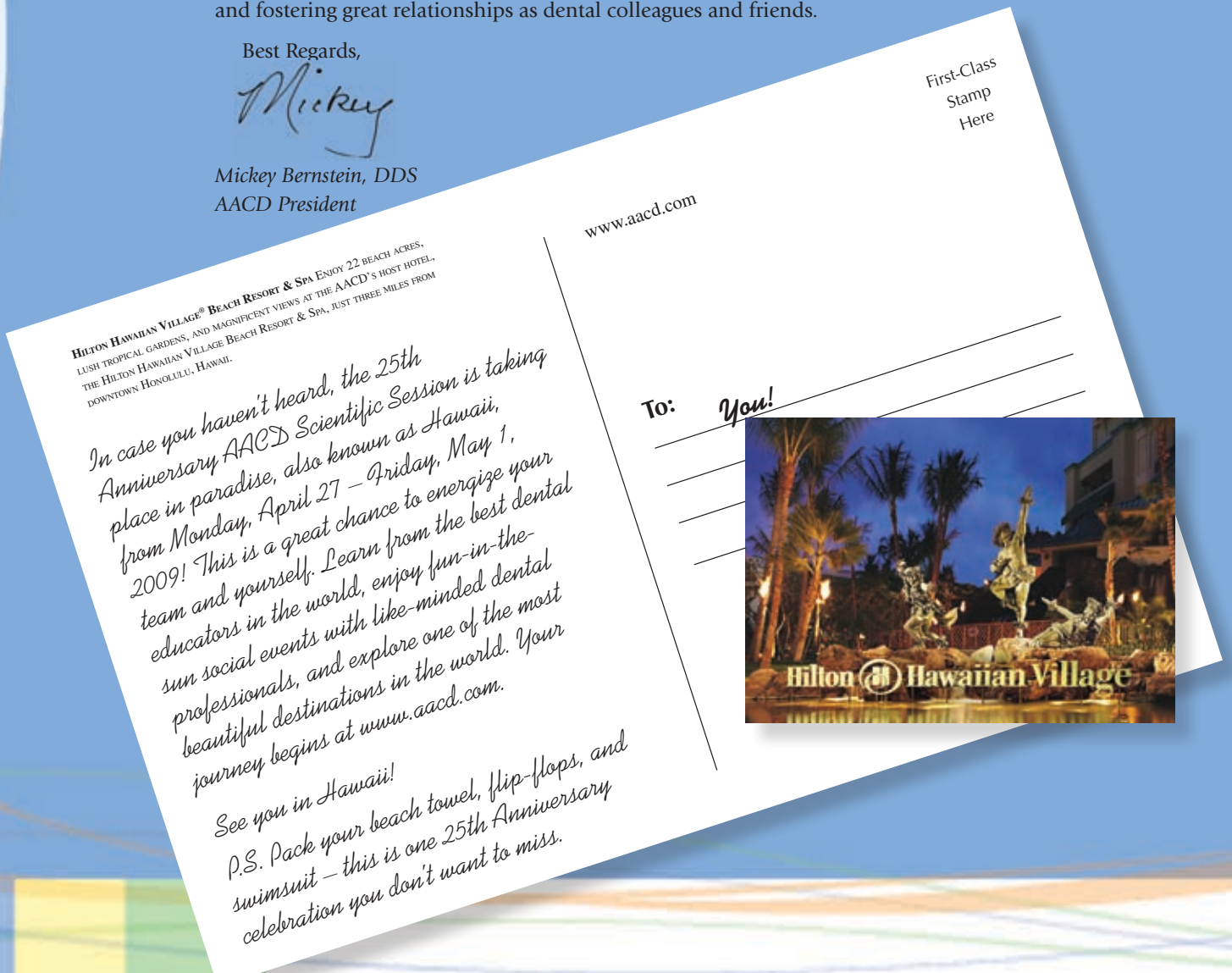
It is my honor to invite you to attend the 25th Anniversary American Academy of Cosmetic Dentistry (AACD) Scientific Session, *EXCELLENCE IN COSMETIC DENTISTRY 2009*, in Honolulu, Hawaii, Monday, April 27 – Friday, May 1, 2009. As esthetic dentistry continues to evolve at a rapid pace, it is more essential than ever before for dentists and laboratory technicians to seek out progressive dental education on an international level. It is the AACD's goal to bring East and West together to share ideas and innovations, and promote global esthetic synergy. Honolulu is the perfect backdrop for this scientific session, as AACD members from around the world join us in celebrating our 25th Anniversary.

Conference registration is open and course selection will begin Friday, December 5, 2008, online at www.aacd.com. We look forward to hosting you at our scientific session and fostering great relationships as dental colleagues and friends.

Best Regards,

Mickey

Mickey Bernstein, DDS
AACD President



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The AACD Charitable Foundation's Give Back A Smile™ (GBAS) program restores the smiles of domestic violence survivors at no cost. We have received many success stories and thanks from GBAS volunteers and recipients. This section shares the triumphs of the GBAS program.

In This Section:

Giving Back a Smile...and a Life

by James H. Arnold, DDS
Valparaiso, IN
www.SmilesByArnold.com

Introduction

My team and I were thrilled to meet "Carol" when she walked into our office in August 2007. We had been volunteers for the Give Back a Smile™ (GBAS) program for four years, but had not yet had a patient. We were eager to help someone change their life, and Carol was the perfect person for us to work with. She had heard about GBAS on television and prayed that she would qualify for the program. She was extremely nervous about having dental work done, but was also eager to find out what we could do for her.

Her broken teeth made her self-conscious about even opening her mouth in public.

Patient History

Carol had been abused by a former boyfriend in 1999. He had kicked her in the face and chest repeatedly, causing damage to her teeth and breasts. Several teeth were broken, and she had severe dental pain due to the trauma and resulting malocclusion. Carol had been a model as a teenager, but she had rarely smiled since the abuse (Fig 1). Her broken teeth made her self-conscious about even opening her mouth in public, and she was careful not to show her teeth in photographs.

After eight years of living with little hope of correcting this dental handicap, Carol heard about GBAS. She hoped to regain her smile, self-confidence, and faith in people as a result of her experience with us. She cried with gratitude when I told her that we could help.

Clinical Findings

We performed a comprehensive evaluation, including a full series of radiographs, digital photographs, diagnostic models, clinical examination of the teeth and periodontium, and patient interview. In addition to the fractures,

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give back a smile™

This nonprofit program helps individuals touched by domestic violence reclaim their lives, health, and self-esteem through repairing and restoring their smiles. The program has helped hundreds of people who might otherwise bear marks that last longer than scars or bruises. You can visit the foundation's website at www.aacd.com/foundation to find out more information.

Garrett Caldwell, a US Merchant Marine officer and US Coast Guard Captain, will combine his passion for sailing with this worthy cause.

Lissa Bisson, Director of Special Services, Frontier Dental Laboratories, who is passionate about this cause, together with Mr. Caldwell, will race their yacht to Hawaii to bring national attention to Give Back A Smile and their mission of giving surviors hope for a better tomorrow.

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Figure 1: Before surgery, Carol strains to smile for the camera.

Carol's teeth were severely affected by tetracycline staining, heavy attrition, inadequate restorations, extensive decay, and lack of professional dental care. This lack of dental care, combined with many years of smoking, had led to moderate periodontal disease and the loss of several posterior teeth. As a result of the heavy wear on her remaining teeth (Figs 2-4), Carol's Shimbashi measurement—measured from the cemento-enamel junction (CEJ) of the maxillary central incisors to the CEJ of the mandibular central incisors—was only 11 mm. She exhibited Class I occlusion, so we would generally expect to see a Shimbashi measurement of approximately 16 mm to 18 mm.

Initial Periodontal Therapy

The first priority was to address Carol's periodontal disease. Comprehensive oral hygiene instructions were given, root-planing appointments were scheduled immediately, and she began using a chlorhexidine rinse twice daily.

After her teeth were thoroughly cleaned under local anesthesia in two visits, we reevaluated her periodontal health at the follow-up cleaning four weeks later. She had already improved tremendously: There was a general decrease in pocket depths (from 4 mm to 5 mm down to 2 mm to 4 mm), bleeding upon probing was eliminated, the gingival apparatus appeared to be pink and healthy, and her plaque score improved significantly. Carol was very committed to following through with treatment, and she proved this by her renewed devotion to home care. We proceeded with additional diagnostic records to finalize our restorative treatment plan.

Additional Diagnostic Records and Treatment

Because Carol's dental needs were so great, we decided to do more than just repair the teeth that were damaged as a result of the abuse and opted to perform full-mouth rehabilitation. New diagnostic records were taken to aid in the creation of a diagnostic wax-up.

An NTI appliance was fabricated for Carol to wear for several nights in an attempt to deprogram (or relax) her very tense muscles of mastication. This facilitated a more accurate centric relation (CR) measurement with an anterior and two posterior bite registrations. Facebow and stick-bite records were also made, and photographs were taken to help our ceramist and laboratory (Marv Staggs, CDT, Precision Dental Restorations [PDR]; Salem, OR) to accurately mount Carol's models for an ideal wax-up. We reviewed and

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Figure 2: Carol's heavily worn teeth significantly decreased her CEJ-to-CEJ measurement.

Figure 3: The maxillary teeth showed heavy wear, large restorations, and recurrent decay.

Figure 4: The mandibular teeth showed heavy wear.

Figure 5: Carol's beautiful new restorations restored her collapsed vertical dimension.

discussed photographs from several smile guides to decide how to design Carol's new smile. We determined starting points for the shape, embrasures, line angles, and texture of the teeth; we also discussed the desired shades and incisal translucency to be utilized. Lengthening her anterior teeth was one of our priorities, so we mocked up ##6-11 with flowable composite (3M ESPE; St. Paul, MN) to determine how much length we could add. We increased her maxillary centrals from 6.5 mm to 11 mm; this seemed to fit well with her lip line and facial profile. We took photographs and made another polyvinyl siloxane (PVS) impression (Aquasil Ultra, Dentsply Caulk; Milford, DE) to give the laboratory a good starting point for her incisal edge position.

Local anesthetic was administered so that we could "sound" the bone to determine whether we could do any gingival recontouring. We were able to do laser modification of her gingival contours to improve symmetry, and additional PVS impressions were made.

After discussing options with Mr. Staggs, we decided that our treatment plan would consist of restoring what was left of Carol's upper and lower arches with crowns and a bridge. Because her teeth were very short, we decided that bonding her restorations instead of cementing them would yield a better result. Strength and maximum esthetics were very important to our patient and to us.

For these reasons, we believed that Empress (Ivoclar Vivadent; Amherst, NY) crowns for teeth ##4-11 and ##21-29; and a Lava (3M ESPE) bridge for ##12-14 would be the best option. Carol's treatment will eventually be completed with the placement of four posterior implants or the fabrication of a lower removable partial denture.

Figure 6: The maxillary restorations restored broken, decayed, and worn-down teeth.

Figure 7: The mandibular restorations add length and improve overall esthetics and function.

PREPARATION APPOINTMENT

PDR provided us with an excellent full-mouth mounted wax-up, preparation guides, Sil-Tech (Ivoclar Vivadent) stints, and initial reduction guides. We evaluated the wax-up with Carol at the preparation appointment and we were both very pleased.

We used the reduction models as guides to modify several teeth so that we could preoperatively transfer the wax-up to the mouth with Luxatemp (Zenith/DMG; Englewood, NJ). This allowed us to verify our records, teeth lengths, desired CEJ-to-CEJ measurements, proper canine and anterior guidance, and occlusion. We were able to do an initial esthetic evaluation, and the full-mouth Luxatemp mock-up also served as an ideal intraoral preparation guide.

Depth cuts were made into the Luxatemp and tooth structure, which allowed us to maintain even reduction and ideal orientation within the arch form. We prepared ##6-11 first and made a bite registration (LuxaBite, Zenith/DMG), maintaining the new vertical dimension that had been established with the mock-up.

Next we prepared #4 and #5, inserted the anterior bite registration, and made an additional bite registration for the upper right section. We repeated this sequence for #12 and #14, continuing to maintain the new vertical dimension by reinserting the anterior and right LuxaBite segments, while making a bite registration on the left.

Once the maxillary preparations were completed, we checked the preparation shades, took photographs, and made a maxillary final impression. We used the Sil-Tech stint again to make temporaries, which we sectioned into three segments for the upper arch. The CEJ-to-CEJ measurements and teeth lengths were verified again.

The same methodology was used in preparing ##21-29. Sequential bite registration records were made for the anterior and both posterior sections. We recorded both the relationship from the lower to upper preparations, and the lower preparations to the upper temporaries systematically. This ensured that the new vertical dimension was maintained and that all models could be easily cross-mounted by the laboratory.

Once the mandibular impression was made, we temporized ##21-29 with Luxatemp and recorded the bite relationship between the maxillary preparations and the mandibular temporaries. Then we provisionally cemented the maxillary temporaries and recorded the bite relationship between the upper and lower temporaries, further ensuring the easy mounting of all models.

A facebow record and stick bite were both made, and photographs of each were taken. Photographs and PVS impressions of the temporaries completed the preparation appointment.

On the laboratory prescription, we specified all of our esthetic and functional goals and provided specific instructions for utilizing the series of bite registrations. We sent all of the relevant photographs to PDR on a disk.

TEMPORARY STAGE

Our goal was to restore Carol to a vertical dimension that would al-

Figure 8: Carol is learning to smile again.

Figure 9: Carol and Dr. Arnold celebrate her new life.

low for ideal function, comfort, and maximum esthetics. Her Shimbashi measurement was increased from 11 mm to 17 mm, and her occlusion was restored to CR in the temporary stage. Carol tolerated the procedures very well, and she was very comfortable at her one-, two-, and four-week postoperative appointments. If she had had any problems with the increased vertical dimension, we could easily have adjusted her temporaries to a position of greater comfort while maintaining proper function.

Her self-confidence had already increased tremendously with her temporary restorations, and she had received many compliments on her improved appearance. She was still learning to smile naturally, but this was becoming easier each day as her inner joy was reflected on the surface. Carol was looking forward to a new future filled with hope and happiness.

A little more than three months after our first consultation, we were ready to deliver exquisite porcelain restorations (Figs 5-7). Once we received the case from PDR, we verified that both the occlusion and guidance looked good on the mounted models. The length, shape, shade, and fit of each restoration looked great, and we received the case exactly as requested.

I believe that it is our responsibility to give back with the gifts and talents we possess.

Seating Appointment

When Carol arrived for her seating appointment, she was still very comfortable. The occlusion with the temporaries looked good, which led us to believe that the condylar position was stable. After administering local anesthesia, we removed the maxillary temporaries and cleaned the prepared teeth. We tried in each restoration individually and then all restorations together; this ensured that they fit well separately *and* collectively. We very carefully verified that the maxillary restorations occluded well with the mandibular temporaries.

We utilized two shades of RelyX (3M ESPE) try-in paste, one on each side, to see which would yield a more esthetic result. After determining that we both preferred the translucent shade, the maxillary restorations were bonded utilizing standard bonding protocol and the "tack-and-wave" technique.

The maxillary restorations were placed at the same time and were individually "tacked" in with the Bluephase (Ivoclar Vivadent) curing light with tacking tip for one second each. The regular tip was then used in order to "wave" across the arch for a few seconds on the facial

and lingual sides. The wave allowed the cement to harden to the point where the gross excess could simply be removed with an explorer in large pieces. After flossing carefully, Liquid Strip (Ivoclar Vivadent) was placed around all of the margins to ensure that the oxygen-inhibition layer cured completely, and final curing was completed.

Maxillary cleanup was completed while the lower arch was anesthetized. After the mandibular temporaries were removed, we utilized the same try-in and seating techniques that we had used in the maxillary arch. Occlusion was adjusted slightly, photographs were taken, and postoperative instructions were given.

Carol cried joyfully when she held up the mirror to observe her beautiful new smile (Fig 8). Being able to help someone like Carol in such a significant way was humbling for all of us. We felt that we received far more from this experience than we gave (Fig 9).

Postoperative Success

Carol has continued to maintain her new restorations with diligent home care and regular dental visits. We are all very proud of her for making the necessary changes in her life, including giving up smoking. She knows that this is a gift that she needs to make the most of, and she intends to do so.

Additionally, she has committed herself to helping others who have been the victims of domestic violence. She will be the guest speaker at an event that we are planning to benefit the women's shelters in our area. Her dream is to one day appear on "Oprah" to tell her story and to inspire others to take control of their lives and to heal the physical and emotional wounds that have afflicted them.

My team and I feel blessed to have participated in Carol's dental and emotional rehabilitation. I believe that it is our responsibility to give back with the gifts and talents we possess; and that the more we have, the more we have to give. I have tried to surround myself with people who feel the same way, and they showed that same commitment through their generous support of Carol in her life-changing journey with us.

Carol's Words

"Dr. Arnold and his team have given me so much; they are truly angels. To give back a smile is to give back a whole new life. I want to live that new life to the fullest and to give back to others. So few people are willing to help others, and often no one wants to get involved. Dr. Arnold was very gentle and compassionate, and he created an extremely relaxing atmosphere for my care. My treatment went very well. Fixing the outside is also helping me to fix what's on the inside.

Unfortunately, we are judged by our appearance. I'm very happy that I no longer have to worry about laughing, smiling, or speaking when I'm with others.

I feel so good, and I'm trying to "pay it forward"; I want to touch as many lives as possible. I would like to appear on "Oprah" to draw attention to the dangers of domestic violence, and I would like to create a Web site that will provide support and help for victims of abuse.

I am so blessed and am forever grateful."

Acknowledgment

Dr. Arnold extends deep appreciation to Marv Staggs, CDT, owner of Precision Dental Restorations—not only for creating the beautiful restorations in this case, but also for generously donating all 20 porcelain units to help Carol create a new life for herself.

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Accreditation Essentials

In This Section:

Introduction to Accreditation Essentials

by Lynn A. Jones, DDS
Bellevue, WA
www.yourbestsmile.net

Techniques involving soft tissue management and multidisciplinary treatment planning have come a long way in the past few years, and the AACD's Accreditation process has evolved with this new technology. Accreditation Case Type III involves tooth replacement with a laboratory-fabricated bridge or an implant. It is now possible to place bridges and implants that are so lifelike that they are virtually undetectable to the casual observer and can fool even the trained eye.

Older techniques using ridge-lap pontics and gingival grafts have made way for ovate pontics with connective tissue grafts. As placement techniques improve, titanium implants are becoming more common as the treatment of choice for the missing anterior tooth. The implants have the advantage of conserving tooth structure and demonstrating excellent long-term prognosis.

To create an undetectable implant or bridge requires the skills of an excellent surgeon—whether it is a periodontist, oral surgeon, or the Accreditation candidate. Because the soft tissue management requires a special set of skills that differs from the other four Accreditation case types, I asked Dr. Gorman (who used an implant) and Dr. Featherstone (who used a bridge) to share their surgery slides and techniques.

The most common challenge with the pontic site is the collapsed ridge. Even a slight dip in the labial thickness of the gingiva will alter the emergence profile of the pontic, making it impossible to match the adjacent teeth. Only with an adequate amount of connective tissue grafting can the ridge be made to look normal. If the bone loss is vertical, it is unlikely that the pontic site can ever be made to look natural.

Implants also require the skill of an excellent surgeon. If an implant is placed too far labially the gingiva will be pushed apically, creating a gingival height discrepancy. If the head of the implant is too close to the surface it may show, and if it is too deep it might develop a fistula draining from the sulcus. Interaddicular spaces must be precise to preserve the papillae.

Good communication between the candidate and the surgeon is a key component to achieving excellent results for Case Type III. The restorative dentist can expect to get adequate site development only if the surgeon is provided with an accurate surgical stint, necessary x-rays, and the treatment plan. The fine results of these two cases were not due to a "guessing game"; rather, they were accomplished through careful planning, a comprehensive understanding of the gingival-alveolar complex, and clear communication. Much of this important communication was with the periodontists involved on these two cases. Dr. Gorman worked with co-author Dr. Paul Petrungaro, and Dr. Featherstone with co-author Dr. Ed De Andrade.

Case Type III is very challenging. In this issue of the *Journal* we have two excellent examples of tooth replacement that were done extremely well. Also in this issue, be sure to read Dr. Jorge Blanco's humorous yet perceptive Accreditation Success Story.

❖

Accreditation Clinical Case Report, Case Type III: Tooth Replacement with a Bridge

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Introduction

It is a challenge worthy of serious attention to create a bridge pontic in the esthetic zone that emerges from the gingival tissue like a natural tooth. This article describes a deficient edentulous space, its diagnosis and treatment with connective tissue grafts, and the subsequent shaping of a concave site with electrosurgery and a thermoformed plastic retainer with a root-shaped pontic. Also described is a novel method of laboratory communication regarding the exact position and shape of the apical surface of the pontic. A team approach—involving a general dentist, an orthodontist, and a periodontist—was used for this case.

The patient had congenitally missing lateral incisors, complicated by deficient bone and gingival bulk.

Patient History and Complaint

At the age of 12, the patient had been referred to an orthodontist for treatment involving congenitally missing maxillary lateral incisors. Upon completing treatment two years later, a consultation with the patient and her parents resulted in a decision to replace the lateral incisors with bridges constructed of lingual metal retainers and pontics, rather than endosseous implants. They agreed to conservative preparations including retention grooves on the retaining teeth, which could be restored with composite in the future, should the patient desire implants. The patient was also referred to a periodontist for grafting to augment the deficient pontic sites.

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Figure 1: Before and after, anterior retracted images.

Findings and Diagnosis

Findings

- Occlusion was Class I, post-orthodontic.
- Axial inclination was good, with #11 slightly more distal than #6.
- The overall facial symmetry was good, with no element being distracting. The midline was centered. Commissure to commissure was horizontal. Incisal tips of cuspids made a horizontal line.
- Golden Proportion: From the retracted frontal image,[1] the reveal of the laterals on the mock-up divided by the reveal of the centrals was close to a ratio of .62, ideal for central incisor balance (or harmony).
- There was a dark triangle between #8 and #9.
- The width-height ratio of the centrals was 82%. The cuspids appeared shorter than the central incisors because the gingival zenith was lower.
- The facial aspect of ##4-13 was rough due to removal of orthodontic bonding.
- The gingival tone was compromised, with mild plaque-induced gingivitis.
- The height of the edentulous ridge was judged as adequate to allow the future zenith of gingiva to be .5 mm to 1 mm below a line drawn from the gingival zeniths of the central incisors and cuspids
- Allen Type B ridge defect[2]: The occlusal view of the maxilla and retracted lateral images show a 2 mm to 3 mm deficient tissue bulk on the facial and lingual aspect of both lateral incisors. (See box on page 49 for classification of ridge defects.)
- The teeth were yellow-tinged.

We opted not to use an additional surgical site to obtain the graft.

Diagnosis

The patient had congenitally missing lateral incisors, complicated by deficient bone and gingival bulk (Fig 1). There also was vertical ridge deficiency at #7 and #10, low zenith on #6 and #11, and a dark triangle between #8 and #9. The teeth were yellow-tinged, with low value bicuspid to bicuspid. No treatment of occlusion was needed.

Discussion

Case selection may be more important in Type III Accreditation cases than in the other four types because of ridge management. Perfect edentulous ridges do not present very often, so tissue or bone grafting is usually necessary. Horizontal defects are more predictable than vertical defects.

Treatment Description

Armamentarium

- Fuji S2 Pro digital camera (Fujifilm USA; Valhalla, NY)
- Artex articulator and facebow system; Artex platform (Jensen Industries; North Haven CT)
- 4.48x magnification loupes (Orascoptic Research; Madison, WI)
- Imprint 3 polyvinyl (PVS) impression material (3M ESPE; St. Paul, MN)
- Triad adhesive; Triad visible light-activated (VLC) provision-

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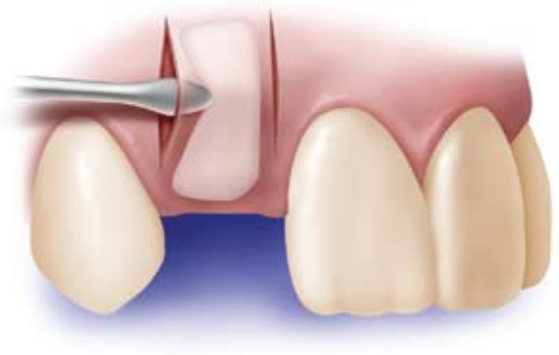

Figure 2: The ADM was placed into the surgical site, tucking it facially into the pouch created by the tissue undermining.
Illustration by D. Mazierski, ©2008

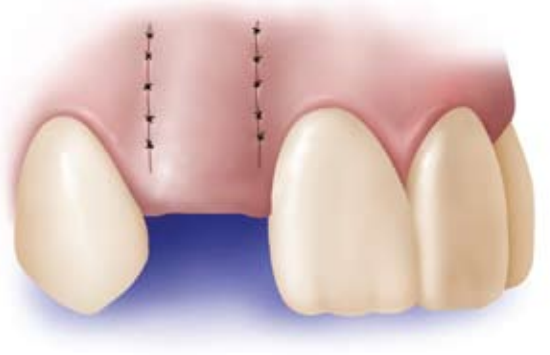

Figure 3: The flaps were closed with 6.0 sutures.
Illustration by D. Mazierski, ©2008

al material (Dentsply International; York, PA)

- Embrace .040-in. thermoplastic material (Dentsply Raintree Essix, Metairie, LA)
- PrepStart air abrasion system, (Danville Engineering, San Ramon, CA)
- Orthodontic Resin clear powder and monomer (Dentsply Caulk; Milford, DE)
- Bident bipolar electrosurgical system (Valley Forge Scientific Group, King of Prussia, PA)
- Diamond preparation bur 6856 (Brasseler USA; Savannah, GA)
- groove diamond 858.014F (Spring Health Products; Norristown, PA)
- Ultrapak knitted retraction cord 00 and 0 (Ultradent; South Jordan, UT)
- Blu-Mousse bite registration material (Parkell, Edgewood, NY)
- Ultra-Lume LED5 curing light; Ultra-Etch phosphoric acid gel; Opalescence PF 20% whitening gel (Ultradent; South Jordan, UT)
- CeramiPro Dialite ceramic polishers W16DG, W16DM, W16D, W17DG, DW17DM, W17D; Vision Flex diamond strips, 6850SU.31.016 (Brasseler USA)
- Vita Classic and Vita 3D shade tabs (Vident; Brea, CA)
- Renamel microfill shades B1 and Light Incisal; Enamelize composite polishing paste; FlexiDisc finishing discs (coarse, medium); Flexibuff polishing discs (Cosmedent; Chicago, IL)
- Clearfil Liner Bond 2V and Photo Bond bonding agents (Kuraray America; New York, NY)
- C&B-Metabond resin cement (Parkell Biomaterials; Farmingdale, NY)
- plumber's tape
- Triad VLC custom impression tray material (Dentsply International)

Periodontal Armamentarium

- 15C carbon steel surgical blade (Miltex; York, PA)
- 6.0 P-1 coated vicryl suture (Ethicon; Somerville, NJ)
- AlloDerm acellular dermal matrix (LifeCell; Branchburg, NJ)

Periodontal Treatment

Surgical options were presented to the patient at the periodontist's office, and it was decided to utilize a soft tissue graft to obtain an increased bucco-lingual width of the ridge. Both the patient's age and the lack of sufficient donor material were taken into consideration, and we opted not to use an additional surgical site to obtain the graft. An acellular dermal matrix (ADM) was offered as an alternative to a palatal donor site. The patient accepted this treatment option.

Prior to surgery, the patient rinsed for 30 seconds with a 0.12% chlorhexidine mouth rinse. After local anesthesia was achieved, vertical incisions were made on the facial aspect of the edentulous ridge, mesial and distal to the edentulous space. The facial flap was then undermined to create a pouch. The ADM was hydrated in normal saline, after which the graft was wetted with the patient's blood. (The connective tissue side of the ADM "absorbs" the blood, while the basement membrane side does

Figure 4: After removal from the model, the anterior portion of the clear plastic was trimmed off the facial aspect and feathered to the composite, so that the facial and apical portion of the pontic was totally exposed.

Figure 5: The pontic sites were beginning to heal.

not and remains a white, shiny color.) The acellular dermal graft was folded so the connective tissue side faced outward to form the exterior surface of the graft. This orientation was secured using four simple interrupted sutures. The ADM was placed into the surgical site, tucking it facially into the pouch created by the tissue-undermining (Fig 2). The flaps were closed with 6.0 sutures (Fig 3). The graft was completely covered. The immediate result was a significant gain in bucco-lingual dimension of the atrophic ridge.

At the one-week follow-up appointment, the area was judged to be progressing normally. The patient reported some soreness. There was no exposed ADM, and the area revealed normal edema and erythema associated with a recent surgical site. At the next follow-up appointment, the site was healing well. The bucco-lingual dimension had decreased. Overall, the area's esthetics were judged to be good in terms of color, contour, and fill of the ridge deficiency. The patient was pleased with the final esthetic result.

Postoperative Pontic Socket Formation

The patient returned to our office for evaluation one week after suture removal from the grafted sites. The grafting was bulky and pink, an excellent result by the periodontist. An impression was made from PVS material. The temporary retainer made by the orthodontist was removed, and an impression was made of the upper arch from PVS material.

In the laboratory, two models were poured. On the first model, #7 and #10 were mocked up in composite. A .040-in. thermoformed plastic sheet was formed over this model, removed, and trimmed to the gingival line in order to act as a retainer. The second model, which would be used to fit the pontic in the retainer, was trimmed 1.5 mm into the grafted area of the edentulous ridges to form the negative shape of the expected "E" pontic.[3] Rather than an oval shape, a nearly flat surface was made in the depth of the depression; this seems to improve papillae formation.

The internal surfaces of the retainer in #7 and #10 positions were sandblasted, and adhesive was painted over the area. Provisional material was packed into the spaces, fitted over the lubricated model, and cured in stages, avoiding undercuts until the pontic sites were filled. After removal, the anterior portion of the clear plastic was trimmed and feathered to the composite, so that the apical portion of the pontic was totally exposed (Fig 4). As mentioned earlier, a nearly flat surface was made in the depth of the depression.

Socket Site Surgery

The patient returned to fit the retainer, which would form the pontic socket. Following anesthesia, an incision was made in the pontic area in the gingival crest deep enough to allow the pontics to seat. This maintained the bulk of tissue, as compared with electrosurgical or laser reduction. The tissue sides of the pontics were adjusted and resin was added to fit the esthetic appearance of a tooth emerging through gingivae. The tissue could then heal around the pontic, as the thermoplastic retainer would hold it firmly in place. The patient was seen for

Figure 6: PVS impression material was injected into the pontic spaces of the model, and the retainer with the pontics was seated for fabricaton of the tissue model.

Figure 7: The retainer at the connector was reduced in an apical direction and returned to the laboratory for a bisque bake try in.

Figure 8: At this appointment, the papillae and facial gingivae were forming well.

evaluation when the pontic sites had begun to heal (Fig 5).

Tooth Preparation

The retainers were prepared on the lingual of teeth #6, #8, #9, and #11 with a narrow round-end diamond bur around the lingual border to create a 1-mm wall for retention. Narrow grooves were cut with a narrow flat-end medium diamond at each end of the preparation with walls of about 1.5 mm for positive retention, in a "C" shape. The proximal walls of the first cut were deepened with the flat-end diamond for additional retentive depth. The tissue was packed with cord and an impression was made. No temporary was needed over cut enamel, which allowed easy try ins.

Clear resin was applied to the sandblasted posterior internal occlusal surfaces of the retainer, shaped crudely, and adjusted so the patient could use it for chewing without having to remove it.

At this appointment, it was observed that the zeniths of the cuspids were still more incisal than the central incisors by 1.5 mm. The depth of the sulcus was 4 mm, so it was determined that the biologic width would not be compromised by a simple gingivectomy. The electrosurgical tip was used to trim the gingiva by 1.5 mm at the zenith. There was very little bleeding or discomfort.

Laboratory Communication

The patient returned four days later for evaluation and for fabrication of a tissue model in the laboratory. Flowable resin was added at the apical portions of the pontics for papillae formation. Minor tissue ad-

Figure 9: Preoperative and postoperative maxillary arch, occlusal views.

Figure 10: Before and after images, 1:10.

justments were made with the electrosurgical needle.

In the laboratory, we had made a solid model from the impression of the preparations of the bridge retainers, central incisors, and cuspids. The ridge areas of #7 and #10 were drilled away about 4 mm deep. Regular-set syringed PVS impression material was injected into the pontic spaces of the model, and the retainer with the pontics was seated (Fig 6).

This model gave the laboratory enough information to control three important characteristics of pontics. First, the metal framework of the pontics could be shaped to the correct apical length to provide backing with opaque porcelain, to match the body porcelain all the way down to the apical area. If this is not done, the value of the apical third will be too low. Second, the shape and depth of the apical portion of the pontic was clearly impressed, so that porcelain could be added incrementally to fill the space exactly and provide the same tissue support as the prototype pontics. Finally, the laboratory technician was asked to use a putty matrix created from the mock-up model to ensure adequate space of 1.5 mm of porcelain on the facial surface of #7 and #10. If this is not done, the metal can be too far labial, with subsequent shading problems. As will be seen, if changes are made to the pontics on the retainer, the impression material can be removed and another impression taken very quickly.

Try-in appointments

The order for a metal try in was sent to the laboratory. This appointment is important to check

Figure 11: Before and after images, 1:1.

the fit of the metal, and to ensure that the grooves are adequately reproduced by the laboratory technician. In addition, with the framework on the solid model, the shape and position of the metal pontic can be checked for the three characteristics noted above.

At the appointment, it was observed that the metalwork was built too far incisally at the connectors, which would have exposed metal at cementation. Only 1 mm height is needed at the connectors.[4] The retainer at the connector was reduced in an apical direction and returned to the laboratory for a bisque bake try in (Fig 7).

When evaluating the ridges, it was seen that tissue healing had changed the appearance of the papillae. The pontic seemed to fit the tissue model provided, but was not adequate to fill the spaces for the gingivae to appear natural. Flowable composite was added to the pontic appliance to create the desired effect when seated. The old impression material on the preparation model was removed and new PVS material was added. The appliance was once again seated on the model and allowed to set. This was returned to the laboratory to add porcelain to match the composite, and for shade adjustment and glazing. At this appointment, the dark triangle between #8 and #9 was resolved with composite. It was determined that the papillae and facial gingivae were forming well (Fig 8).

Two more try ins produced an acceptable shade with hypo-calcification spots. The bridges were cemented after sandblasting the internal surfaces of the retainers. The preoperative and postoperative occlusal views are shown in Figure 9.

Plastic Options

Many periodontal plastic surgery procedures[5] are available to esthetically reconstruct deficiencies in both hard and soft tissues. These include free gingival onlay grafts, the roll technique, subepithelial connective tissue grafts, hard tissue allografts or alloplasts, and guided bone regeneration.[6-15] ADM is a material that has recently been used for both medical and dental procedures. To manufacture this material, the skin is surgically removed from the donor under sterile operating room conditions. ADM is processed by removing the epidermal layer and all cells within the dermis. Because all cells are removed during the tissue processing, viruses cannot be transmitted in ADM. A second anti-viral step is the addition of an antiviral agent, which inactivates HIV. In addition, removal of cells leaves no components to cause the recipient to reject the graft. Compared to unprocessed tissue transplants, ADM possesses no cellular components to stimulate inflammation or rejection. Finally, the tissue is further processed through freeze-drying. The resulting allograft is described as an acellular dermal matrix with normal collagen bundling and organization. Furthermore, the basement membrane complex is intact.[16] There has never been a report of HIV transmission from a transplant that has been freeze-dried.[17]

Summary and Conclusion

This article described replacement of congenitally missing laterals in a case demonstrating that attention to detail and excellent alloplastic tissue grafting resulted in success. The result was excellent, with one caveat (the papillae between #7 and

Classifying Ridge Defects

Seibert classified ridge defects, based on the location of the deformity.[6]

- Class I ridge defects involve a loss in the bucco-lingual width only.
- Class II ridge defects involve a loss in the apico-coronal height only.
- Class III ridge defects have a combination of both bucco-lingual and apico-coronal loss (both width and height).

Allen and colleagues[2] modified Seibert's original classification as follows:

- Type A deficiency is an apico-coronal loss of ridge contour.
- Type B deficiency is a bucco-lingual loss.
- Type C deficiency is a combination of bucco-lingual and apico-coronal loss.

They further subclassified ridge deformities based on the depth relative to the adjacent ridge, as follows:

- Mild deformities are less than 3 mm.
- Moderate deformities ranged from 3 mm to 6 mm.
- Severe deformities have a loss of greater than 6 mm.

#8 are not as long as those between #9 and #10). A method of pontic site development was described that combined orthodontic retention, functionality, esthetics, and adjustability into one thermoformed plastic appliance. Full-face (1:10) and close-up (1:1) images are shown in Figures 10 and 11.

Acknowledgments

The authors thank Young Kim of Intech Dental Laboratory (Henderson, NV) for his expertise in fabricating excellent restorations; and Dr. Zachary Truman (Henderson, NV), who did the orthodontic work for this case. Dr. Featherstone expresses additional thanks to Dr. Brett Magnuson, his "cyber-mentor"; and to Dr. Jimmy Eubank, who also reviewed the case prior to submission.

References

1. Morley J, Eubank J. Macroesthetic elements of smile design. *JADA* 132(1):39-45, 2001.
2. Allen EP, Gainza CS, Farthing GG, Newbold DA. Improved technique for localized ridge augmentation: A report of 21 cases. *J Periodontal* 56(4):195-199, 1985.
3. Eubank J, Morley J, LeSage, B. The Ultimate Anterior Restorative Hands-on Continuum: Accreditation Preparation. UCLA Continuing Dental Education. Los Angeles, California; January-April 2000.
4. Personal correspondence, Brett Magnuson, DMD (Accreditation mentor).
5. Miller PD, Jr. Periodontal plastic surgery [Review]. *Curr Opin Periodontol* pp. 136-143, 1993.
6. Seibert JS. Reconstruction of deformed, partially edentulous ridges, using full thickness onlay grafts. Part I. Technique and wound healing. *Compend Contin Educ Dent* 4(5):437-453, 1983.
7. Seibert JS. Reconstruction of deformed, partially edentulous ridges, using full thickness onlay grafts. Part II. Prosthetic/periodontal interrelationships. *Compend Contin Educ Dent* 4(6):549-562, 1983.
8. Abrams L. Augmentation of the deformed residual edentulous ridge for fixed prosthesis. *Compend Contin Educ Dent* 1(3):205-213, 1980.
9. Garber DA, Rosenberg ES. The edentulous ridge in fixed prosthodontics. *Compend Contin Educ Dent* 2(4):212-23, 1981.
10. Langer B, Calagna L. The subepithelial connective tissue graft: A new approach to the enhancement of anterior cosmetics. *Int J Periodont Rest Dent* 2(2):22-33, 1982.
11. Remagen W, Prezmecky L. Bone augmentation with hydroxyapatite: Histological findings in 55 cases. *Implant Dent* 4(3):182-188, 1995.
12. Buser D, Dula K, Belser UC, Hirt HP, Berthold H. Localized ridge augmentation using guided bone regeneration. II. Surgical procedure in the mandible. *Int J Periodont Rest Dent* 15(1):10-29, 1995.
13. Buser D, Ruskin J, Higginbottom F, Hardwick R, Dahlin C, Schenk RK. Osseointegration of titanium implants in bone regenerated in membrane-protected defects: A histologic study in the canine mandible. *Int J Oral Maxillofac Implants* 10(6):666-681, 1995.
14. Smukler H, Barboza EP, Burliss C. A new approach to regeneration of surgically reduced alveolar ridges in dogs: A clinical and histologic study. *Int J Oral Maxillofac Implants* 10(5):537-551, 1995.
15. Doblin JM, Salkin LM, Mellado JR, Freedman AL, Stein MD. A histologic evaluation of localized ridge augmentation utilizing DFDBA in combination with e-PTFE membranes and stainless steel bone pins in humans. *Int J Periodont Rest Dent* 16(2):120-129, 1996.
16. LifeCell Corporation. Product information for AlloDerm. One Millenium Way, Branchburg, New Jersey 08876.
17. Simonds RJ, Holmberg SD, Hurwitz RL, Coleman TR, Bottenfield S, Conley LJ, Kohlenberg SH, Castro KG, Dahan BA, Schable CA, et. al. Transmission of human immunodeficiency virus type 1 from a seronegative organ and tissue donor. *N Engl J Med* 326(11):726-32, 1992.

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Examiners' Perspective for Richard W. Featherstone, DDS

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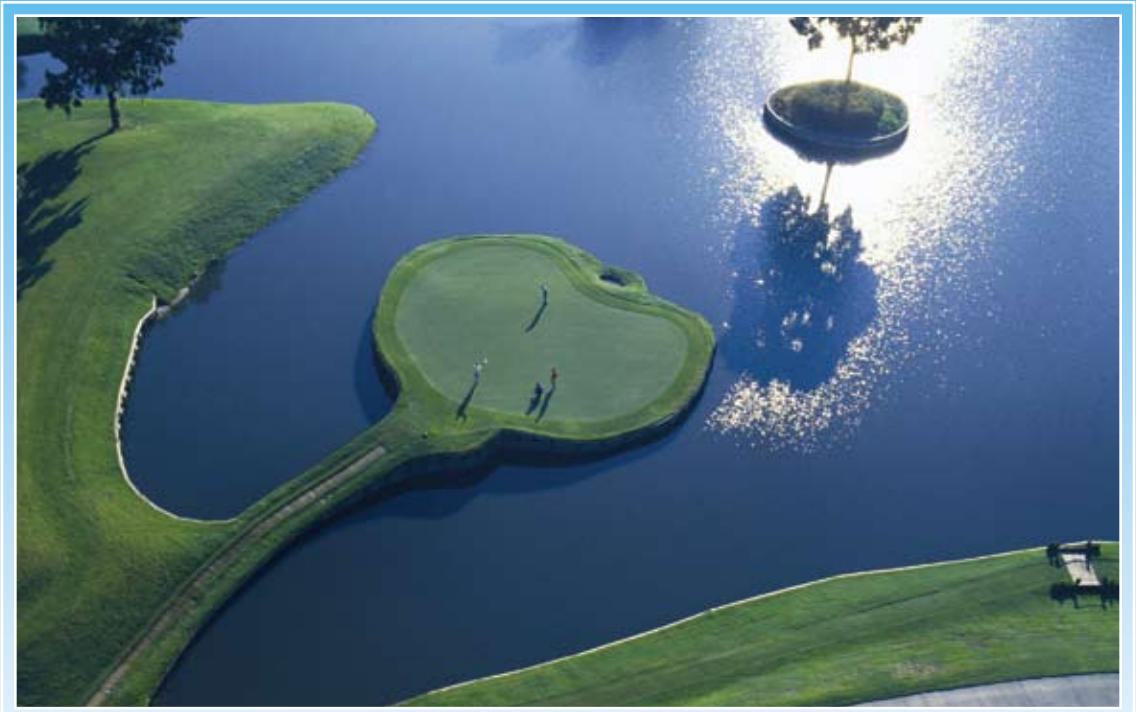
Dr. Richard Featherstone impressed the examiners with his tooth replacement Case Type III, using bridges to replace congenitally missing lateral incisors in a young patient. When utilizing bridges in Case Type III, the Accreditation protocol requires that the bridge be laboratory-fabricated and that at least one pontic must replace an upper incisor or canine. The edentulous space is defined as being devoid of any root structure, so root banking is not permitted.

Dr. Featherstone's case selection was excellent, which set the stage for a successful result. Congenitally missing lateral incisors often present ideal tissue contours for tooth replacement, especially when it comes to tissue heights. Dr. Featherstone recognized that the edentulous ridges were deficient on the buccal and had his periodontist do connective tissue grafts to set up the pontic sites. Developing the edentulous site so that the pontic or the implant-supported crown can emerge naturally from the tissue, achieving normal interproximal connectors or contact areas, as well as symmetrical gingival architecture, are the goals with this case type.

Examiners passed this case unanimously, despite several minor faults. Firstly, gingival issues included blunted papillae both mesial and distal of tooth #7. This could have been due to photographing the case too soon after seating the bridges. (Note: Let the tissue mature before taking your final photographs.) Secondly, the gingival architecture was asymmetrical, with the tissue on tooth #9 being more apically located than the tissue on tooth #8. This has the additional effect of causing the cervical/incisal tooth length of tooth #9 to be longer than tooth #8. Examiners noted the slightly lower value of the pontics, especially tooth #10. One examiner observed that the pontics needed more hypocalcified effects, which would have increased the value.

This case is a good example of a conservative bridge technique, which Dr. Featherstone utilized effectively to achieve Accreditation-level dentistry for his patient. Examiners are always glad to see conservative dentistry when possible. Additionally, one advantage to Maryland-type bridges is that the metal framework allows strength for small interproximal connectors. This is sometimes an issue for all-porcelain connectors that require a larger surface area for strength. Dr. Featherstone's clinical skills are obvious with this well-diagnosed, well-treatment planned, and well-executed Case Type III.

#17 THE PLAYERS STADIUM - TPC SAWGRASS



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Accreditation Clinical Case Report, Case Type III: Tooth Replacement with an Implant

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Introduction

The replacement and restoration of missing or hopeless teeth is influenced by our ability to utilize dental implants to replace single or multiple teeth. In situations where sufficient bone is available or can be grafted, implants often are the best option. Historically, the maxillary anterior portion of the mouth has been a challenge for esthetically oriented practitioners in utilizing implants. This was the case not only in restoring the teeth, but also in maintaining natural contours in the gingival architecture, papillae, underlying and supporting bone, and the gingival contours of crowns used to restore the implants.[1] Fairly recent improvements in techniques, materials, and expertise have helped to alleviate some of these concerns. The positive influence of implants on patient hygiene, bone stimulation and retention, tissue support, and longevity has made all the effort worthwhile.

The exceptional bond strengths obtainable allow remarkable changes in appearance and function, with minimal tooth reduction.

As implant technology has progressed, porcelain laminate veneers also have begun to provide the most optimally esthetic restorations available to the cosmetic dentist today. With conservative tooth preparation and unsurpassed marginal integrity, excellent tissue response can be accomplished. The exceptional bond strengths obtainable allow remarkable changes in appearance and function, with minimal tooth reduction. As our techniques and materials have improved with time, our confidence and expectations in cosmetic results and longevity have been heightened.

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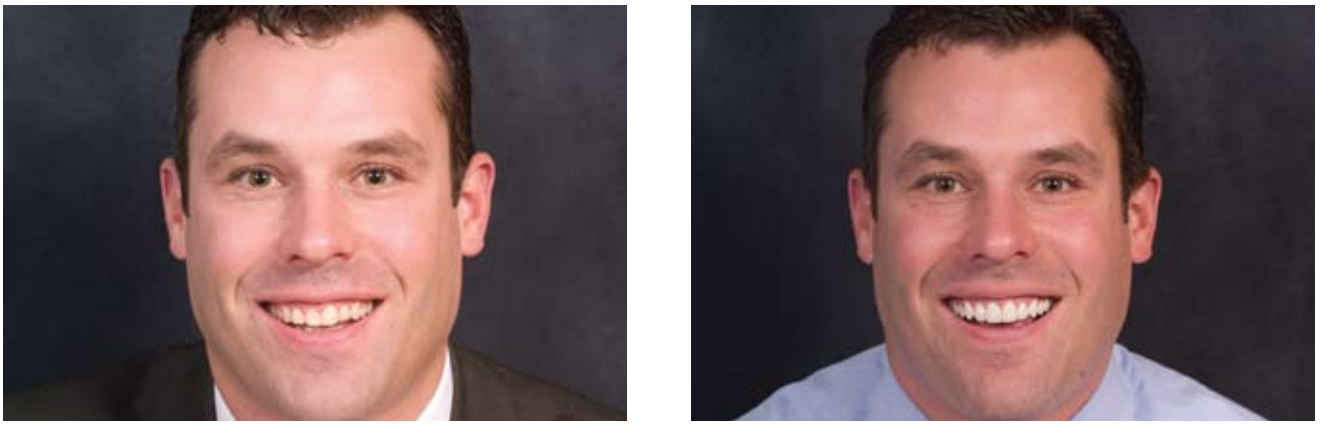


Figure 1: Full-face view, 1:10. Before; discolored and worn dentition create an aged smile. After; bright and youthful smile enhances the patient's face.

Influences on Treatment Planning

Patient perceptions, expectations, general health, periodontal health, occlusion, condition of remaining dentition, and tooth and gingival alignments are some of the factors that influence treatment planning in these cases.[2] Others are tooth shapes, colors, lengths, and relative sizes. The case described here combines the use of an anterior implant restored with an all-ceramic bonded crown and custom abutment, and porcelain veneers to restore the adjacent teeth to appropriate esthetics and function.

Patient History

The patient was a 35-year-old male in excellent health. He was a territorial sales manager for a dental supply manufacturer. His only significant medical history was an allergy to penicillin; and knee surgery several years earlier to repair torn cartilage, a result of college football injuries. As a teenager he had suffered a traumatic injury to tooth #8 while playing basketball, and he reported that it had darkened over time. He also reported no pain associated with the tooth since initial healing from the trauma. There was no history of endodontic therapy and the patient was not aware of the status of the vitality of the tooth. However, he was aware of the discoloration of other teeth and moderate to severe wear in his anterior maxillary and mandibular teeth (Fig 1). He also reported fracture of the mesial-incisal corner of #10, which had been restored with composite. In addition, he was interested in the replacement of his posterior amalgams.

Findings

Clinical Issues

Upon performing a comprehensive examination, we discovered a multitude of dental concerns. Dental hygiene was moderate to poor, causing gingival inflammation. Most of the manifestation was gingivitis with mild Type I periodontal disease scattered locally in the posterior. There were no apparent areas of decay and the posterior amalgam restorations present were moderate in size. There was moderate to severe wear of the anterior teeth.

The patient presented with an Angle Class I posterior relationship and 50% overbite in the anterior. Also, #8 was in function only during protrusive movements. Due to the wear in the canine teeth, the lateral anterior guidance was inadequate and the patient was in anterior group function on the working side on both the left and right. On the right, the centrals, laterals, canines, and first bicuspids were dragging and severely worn. On the left, the same situation involved centrals, laterals, and canines. The antagonistic mandibular teeth also revealed this wear pattern.

The muscles of mastication all appeared healthy and pain-free upon palpation, although the masseter muscles were firm. Both temporomandibular joints were quiet with no noises and no pain on loading in centric relation (CR). The first contact in closure in CR was in the left side second molar area, with no visual slide on squeezing other than compression of the periodontal ligaments. The patient reported no knowledge of clenching or grinding, despite the wear. Vitality testing of #8 revealed no vitality; in addition, mobility was noted.

Figure 2: Frontal smile, 1:2. Before; gingival heights are asymmetrical in the anterior and bicuspid areas. After; the gingival line follows the upper lip harmoniously.

Figure 3: Right lateral smile, 1:2. Before; #8 is discolored, especially in the gingival one-third. After; restored implant in the #8 position blends with adjacent veneers.

Radiographic examination revealed four impacted third molars, a more involved amalgam restoration on #14, and an apparent internal resorption and/or root fracture on #8. There was no periapical pathosis associated with the tooth.

Esthetic Issues

Esthetically, there were several issues apparent to both the practitioner and the patient. The teeth overall were discolored and yellow. Gingival heights were asymmetrical, both in the anterior and in the bicuspid areas (Fig 2). The buccal corridors were not adequately filled. Inflamed tissue was apparent throughout, with stained plaque present at the gingivo-enamel junction. Tooth #8 was darker than the other teeth especially in the gingival one-third (Fig 3). The wear created a much older-looking smile than the patient's chronological age, as did the stained composite on #10 and the dark amalgam restorations on #19 and #30. There was also a moderate amount of crowding in the anterior teeth, which was especially visible from the lateral aspects.

Diagnosis

As noted earlier, the patient presented with gingivitis and scattered, localized Type I periodontal disease. Malocclusion was characterized by an interference to CR, poor anterior guidance, and severe wear in anterior teeth as a result[3] (Fig 4). The mandibular impacted third molars were negatively affecting the periodontal health in the area of tissue attachment to the mandibular second molars. Tooth #8 was suffering from internal resorption and/or root fracture. After referring the pa-

Figure 4: Left lateral smile, 1:2. Before; severe wear due to occlusal problems. After; restored incisal edges create anterior guidance.

Figure 5: Frontal retracted, 1:1. Before; lower gingival height of #8 was an advantage after implant placement. After; note the symmetrical and level gingival heights and papillae of the central incisors.

tient to an oral surgeon and perio/implantologist, all concurred that both internal resorption and a horizontal root fracture existed. (The tissue level on #8 was more incisal to the properly positioned tissue level on #9; this was an advantage, as recession and loss of tissue level can be an issue after implant placement and healing.) (Fig 5). The esthetic diagnosis was general discoloration, (especially #8), severe incisal edge wear, crowding, and asymmetrical gingival levels.

Treatment Plan

The patient was interested in comprehensive treatment planning to restore health, function, and esthetic issues; however, he preferred to delay third molar extractions until the final phase. Therefore, a diagnostic wax-up was utilized to incorporate changes necessary for providing proper occlusion, anterior guidance, and esthetics; and to fabricate a surgical stent for the surgeon in placing the implant in the desired position. The treatment plan was sequenced into three phases as follows:

1. Initial Hygiene Phase

- Provide hygiene instruction and interceptive periodontal therapy, including scaling and root-planing with mini-ultrasonics and laser therapy, with follow-up evaluation.
- Equilibrate to eliminate the CR interference.[4] Remove #8 and replace it with an immediate implant with immediate provisionalization.

2. Restorative Phase I

- Place porcelain veneers on ##4-7 and ##9-13, with a cus-

tom zirconia abutment and an all-ceramic crown to restore #8 implant.

- Whiten and reshape lower anterior teeth.

3. Restorative Phase II (to occur later)

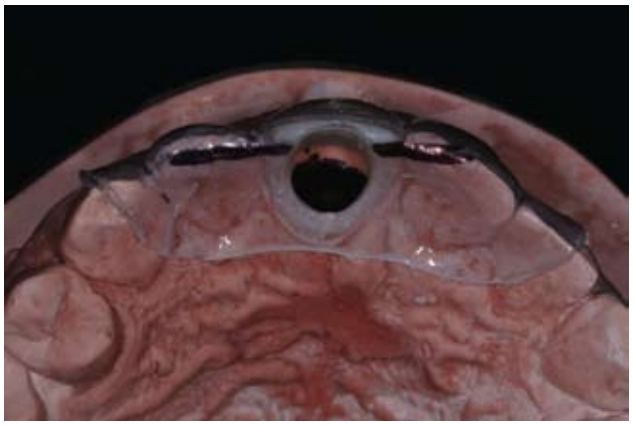
- Extract third molars.
- Replace the old amalgams with resins and porcelain inlay/onlay restorations, and place sealants on all unrestored posterior teeth.
- Place porcelain veneers on ##22-27.
- Deliver nightguard.

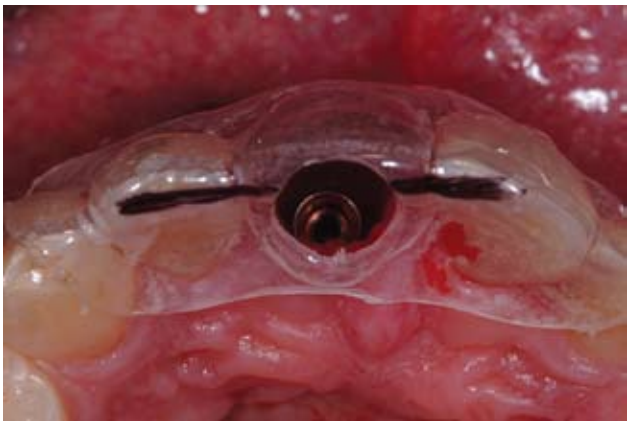
(The patient also will have the option of placing veneers in the lower bicuspid area, depending on his satisfaction with whitening in that area.)

This article addresses the initial hygiene phase and the first phase of restorative care agreed upon by the patient and provider.

Armamentarium

- D-10 35-mm digital camera (Canon; Melville, NY)
- Dimension polyvinyl siloxane (PVS) impression material (3M ESPE; St. Paul, MN)
- Sam III articulator (Great Lakes Orthodontics; Tonawanda, NY)
- Polaroid camera (Kodak; Rochester, NY)
- vacuum-formed stent of wax-up (Great Lakes Orthodontics)
- Sil-Tech PVS putty (Ivoclar Vivadent; Amherst, NY)
- TSV 3.7-mm x 16-mm internal hex implant (Zimmer Dental; Carlsbad, CA)
- HLA contour provisional abutment (Zimmer Dental)
- Vitapan shade guide and Vita 3D shade guide (Vident; Brea, CA)
- 2.5x magnification loupes (Designs for Vision; Ronkonkoma, NY)
- handpieces (Midwest; Des Plaines, IL, and Adec; Newberg, OR)
- 2 % Xylocaine with 1:100,000 epinephrine (Dentsply Pharm.; York, PA)
- Nixon porcelain veneer kit (Brasseler USA; Savannah, GA)
- implant wrench .050 (3I; Palm Beach, FL)
- Odyssey diode laser (Ivoclar Vivadent)
- preparation diamonds (Brasseler USA)
- natural die stumpf guide (Ivoclar Vivadent)
- pumice (Sultan Chemists; Englewood, NJ)
- Dimension heavy- and light-body PVS impression material (3M ESPE)
- Futar bite registration material (Kettenbach Dental; Eschenburg, Germany)
- disposable brush (Centrix; Shelton, CT)
- torque wrench .050 (Vident)
- Superoxol hydrogen peroxide (Sultan Chemists)
- Luxatemp provisional material (Zenith/DMG; Englewood, NJ)
- Authentic pressable porcelain (Jensen Industries; North Haven, CT)
- Insure Clear try-in gel (Cosmedent; Chicago, IL)
- AccuFilm articulating paper (Parkell; Edgewood, NY)
- Optilux 400 curing light (Kerr/Demetron; Orange, CA)
- Consepsis scrub (Ultradent; South Jordan, UT)
- lip retractors (Hager Worldwide; Odessa, FL)
- Ultra-Etch 37% phosphoric acid (Ultradent)
- Hemaseal+Cide desensitizer (Advantage Dental Products; Lake Orion, MI) with Gluma chlorhexidine desensitizer (Heraeus; Armonk, NY)
- OptiBond bonding agents #1 and #2 (Kerr; Orange, CA)
- Insure resin cement system (Cosmedent)
- De-Ox oxygen barrier solution (Ultradent)
- #12 Bard-Parker blade (Becton Dickinson), Franklin Lakes, NJ
- FlexiStrip finishing and polishing strips; FlexiDisc finishing discs (Cosmedent)
- finishing diamonds (Brasseler USA)
- metal finishing strips (GC America; Alsip, IL)
- Epitex finishing and polishing strips (GC America)
- diamond polish (Ultradent)
- Monobond S silane coupler (Ivoclar Vivadent)
- chlorhexidine periodontal rinse (Discus Dental; Culver City, CA)
- porcelain polishing points (Axis Dental; Coppell, TX)
- Enamelize polishing paste (Cosmedent)





Figures 6 and 7: The pre-surgical stent was converted to an esthetic immediate provisional based on the initial diagnostic wax-up, and was utilized to ensure accurate implant placement.

Figures 8 and 9: An interim contour provisional abutment was placed immediately. The initial provisional was then fabricated in order to maintain gingival contours.

Treatment

Periodontal Therapy

The periodontal therapy was completed and followed up to the satisfaction of both clinicians, and then a limited equilibration was performed. Tooth #8 was removed by the periodontist atraumatically and a 3.7-mm x 16-mm internal hex implant was placed with the aid of platelet-rich plasma and peri/implant grafting (Figs 6 & 7). An interim contour provisional abutment was placed immediately (Fig 8), and the pre-surgical stent was converted to an esthetic immediate provisional based on the initial diagnostic wax-up (Fig 9). The importance of an immediate provisional restoration at the time of placement (in conjunction with a minimally invasive surgical protocol) is paramount in the maintenance and sculpting of the soft tissue emergence profile at the free gingival region of the implant restoration. In addition, arching and crown lengthening were preformed in the anterior and bicuspid areas.[5] After three months of healing, the patient was ready for the restorative phase.

Prior to preparation, the tissue response to the surgery was followed closely. After one month a new provisional was fabricated incorporating contours to further shape the tissue for proper emergence contour from the implant.[6] Two weeks prior to preparation, another minor contour adjustment was made to the provisional in order to "push" the tissue to a better and more symmetrical gingival level.[7] In the words of the periodontist, Dr. Paul Petrungaro:

"The importance of an immediate provisional restoration at the time

of placement, in conjunction with a minimally invasive surgical protocol, is paramount in the maintenance and sculpting of the soft tissue emergence profile at the free gingival region of the implant restoration. The contour of the provisional must take into account the planned mesial and distal line angles of the final restoration, in addition to proper contact point relationships to the interproximal height and bone. The immediate esthetic provisional restoration serves to maintain the pre-extraction soft tissue contours, create the proper space maintenance for minimally invasive bone grafting techniques, and guide epithelization of the implant/gingival sulcus to a mature implant/gingival complex."

Preparation

Shade mapping was executed prior to preparation and documented with photographs. (In addition, the patient had previously visited the laboratory to verify shades and characterization.)

Anesthetic was administered. The teeth were initially prepared with depth cuts in three planes: The gingival one-third, middle one-third, and incisal one-third. A round-end diamond was used to reduce remaining tooth structure to these depths, again holding the burr in three distinct planes of reduction.[8] Uniform reduction was accomplished and chamfer marginal finish lines were carried right to the free gingival margin. Interproximal finish lines in the contact areas were carried to the mesial-lingual and distal-lingual areas in order to aid in correcting color. A reduction guide was used and measured with a periodontal probe to ensure uniform reduction as dictated by the diagnostic wax-up.

Shades of the prepared teeth were taken with the stumpf guide and documented with photographs. These shades were equivalent to ND-7 for #6 and #11 and ND-2 for the rest. Fine finishing strips were used interproximally to slightly open the contacts to maximize visualization and finishing by the dental laboratory. The teeth were rinsed, dried, and smoothed with fine finishing diamonds. The provisional crown and abutment were removed last to ensure minimal collapse of the tissue during the impression. The abutment and provisional crown were placed back into the implant in the proper hex position without the screw tightened for the impression; afterwards, an implant analog was attached, prior to the pouring of the models. This gave the ceramist the exact copy of the emergence profile created by the abutment and crown.[9]

The esthetic diagnosis was general discoloration…severe incisal edge wear, crowding, and asymmetrical gingival levels.

After further rinsing and drying of the preparations, an impression was taken with a combination of light-bodied PVS material syringed over the teeth, and a heavier-bodied material in a stock tray. The impression was removed, inspected, and set on the bench. The crown and abutment were removed from the implant and placed carefully back into the impression to ensure proper position. The impression was poured immediately and the crown and abutment recovered upon the setting of the stone. The interim abutment was placed back into the implant and the old provisional crown was cut back so as to save the established contours at the tissue level. This was done so as to be able to make a fresh clinical crown while the provisionals for the other teeth were being fabricated.

Provisionals were fabricated utilizing a putty matrix of the wax-up.[10] After trimming and polishing, the provisional occlusion was checked and adjusted in centric, protrusive, and lateral excursions. Because we were not restoring the lower anterior teeth at this time, we informed the patient that we would enamoplasty the lower teeth in order to accommodate proper function with the provisionals and the final restorations until the lower teeth were completed in Phase II. A facebow, opposing model, CR bite, and stick bite were taken and the stick bite was photographed for the laboratory. The provisionals were placed with interim cement and the occlusion was double-checked.

The patient was given postoperative instructions and was asked to return to the office in three days. At that time, photographs and an impression were taken of the approved provisionals for laboratory usage.

Laboratory Communication

The laboratory prescription described the porcelain veneer restorations and the design for the custom abutment and all-ceramic crown. They were to be pressed, cut back, and layered with feldspathic porcelain to provide ultimate control in color, characterization, and translucency.

The zirconia abutment was to be fabricated to follow the tissue contours we had established for support of the tissue and proper emergence contours. We also requested that the clinical crown portion of the abutment be shaped exactly like

the veneer preparation on the adjacent central incisor. The color was to match the dentin stumpf shade of the other central incisor, in order to help achieve matching color and value in the final restorations. Included with the prescription were the impression, opposing impression, initial photographs, shade photographs, bite registrations, facebow, photographs of dentin shades, photographs of approved provisionals, and an impression of the provisionals. The laboratory also had their shade verification on record.

Insertion and Finishing

The veneers and crown were inspected on working and soft tissue solid models for integrity of margins, contacts, and passive fits. An incisal putty guide was fabricated from the provisionals and checked against the incisals of the finished restorations to ensure adherence to our specifications. All aspects appeared acceptable.

The patient was given anesthetic, and the provisionals were removed with pressure from a scaler between the margin of the provisional material and the prepared tooth. The interim abutment was removed from the implant and the final abutment was placed to ensure that all specifications had been met. The preparations were pumiced, rinsed thoroughly, and dried. The restorations were tried in; first, individually to ensure fit and marginal integrity, and then together to observe contacts and relative contour in the mouth. The patient was extremely happy with the color, value, characterization, and translucency of the restorations. A clear try-in gel was placed in the veneers for further evaluation. The color was very pleasing and the patient was allowed to view the veneers in the chair, at a mirror on the wall standing upright, and at a window with natural light. Although the patient was happy with all views, the practitioner perceived a slight difference in value with the central incisors and the other anterior veneers. After employing several try-in gels it was determined that the best overall match would be accomplished by using clear luting resin for all teeth except #8 and #9, and using a white opaque luting resin for these two teeth.

The team approach…along with careful planning and communication, enabled us to achieve optimal results.

The abutment was torqued with 20 N.cm of pressure. The veneers and crown were carefully cleaned with cotton pellets and water, dried and decontaminated with phosphoric acid, rinsed, dried, and silanated. A thin layer of filled resin was coated over the silanated surface, air-thinned, and covered to protect from polymerization from ambient light. The prepared teeth were isolated with lip retractors, scrubbed with chlorhexidine, rinsed, and dried. A 37% phosphoric acid gel was applied to the teeth for 12 seconds. The teeth were rinsed, dried, and coated with desensitizer for decreased sensitivity possibilities and re-wetting of the dentin. The excess was blotted and the teeth were saturated with several coats of dentin primer.[11] After 20 seconds the excess was dried with a light warm moisture-free air spray and cured for 20 seconds. The teeth were then coated with a thin layer of partially filled resin. The luting resin was placed into the veneers. The veneer on #9 and crown on the abutment at #8 were placed simultaneously. This was followed by placement of #6 and #7, #4 and #5, #10 and #11, and #12 and #13.

The veneers were placed on the teeth with light, even pressure until fully seated and the excess luting resin removed with brushes, explorer, and resin applicator. Initial curing was a spot tack from the lingual. The remaining resin was removed with brushes, explorer, and floss. Curing was commenced at that point from the lingual to pull the resin toward the light and into the dentin. The margins were covered with oxygen-barrier gel to prevent an oxygen-inhibited layer. Each veneer and the crown was cured for 90 seconds from all angles. Further excess cement was removed with a #12 blade interproximal carver and fine finishing strips.

The lingual margins were blended and refined with fine finishing diamonds. The interproximal areas were refined with fine finishing strips both metal and plastic. Occlusion was evaluated and adjusted in centric, protrusive, and lateral excursions. All surfaces were smoothed and polished with rubber porcelain polishing points and finished with porcelain polishing paste. The patient was seen one week later for a postoperative appointment to refine occlusion, esthetics, and comfort. All appeared acceptable at that time. He was supplied with a nightguard to protect his investment.

Summary

This case was extremely rewarding because it was a transformation for the patient and a great learning experience for the practitioner. There were many challenges in the diagnostic, treatment planning, and

clinical aspects of this case. However, the team approach of the periodontist, laboratory, and restorative dentist, along with careful planning and communication, enabled us to achieve optimal results.

Just as many of us in dentistry have practiced what we preach and have had our mouths restored, this dental manufacturer's representative believed in our profession and chose to improve his smile. His desire to maximize his appearance and health allowed us to plan and deliver excellent care, exceeding his expectations.

Acknowledgments

The authors are grateful for the exceptional multidisciplinary teamwork involved in this case. They extend appreciation to Edgar Jimenez of Edgar Jimenez Dental Studio (North Oaks, MN) for his ceramic artistry.

References

1. Bakeman E, Sesemann M. *Maximizing Success and Minimizing Risk with Esthetic Implant Treatment Solutions* [lecture]. Presented at the 23rd Annual American Academy of Cosmetic Dentistry Scientific Session, Atlanta, GA; May 16, 2007.
2. Chiche G, Pinault A. *Esthetics of Anterior Fixed Prosthodontics*. Hanover Park, IL: Quintessence Books; 1994.
3. Dawson PE. *Functional Occlusion* (chapters 1, 2, 7, 16, 31, 33, 35, 39, 41). St. Louis, MO: Mosby; 2007.
4. Dawson PE. *Evaluation, Diagnosis, and Treatment of Occlusal Problems* (2nd ed.). St. Louis, MO: Mosby; 1989.
5. Hudson P. *Lasers in Dentistry* (lecture). Presented at the International Center for Dental Education, Minneapolis, MN; May 12, 2006.
6. Hornbrook DS. Provipont and Provilink. Maximizing esthetics and function when fabricating provisional restorations. *Signature* Summer:10-16, 1995.
7. Kokich VO Jr., Kiyak AH, Shapiro PA. Comparing the perception of dentists and lay people to altered dental esthetics. *J Esthet Dent* 11(6):311-324, 1999.
8. Nixon RL. *Mastering Porcelain Veneers* (hands-on clinic). Presented by Valley Dental Arts, Inc., Minneapolis, MN; September/October 1993.
9. Petrungaro P. *Advanced Aesthetic Implant Protocols* [lecture]. Presented by The Institute for Advanced Dental Education, Inc., Stillwater, MN; March 20, 2007.
10. Strupp WC, Jr. Achieving predictability in anterior crown and bridge with the use of indexes. *Crown and Bridge Update* 9:65-71, 1997.
11. Miller M, Castellanos I. *Reality 2006*. Houston, TX: Reality Publishing; 2006.

Examiners' Perspective for Steven A. Gorman, DDS

by J. Fred Arnold, III, DMD
Lexington, KY
www.lexingtonsmiles.com

Dr. Steven Gorman utilized an implant very effectively to achieve Accreditation-level results for his Case Type III. When using an implant for Case Type III, the root form implant must be placed in an upper anterior edentulous space. Protocol requires that preoperative x-rays and photographic views show the edentulous space or failing tooth prior to implant placement; therefore, the replacement of a crown on an existing implant is not acceptable.

When preparing multiple teeth, as Dr. Gorman did, Case Type III also becomes a smile design case, with most of the Accreditation criteria applying to the evaluation. Macro esthetic principles were handled well by Dr. Gorman, including the proper development of the buccal corridor, incisal embrasures, axial inclinations, tooth proportion, and central dominance. The smile line was an issue, however, with points being deducted because of the incisal plane being canted up to the left.

Dr. Gorman did a beautiful job developing the soft tissue around the implant. The implant crown appears to emerge naturally from the tissue with nice papillae heights and symmetrical gingival architecture with the contralateral tooth. This case selection was ideal, with the soft tissue being coronally located on the failing tooth.

A common fault found with this case was the gingival inflammation that was present around several teeth. Examiners also noted the opaque and monochromatic characteristics of the porcelain, which cost Dr. Gorman some points. The slight difference in value between teeth #8 and #9 also raised concern with the examiners. These were all minor faults, with this case easily falling into that zone of excellence needed to pass Accreditation Case Type III.

It has been exciting as an examiner to see the large numbers of implant cases and interdisciplinary treatment that candidates are utilizing for Case Type III. The long-term prognosis of implants has proven over time to be better than that of bridges, and they are certainly more conservative than traditional bridges. I am proud to see the American Academy of Cosmetic Dentistry leading the way in our profession in promoting conservative, state-of-the-art dentistry.

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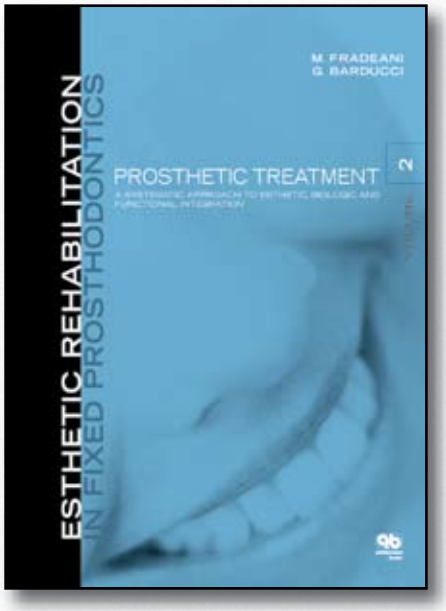

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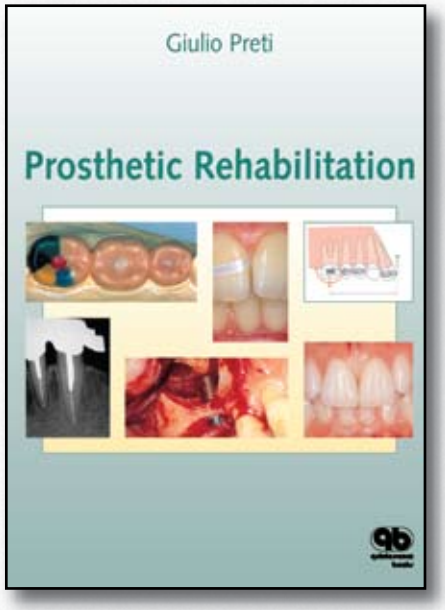

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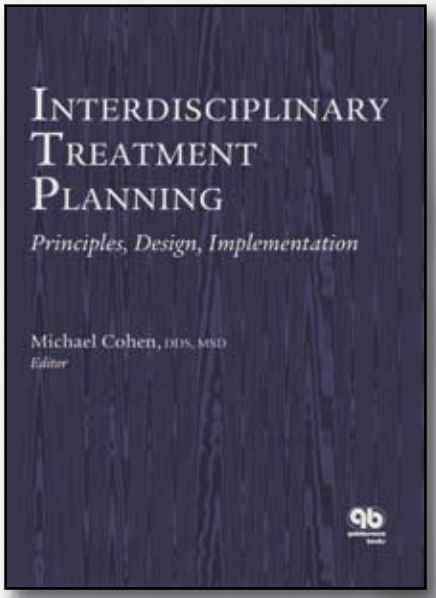

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Accreditation Success Story: Accreditation—Just Five Cases Away

by Jorge R. Blanco, DDS
South Miami, FL
www.imagesdental.com

I first heard of Accreditation in 1999 in San Antonio, at my first annual AACD scientific session. I remember running into a small mob of frenzied dentists carrying and showing each other piles of slides. Then I ran into a dental school classmate whom I had not seen for many years; she was being congratulated by those around her for her recent accomplishment. When I asked what she had achieved, she replied that she had just become Accredited. She added that the panicky-eyed dentists I had seen tossing slides at each other were about to take their Accreditation Oral Examination and they were "just preparing." While happy for my friend (and a touch envious of the attention she was receiving), I certainly did not want to become one of those "frenzied, slide-carrying dentists." I dismissed the thought of Accreditation and continued to enjoy the lectures and new friendships I was developing at the scientific session.

The "Inquisition" exam format became a thing of the past.

Fast-forward nine years to Chicago, February 2008. I was sitting outside a room eagerly waiting my turn to take the oral examination, the last step in the Accreditation process. I felt a strange calm and my thoughts drifted. "*Wow*!" I thought, "*I made it, I'm almost there, and I can taste it*." Just 90 minutes more and this journey would come to an end. There was a bit of sadness in that thought; the journey had been long and hard and, in a strange way, I would miss the process.

What happened in between San Antonio and Chicago that so completely changed my mind about Accreditation? For one thing, the scene in Chicago was certainly not what I had witnessed nine years earlier and had sworn never to pursue. Where was the frenzy? Where was the chaos? What happened is that *the process had evolved*. I was one of the last remaining "transition" candidates. When I began the Accreditation process, it was a one-shot deal: Candidates had to bring *all five cases* in slide carousels and present their cases orally. They were given either a pass, a conditional pass, or they failed

and had to start over. No wonder those poor dentists I had witnessed in San Antonio were so anxious!

With the evolution of the Accreditation process came AACD-sponsored photography courses, criteria workshops, mentors, and Accreditation criteria and photography guideline books. Examiners were calibrated. Digital photography was allowed. The "Inquisition" exam format became a thing of the past. The written examination became the first phase in the process, and was followed by clinical case submissions, where trained Accreditation Examiners reviewed cases anonymously. A final oral examination allowed candidates to present their previously passed cases and speak candidly about how and why they treated their cases. The process had become more user-friendly… but *not* less rigorous.

Drs. Larry Rosenthal, Jeff Morley, Jimmy Eubank, George Kirtley, Kenneth Hamlett, Mike Malone, Corky Willhite, Buddy Mopper, Newton Fahl Jr., Elizabeth Bakeman, J. Fred Arnold, and a stream of others helped to stimulate, test, and challenge me to reach this level of achievement. I made many friendships during the criteria courses, as well as during the countless esthetic continuums. We shared our fears and thoughts as we grew and improved together. This unity is important because the Accreditation journey should not be traveled alone. Support from my staff and family was vital to my success; in fact, my Accreditation patients consisted solely of friends and staff. This made it much easier for me to say, "*I need you in the chair again.*" The strength and encouragement of people close to me helped me to overcome my fear of becoming one of those anxious dentists I saw in San Antonio.

The process had become more user-friendly…but not *less rigorous.*

I cannot emphasize enough the importance of continuing education courses such as those offered by The Rosenthal Institute Aesthetic Advantage, Louisiana State University's Esthetic Continuum, The Dawson Academy, The Pankey Institute, The Seattle Institute for Advanced Dental Education, and countless others in my pursuit of Accreditation.

I walked into the oral examination room full of anticipation (and, I must admit, a bit nervous). The Accreditation Examiners' friendly faces helped to ease my nerves, but did not make the examination process any easier. However, once my initial anxiety subsided, I started to enjoy the oral examination process; it was more like a conversation you would have with a colleague over cases that you are treating.

A few weeks later I received the all-important letter stating, "*Congratulations on achieving Accredited status with the American Academy of Cosmetic Dentistry.*" The feeling of accomplishment, and the accolades I received on the successful completion of my journey, were priceless.

What now? During my Accreditation journey I couldn't help but peek at what comes next… Fellowship. "*No way,*" I thought, "*50 cases? Those dentists must be crazy.*" Hmm… 50 cases doesn't sound so bad. Perhaps I'll write again in a few years...

Newly Accredited Members

Duane H. Beers, DMD

Dr. Beers is a 1975 graduate of the Washington University School of Dental Medicine in St. Louis, Missouri. After training with the U.S. Indian Health Service, he established his practice in Socorro, New Mexico, in 1980. He received the Academy of Laser Dentistry's (ALD) Leon Goldman Award for Excellence in Laser Dentistry in 2002. Dr. Beers is a charter member of the American Association of Functional Orthodontics and of the ALD. He is a Fellow of the Academy of General Dentistry (AGD) and a member of the American Dental Association (ADA). He joined the American Academy of Cosmestic Dentistry (AACD) in 2002. Dr. Beers regularly participates in medical mission trips through organizations such as Global Health Outreach and Healthcare Ministries.

Jorge R. Blanco, DDS

Dr. Blanco received his dental degree from the University of Tennessee in Memphis in 1988, and has been in private practice in Miami since 1989. Dr. Blanco credits three continuing education venues in particular for his interest in advanced restorative and cosmetic dentistry: The Dawson Academy, the Louisiana State University (LSU) Esthetic Continuums, and The Rosenthal Institute Aesthetic Advantage at New York University (he also serves as a clinical instructor for the latter). Dr. Blanco has been a member of the AACD since 1995 and serves on the Board of Trustees for the AACD Charitable Foundation. He and his wife, Cristina, have three children.

Tim M. Bradstock-Smith, BDS

Dr. Bradstock-Smith qualified from London's University College in 1989. He has had a private practice focused on cosmetic dentistry since 1994, and opened the London Smile Clinic in 1999. Dr. Bradstock-Smith has been published in U.K. dental journals on such topics as computer imaging and gum lifts. He is a director of Straight Talk Seminars, which provides hands-on training in various aspects of cosmetic dentistry and removable orthodontics. Dr. Bradstock-Smith was one of the first British members of the AACD and one of the first directors of the British Academy of Cosmetic Dentistry.

Steven H. Brooksher, DDS

Dr. Brooksher earned his dental degree from the Louisiana State University School of Dentistry (LSUSD) in 1978. He is a member of the ADA, the AGD, and the L.D. Pankey Alumni association. He has completed the LSUSD Esthetic Continuum Levels I & II. An AACD member since 2000, Dr. Brooksher attended his first annual AACD scientific session in 2001. Dr. Brooksher and his wife, Margaret, have five children and reside in Baton Rouge, Louisiana, where he has enjoyed private practice for 30 years.

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David S. Eshom, DDS

Dr. Eshom is a general dentist emphasizing dental health and beauty in his private practice in La Jolla, California. He received his dental degree from the University of the Pacific School of Dentistry in 1985. He served six years on the AACD's Board of Directors and the Southwest affiliate of the AACD. He lectures and teaches on the use of lasers in cosmetic dentistry and is a cosmetic adviser for the World Clinical Laser Institute. Dr. Eshom uses lasers extensively in his office to provide minimally invasive cosmetic dentistry. Outside of dentistry, Dr. Eshom enjoys spending time with his wife, Karen, and their two children.

Richard W. Featherstone, DDS

Dr. Featherstone received his dental degree from the University of California-San Francisco Dental School in 1972. He then served two years at Anderson Air Force Base, Guam, completing rotations in oral surgery, endodontics, and prosthodontics. He practiced in Salt Lake City until March 2002, when he moved to Las Vegas to build his fourth dental office and new practice. Dr. Featherstone is a Fellow in the AGD (and was named the Utah AGD's Dentist of the Year in 2001); an Associate Fellow in the American Academy of Implant Dentistry; and a member of the ADA. He also has been inducted into the Pierre Fauchard Academy. He and his wife, Emily, have two daughters and three sons.

Michael K. Forth, DDS

Dr. Forth completed his dental degree at Temple University School of Dentistry in Philadelphia. He then served two years at the General Leonard Wood Army Community Hospital in Fort Leonard Wood, Missouri. Dr. Forth began his private practice in Edmond, Oklahoma, in 1973 and has practiced restorative, reconstructive, and cosmetic dentistry since that time. In addition to providing service to his community through dentistry, he has been active in public service as chairman of the Edmond Social Services Commission for eight years. Dr. Forth recently served as chairman of the Board of Trustees for the AACD Charitable Foundation.

Tannaz T. Goodjohn, DDS

Dr. Goodjohn is a 1991 graduate of the University of California, Los Angeles (UCLA) School of Dentistry. She maintains a solo general practice with emphases in esthetic, reconstructive, and implant dentistry in Los Angeles, California. A firm believer in continuing education, Dr. Goodjohn is a graduate of Esthetic Professionals, the LSU Esthetic Continuum, the Eubank Teaching Institute, and the Pacific Aesthetic Continuum. She is a past president of the Los Angeles Association of Women Dentists and is currently a faculty member at Esthetic Professionals. Dr. Goodjohn resides in Laguna Niguel, California, with her husband and daughter.

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M. Johnson Hagood, DDS, FAGD

A 1991 graduate of the University of North Carolina School of Dentistry at Chapel Hill, Dr. Hagood has a restorative practice in Vero Beach, Florida. He is a Fellow of the AGD, an alumnus of the Pankey Institute, co-founder of the Bob Barkley Study Club, and founder and past president of the Indian River Pankey Affiliated Learning Group. He has facilitated workshops for intraoral photography and fabrication of provisionals and serves as associate consultant with Mark 4 Associates, a firm dedicated to helping dentists transition their practices toward a fine-restorative model. He enjoys spending time with his wife, Dana, and their two children.

Emil Hawary, DDS, FAGD, DICOI

Dr. Hawary graduated from Cairo University Dental School in Egypt in 1988. He has taken numerous continuing education courses and advanced programs throughout the U.S. and internationally, and was particularly inspired by the UCLA Aesthetic Continuum and courses at the Seattle Institute for Advanced Dental Education. Dr. Hawary has written several articles on cosmetic and implant dentistry. He maintains a private general practice in Irvine, California, with an emphasis on cosmetic and reconstructive dentistry. Dr. Hawary enjoys swimming, kayaking, sailing, scuba diving, and traveling with his wife, Nadine.

Kenneth F. Hovden, DDS

Dr. Hovden graduated from the University of the Pacific (UOP) School of Dentistry in 1981, and practices in Daly City, California. He has been fortunate to study with some of dentistry's great educators, including Drs. Peter Dawson, Frank Spear, Steve Buchanon, Mark Piper, David Hornbrook, Pascal Magne, Newton Fahl, Jr., and John Kois. Dr. Hovden teaches endodontics at UOP, the use of the surgical microscope at IDEA USA, and advanced esthetic restorative dentistry with the Hornbrook Group. Three years ago he founded Bay Area Aesthetic Masters, a Hornbrook Group affiliate study group. Dr. Hovden and his wife, Laura, have two children.

Ted J. Murray, DDS

Dr. Murray is a 1977 graduate of the University of Iowa College of Dentistry. He completed a General Practice Residency (GPR) at the VA Medical Center in Iowa City, and has been in private practice in Dubuque, Iowa, since 1978. He became a Master in the AGD in 1995, and attended the Pankey Institute and the Center for Esthetic Excellence. Dr. Murray earned a Certificate in Esthetic and Contemporary Restorative Dentistry from the esthetic program at the University of Minnesota. He is also a graduate of the Las Vegas Institute, where he is a clinical instructor. He is president-elect of the Iowa Academy of General Dentistry.

Nelson A. Rego, CDT

Mr. Rego owns and operates Smile Designs by Rego, a progressive dental laboratory specializing in ceramics. He established the laboratory in Santa Fe Springs, California, in 1980 with his brother Juan Rego, CDT. Mr. Rego has studied with some of the best dentists and ceramists in dentistry today. He has written numerous articles pertaining to dental materials and techniques, which have been published in leading dental journals; he also has lectured nationally and internationally. In addition, Mr. Rego is an evaluator and speaker for several dental product manufacturers, including Ivoclar Vivadent, Vident, and Axis Dental.

John C. Roberts, DDS

Dr. Roberts graduated from the University of the Pacific School of Dentistry in 1995 and practices in Twin Falls, Idaho. One of the original clinical instructors with the Hornbrook Group, for the past eight years he has instructed hands-on, live patient programs on cosmetics, occlusion, and full-mouth rehabilitation. Dr. Roberts has been published in leading dental journals and lectures nationally. He is also the co-founder and director of education for Smart Implants, a company that seeks to help surgeons improve the strength, longevity, and esthetics of dental implants. Dr. Roberts spends his free time with his wife, Christie, their son, and twin daughters.

Michelle Y. Robinson-Weber

Ms. Robinson-Weber is a ceramist for CMR Dental Laboratory and a clinical instructor with Team Aesthetic Seminars in Idaho Falls, Idaho. She has taught many clinical programs with Matt Roberts and leading dentists across the United States. Utilizing the knowledge and experience gained from her clinical and laboratory background, Ms. Robinson-Weber specializes in esthetic and reconstructive cases fabricated from a full range of restorative materials to produce vital, beautiful smiles. She has co-written several articles and was one of the winners of Ivoclar Vivadent's 2005 Model Mania contest.

Troy A. Schmedding, DDS

Dr. Schmedding is a 1993 graduate of the University of the Pacific School of Dentistry. He has been in private practice in Issaquah, Washington, for the last 13 years, with a special emphasis on cosmetic and restorative dentistry. In addition to the AACD, Dr. Schmedding is a member of the ADA, the Washington State Dental Association, the Seattle King County Dental Society, and the Dental Organization for Conscious Sedation; he is also an advisor to the Seattle Summit Dental Study Group. Dr. Schmedding enjoys golf, fly fishing, traveling, and spending time with family and friends. He and his wife, Jessica, have two children.

John W. Simmons IV, DMD

Dr. Simmons is a 1982 graduate of the Medical College of Georgia School of Dentistry; he then served for several years as a dentist in the U.S. Navy. Dr. Simmons' private practice in Atlanta focuses on complex cosmetic restoration, temporomandibular disorders, and occlusal therapy. A Fellow of the AGD, he is a graduate of the Pankey Institute, The Dawson Academy, and the LSU Esthetic Continuums I and II. In his spare time, Dr. Simmons enjoys spending time with his wife and three teenage daughters, water-skiing on Lake Burton in the North Georgia mountains, gardening, and serving at his church.

Jenny C. Sun, DDS

Dr. Sun received a Commendation from the U.S. Navy as head of chemistry at the U.S. Naval Medical Center in Yokosuka, Japan, in 1979. She graduated from the UCLA School of Dentistry in 1985. From 1986 to 1990, Dr. Sun taught at the University of Southern California School of Dentistry, Restorative Department. Besides maintaining a private practice in Claremont, California, she is an assistant professor and past co-director of the esthetic course at Loma Linda University School of Dentistry. She is also a faculty member of the Orognathic Bioesthetic Institute, and chair of the ethics committee of the Tri-County Dental Society.

William H. Swearingen, DDS

Dr. Swearingen graduated from the University of California-San Francisco in 1975, and then completed a GPR at Balboa Naval Hospital in San Diego as an officer in the U.S. Navy. This was followed by four years stationed at the U.S. Naval Air Base in Atsugi, Japan. In 1980, Dr. Swearingen established a general practice in Citrus Heights, California. Dr. Swearingen has attended many continuing education courses, including those taught by Drs. Peter Dawson, John Kois, David Hornbrook, Buddy Mopper, and Corky Willhite; he also attended the Las Vegas Institute. Dr. Swearingen enjoys golfing, traveling, and spending time with his wife, Robyn, and their family.

Scott R. Wehrkamp, DDS

Dr. Wehrkamp is a 1979 graduate of Loyola University School of Dentistry in Chicago. Since 1981 he has maintained a private practice in Brandon, South Dakota, with his brother, Jeff. Dr. Wehrkamp's comprehensive/cosmetic approach to case management has evolved to include orthodontics, cosmetic periodontal surgery, implants, and single tooth to full-mouth reconstruction. His mentors include Drs. Peter Dawson, Waldemar Brehm, John Kois, Paul Petrungaro, and many others. Dr. Wehrkamp also maintains memberships in the ADA, the South Dakota Dental Association, the Southeastern District Dental Society, the American Equilibration Society, and the Chicago Dental Society. He has a son and three daughters.

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Clinical Science and Art

In This Section:

Direct Resin Veneers—The Art of Creating a Smile

by Keri L. Do, DDS
Honolulu, HI
keridodds@gmail.com

Introduction

Direct resin veneers are one of the most challenging yet rewarding treatment options in cosmetic dentistry. When taken to a high level of excellence, they can produce unparalleled esthetics as well as function. Because patients can see an immediate transformation, this treatment creates tremendous patient satisfaction. Direct resin veneers can give the dentist full artistic control over the esthetic outcome of the case, resulting in a smile that rivals those created by nature. They also can be extremely conservative, with minimal tooth preparation required. This process allows the dentist to utilize and showcase all of her or his skills in creating a smile directly chairside.

Direct resin veneers can give the dentist full artistic control over the esthetic outcome of the case.

History

The patient was 29 years old and in excellent health, with no significant medical history. She had had a rhinoplasty when she was a child to correct an injury from a baseball accident. Years later, a second rhinoplasty was performed, leaving her nose slightly deviated to her right (Fig 1).

Findings and diagnosis

Diagnostic records were taken and a full-mouth examination was done. Records included a full-mouth set of radiographs, the 12 photographic views required by the American Academy of Cosmetic Dentistry, models, facebow, and occlusal records.

Clinical Findings

Clinical examination of the patient revealed good periodontal health. She had very little gingival inflammation, and her gums were healthy with very

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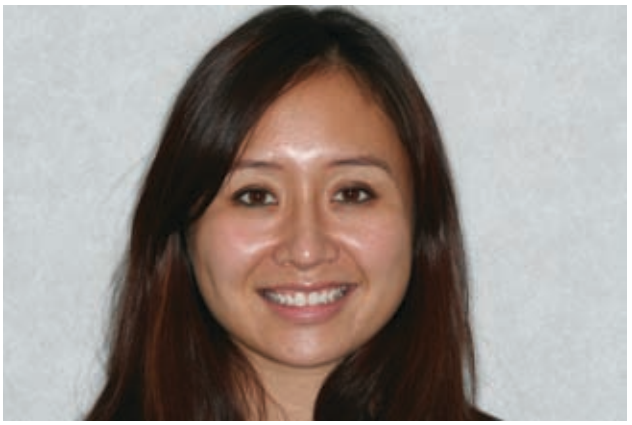

Figure 1: Before; facial view.

slight bleeding upon probing. There was no decay upon radiographic and clinical examination. There was no sign of pathological wear on her teeth. Her bite classification indicated that she had a Class II molar relationship with a slight centric relation-centric occlusion discrepancy. However, the temporomandibular joints had no history of pain or sounds, and were comfortable upon loading using bimanual manipulation.[1] Her lower front teeth had existing composite resin to close a diastema between #24 and #25, and there also were some Class III composite resins on #23 and #24.

Esthetic Findings

The esthetic findings included teeth that were tilted lingually and not filling out the buccal corridor, a small diastema between the maxillary centrals, a "gummy" smile that exhibited slightly more gingiva on the right side than the left side, plus a midline and an occlusal plane that were slightly tilted to the patient's left. The incisal edge and gingival height of #8 also were slightly longer than #9.

Treatment Plan

The treatment goal was to give the patient a bigger smile to fill out the buccal corridor (Figs 2 & 3). Because her teeth were tilted lingually it required very little removal of tooth structure, resulting in much stronger bond strength with enamel. The treatment plan included doing tissue recontouring to give the patient a less gummy smile and a balanced gingival height. Ten direct resin veneers would then be done to address her primary chief concerns: To correct the lingually tilted teeth; to close the diastemas; and to give her a brighter, whiter smile. Home whitening would be done so that her lower opposing teeth would match her upper veneers.

The treatment goal was to give the patient a bigger smile to fill out the buccal corridor.

Before the actual preparation and treatment appointment, the models were mounted and waxed up to full contour. A model and stent of the wax-up was fabricated to facilitate an intraoral mock-up. A mock-up using the resin shade of the patient's choice was done directly on her teeth to give her a preview of her new smile (Fig 4). This mock-up allowed her esthetic needs to be coordinated with her existing occlusal scheme. An impression was taken of this intraoral mock-up and was cross-mounted on a semi-adjustable articulator against her opposing model. This would provide a guide to better prepare for the actual treatment appointment.

Armamentarium

- MiniStar vacuum-forming device (Great Lakes Orthodontics, Tonawanda, NY)
- SoftLase soft tissue laser (Zap Lasers; Pleasant Hill, CA)
- EOS Rebel digital camera (Canon USA; Melville, NY)
- 2.5x magnification loupes (Designs for Vision; Ronkonkoma, NY)
- Opalescence 20% whitening gel (Ultradent; South Jordan, UT)
- Ultrapak retraction cords (Ultradent)
- 37% phosphoric acid etching gel (Pentron; Wallingford, CT)

Figure 2: Before; small, narrow smile. After; broader, more attractive smile.

Figure 3: Before; occlusal view. After; anatomy and embrasures seen from occlusal view.

Figure 4: Smile view of a mock-up done to give the patient a preview of her smile and to work out any occlusal problems.

Figure 5: Tissue recontouring done with a laser to slightly lift and even the gingival level.

Figure 6: Teeth are prepared with minimum reductions, keeping most of the bond on enamel.

Figure 7: Using the stent as a guide, the first layer of composite is placed.

- Clearfil SE Bond bonding agent (Kuraray America; New York; NY)
- composite placement instruments (Cosmedent; Chicago, IL)
- Creative Color tints and opaque shades (Cosmedent)
- Renamel microhybrid and microfill composites (Cosmedent)
- ViscoStat Clear hemostatic gel (Ultradent)
- 30% hydrogen peroxide
- diamond burs (Brasseler USA; Savannah, GA)
- #ET9 and #7406 burs (Brasseler USA)
- Vision Flex discs (Brasseler USA)
- Ceramiste points (Shofu Dental; San Marcos, CA)
- FlexiDisc finishing discs and Enamelize polishing paste (Cosmedent)
- Allegro cure light (Den-Mat; Santa Maria, CA)
- Microbrush plus (Microbrush; Grafton,WI)
- #12 Bard-Parker blade (Becton Dickinson; Franklin Lakes, NJ)
- AccuFilm articulating paper (Parkell; Edgewood, NY)
- Artex semi-adjustable articulator and facebow (Jensen Industries; North Haven, CT)
- Jeltrate alginate (Dentsply Caulk; Milford, DE)
- yellow stone and plaster (Kerr, Orange, CA)

Treatment

Preparation

A clear matrix was taken of the mock-up model, which was cross-mounted after the occlusion and esthetics were fine-tuned. This matrix was then trimmed to the incisal edges and used as a guide for the resin placement. Another clear stent of the model was made, and holes were drilled through the facial surface to act as a preparation guide for the veneers.[2] The patient was anesthetized with lidocaine with 1:100,000 epinephrine. Gingival contouring was done using a soft tissue laser for all the upper anteriors (Fig 5). A periodontal probe was used to sound to bone to avoid invading the biological width. A 30% hydrogen peroxide solution was used to clean the tissue and then carefully rinsed off. To isolate the gingival area, a retraction cord saturated with a clear hemostatic agent was placed.

All six anterior teeth, ##6-11, were treated at one time. A minimum preparation was done using a chamfer diamond (Fig 6). One of the clear stents was then used to measure for adequate reductions. The preparation was then cleaned with a hydrogen peroxide solution and rinsed. A clear matrix strip was placed in between each of the teeth for isolation. The teeth were then etched with 37% phosphoric acid, rinsed, and dried. A layer of bonding agent was placed, blown thin, and cured for five seconds. A layer of hybrid composite was placed on the six anterior teeth with a clear stent and cured for 40 seconds per tooth (Fig 7). A thin coat of honey yellow tint was placed on the gingival area[3]; this was cured for 40 seconds.

Layering

Next, a layer of microfill composite was placed, and internal sculpting was achieved with a multi-use composite placement instrument (Fig 8). This was used to create internal mammelons and was cured

Figure 8: Sculpting was done to create internal mammelons.

Figure 9: Before and after; anatomy and texture can be seen from a lateral view.

Figure 10: Before and after; retracted view 1:1.

Figure 11: A lovely smile that is in harmony with the patient's face.

for 40 seconds.[4] Finally, a medium incisal composite was placed to full contour. Different shades were used for each of the teeth. The centrals and laterals were layered with a hybrid layer of B1, microfill SB3 (Superbrite shade) and medium incisal. The canines were layered with B1 hybrid and microfill. The bicuspids were layered with B1 hybrid and SB3 microfill. The entire surface of each tooth was coated with water-soluble glycerin to eliminate the oxygen-inhibited layer and cured.

Contouring

Contouring was done with a #9 fluted carbide bur and discs for the facial, while the lingual was done with a football-finishing diamond. Anatomy and texture were created using a #9 fluted bur and points (Fig 9). The interproximal was contoured with a #12 blade and a diamond disc. The occlusion was checked and final polish was achieved with discs and composite polishing pastes (Fig 10). The front six anteriors, along with gingival contours, were done on the first day. The patient returned the next day for treatment of the remaining four bicuspids. Whitening of the lower arch was achieved with a 20% carbamide peroxide take-home kit. Postoperative photos were taken.

Summary

The patient's smile is now in total harmony with her beauty, and she is extremely happy with her new appearance (Fig 11).

By having the ability to deliver direct resin veneers with a high level of excellence, the dentist is able to deliver an outstanding cosmetic result and also to have better insight into all the elements of smile design.[5]

Acknowledgment

The author thanks her family, husband, and staff for their support; her patient, Akane; and Dr. Brad Olson for his feedback on this case.

References

1. Eubank J. *Essential Occlusion for Esthetics and Function* [course]. Presented by The Eubank Teaching Institute, Plano, TX, March 9-11, 2006.
2. Eubank J, Morley J. *Advanced Anterior Esthetics* (hands-on lectures). Presented by The UCLA Esthetic Continuum, Level 2; Los Angeles, CA, March 3-5 and April 21-23, 2006.
3. Mopper KW. *Renamel Restorative System Clinical Brochure*. Chicago: Cosmedent; 1994.
4. Willhite C. *Freehand Composite Bonding—The Ultimate Esthetic Course*. Presented by Cosmedent; Chicago, IL, January 13-14, 2006.
5. Blitz N, Steel C, Willhite C. *Diagnosis and Treatment Evaluation in Cosmetic Dentistry.* Madison, WI: American Academy of Cosmetic Dentistry; 2001.

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Full-Mouth Rehabilitation and Bite Management of Severely Worn Dentition

by H.R. Makarita, DDS, MAGD, FAACD
Oakton, VA
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Introduction

Creating a beautiful smile for a patient is extremely rewarding for the dentist as well as for the team, and this should never be taken for granted. We are blessed with the ability to change someone's self esteem, confidence and, possibly, the course of their life.

The case presented here was featured on the cover of the Spring 2008 issue of *The Journal of Cosmetic Dentistry*. While it was quite challenging, I will never forget this case, as it changed the life of a recovering bulimia patient. Eating disorders affect approximately seven million people in the United States. Although I have seen the effects of bulimia on the dentition previously, never have I witnessed it to this extent.

The patient was diagnosed with loss of vertical dimension as a direct result of bulimia and bruxism.

Patient History

The patient, a 30-year-old female, wanted to improve her smile and to address the constant fracturing of her teeth. Although it was difficult for her to discuss, she told me about her history of bulimia and that, after a long struggle, she is now recovered. She was ready not only to change her smile, but also to see what could be done about her "collapsing" face, as she put it. She confessed that her unwillingness to smile was affecting her socially and that she always covered her mouth when she laughed (Fig 1).

Clinical Evaluation and Diagnosis

After performing a thorough clinical examination, I noted a severely worn dentition, widespread abfraction lesions, and multiple fractured teeth and restorations. The palatal surfaces of the maxillary anterior teeth were completely eroded and devoid of enamel, as is typically seen with bulimic

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Figure 1: Preoperative image showing facial asymmetry and short teeth.

patients (Figs 2 & 3). As expected, the patient's teeth were very sensitive to temperature changes. Tooth #5 had been extracted due to a fractured root, and in its place was a successfully osseointegrated implant (Straumann USA; Andover, MA) that had been placed one year earlier. She had lost approximately 30% of the length of her central incisors due to attrition. Upon radiographic examination, no severe decay or pulpal pathology was evident. Periodontal probing depths were within normal limits.

The patient suffered from many typical symptoms of temporomandibular disease (TMD), such as joint pain, severe headaches, tinnitus, and orofacial muscle pain with spasms.[1] These symptoms were not surprising, as craniomandibular dysfunction is often seen with loss of vertical dimension. She was also a severe bruxer and said this provided her with relief. Due to this vertical loss, the lower third of her face was collapsed and disproportionate. The patient was diagnosed with loss of vertical dimension as a direct result of bulimia and bruxism; this was accompanied by multiple fractured, eroded teeth, and worn restorations. Additionally, the patient had facial asymmetry and multiple TMD symptoms due to craniomandibular dysfunction.[2]

She tolerated the orthotic well and felt much better with it in place.

Treatment Plan

Initially this case was overwhelming, as there were so many factors necessary to achieve a successful treatment outcome. After mounting and studying the casts, it was obvious that the patient's vertical dimension had to be increased to a proper, comfortable position, which has been called the physiologic neuromuscular position.[3] Once this position was determined, an orthotic appliance would be worn to verify that this proposed position was in fact well tolerated and that the TMD symptoms had decreased significantly. During the orthotic therapy phase, this appliance would be worn for a minimum of three months (for a minimum of 22 hours a day), to determine whether it would help before any permanent alteration of the patient's teeth.

During this time, her condition would be evaluated for elimination of symptoms, proper occlusion, improvement in facial symmetry, esthetics, and acceptable phonetics. If we had not seen improvements during the orthotic phase, the first thing we would have looked at was compliance. If it had been determined that the patient was not wearing the appliance as instructed, or if the therapy had had to be extended beyond three months (due to inconsistent symptoms or an unstable bite position), we would have used

Figures 2 and 3: Preoperative images showing severely worn dentition.

a fixed orthotic appliance, which would have been fabricated to the same vertical dimension as the removable orthotic.[4]

The goal, for any clinician, is to find a position in which the patient's symptoms are eliminated, or at least decreased significantly. The facial and dental esthetics also must be greatly enhanced. Although there is more than one way to find this physiologic position, in this case I objectively measured muscle activity by using electromyography (EMG) instrumentation (Myotronics-Noromed; Kent WA). This enabled me to locate the correct resting position for the mandible where the muscles are at rest, as well as the correct opening and closing trajectory.[5] During the course of orthotic phase therapy, which can last several months to a year, the patient returns to verify the bite and evaluate symptoms several times. Once it is determined that the patient is comfortable, facial esthetics are improved, and the EMG muscle activity is verified to be physiologic, then the restoration phase can begin.[6,7]

Treatment Discussion

The first step in this case was to determine how much to increase the patient's vertical dimension. Once this position was determined, it was imperative to test and verify it; and, most importantly, to maintain it throughout the different phases of treatment. The treatment phases were as follows: Orthotic, preparation, temporization, and cementation.

Finding the Bite

To evaluate the state of the patient's habitual bite position, we had to record and evaluate EMG readings of several muscle groups bilaterally (K7 instrumentation, Myotronics-Noromed). The muscle groups measured were the anterior and posterior temporalis muscles, the masseters, and the anterior digastrics. Electrodes were placed over these muscle groups and electromyographic recordings were made. High EMG readings represented a state of muscle hypertonicity and unrest. The goal was to find the occlusion where the muscles that control jaw position are in a relaxed state, and therefore are at their ideal resting length for optimal function and comfort.[8,9]

To find a more optimal bite position, a series of diagnostic tests were performed. These included electrosonography to record and analyze joint sounds, electromyography to record and analyze muscle activity, and computerized mandibular scanning (CMS) to track and analyze jaw movements. It was determined that the patient's habitual occlusion was in a muscular state of hyperactivity when at rest and in light centric occlusion (Fig 4). In order to relax her muscles, which were in a chronic spasmodic state, ultra-low frequency transcutaneous electrical neural stimulation (TENS) was applied using a myomonitor (Myotronics). The myomonitor stimulates cranial nerves V, VII, and XI to relieve hypertonicity, restore normal blood flow, and wash away toxic wastes such as lactic acid. This restores the muscles temporarily to a relaxed and normal resting length (Fig 5). These muscles become "deprogrammed," and, by measuring their pre- and post-relaxation status, we are provided with precise and objective comparative data.[10,11] The details of all the tests performed during the three-hour diagnostic appointment are beyond the scope of this article.

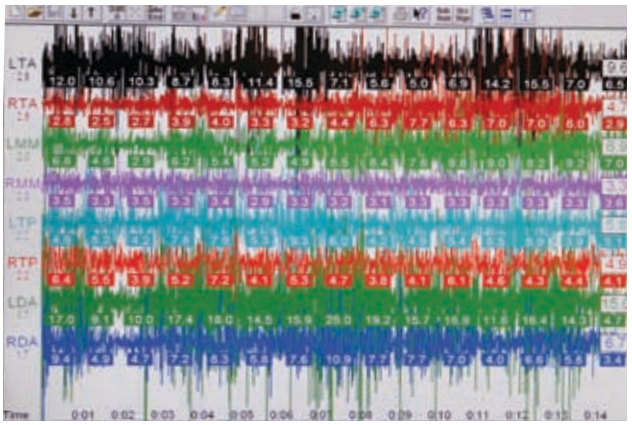


Figure 4: EMG readings showing muscle hyperactivity.

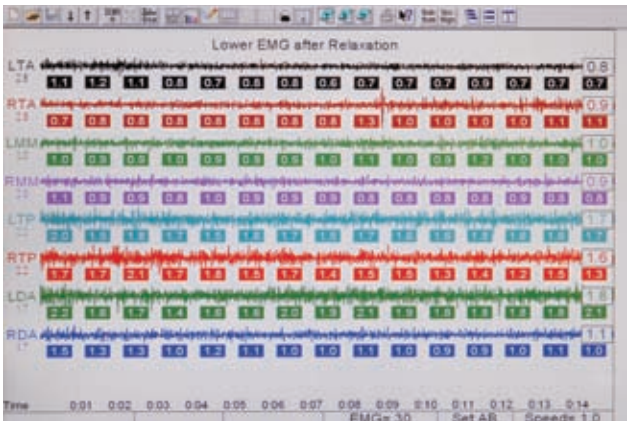
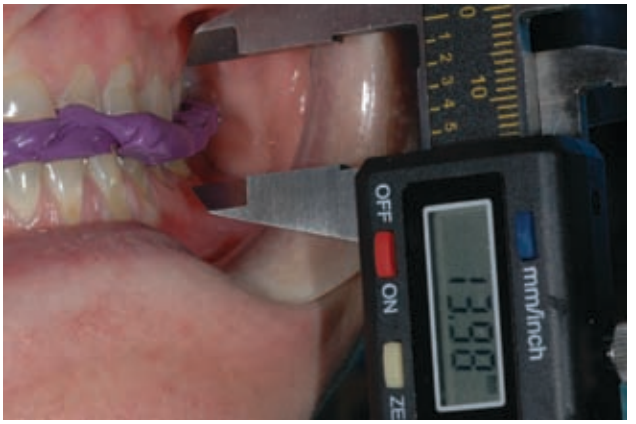


Figure 5: EMG readings in a relaxed state after TENS was applied for 45 minutes.



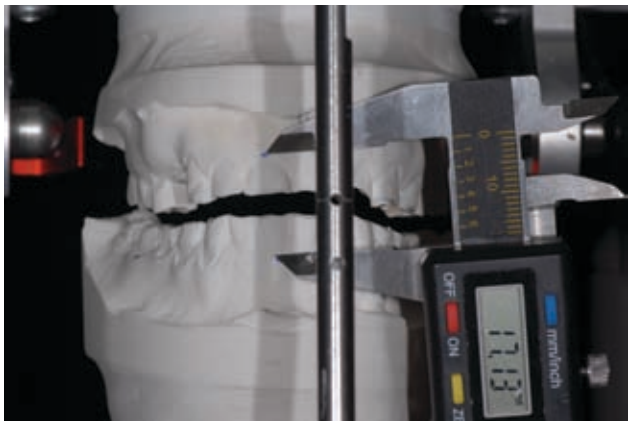
Figures 6 and 7: Recording of three points (two are shown) to help in bite management.

The position at which this patient's muscles were in their most relaxed state was captured by using a polyvinyl siloxane bite registration material (Regisil, Dentsply Caulk; Milford, DE). Impressions were then taken (Aquasil Ultra, Ivoclar Vivadent; Amherst, NY) and sent to the laboratory with the bite to fabricate a lower removable orthotic. Upon delivery of this appliance, I explained to the patient that it must be worn a minimum of 22 hours a day. Each follow-up visit always consisted of 45 minutes of TENS, followed by any necessary occlusal adjustments to the orthotic. The patient was seen at one-, two-, three-, four-, and six-week intervals. She tolerated the orthotic well and felt much better with it in place; therefore, compliance was not an issue.[12,13]

Once it was determined that the bite was stable and that symptoms were significantly reduced, EMG recordings were taken again to verify that the muscles were not hypertonic in this new position. In this case the EMG readings were more than satisfactory, and the patient's headaches and other symptoms were reduced significantly. Therefore, I had great confidence as to where to restore her occlusion.[14] Her bite was opened 4 mm. The next phase of treatment was the restorative phase.

Bite Management (Laboratory Phase)

Much effort was spent determining the proper physiologic position for this patient, and much care had to be taken in managing and maintaining this position throughout the course of treatment. Prior to the preparation appointment, new impressions were taken and sent to the laboratory, along with the actual



Figures 8 and 9: Verification of measurements at the same three points (two are shown) with the mounted casts.

Figure 10: Verification of measurements in the wax-up.

Figure 11: Bite verification prior to the start of preparation, with bite stent in place.

adjusted orthotic to mount the case. In addition, three measurements were provided so that the laboratory could verify that the case was properly mounted. These measurements were taken with a digital Boley gauge. The areas measured were where the most apical areas of tooth surface intersect with the gingiva between teeth #8 and #25, #14 and #19, and #3 and #30 (Figs 6 & 7). In this situation, the dentist and the laboratory must measure in the exact same three locations throughout the course of treatment, so as to ensure accuracy and precision in maintaining the new vertical dimension (Figs 8 & 9).

Once the laboratory mounted the casts with the adjusted orthotic in place and the three measurements were verified, a bite stent (Sil-Tech, Ivoclar Vivadent) was made, to be utilized during the preparation appointment to ensure accuracy in maintaining the new vertical dimension. The appliance was then immediately returned to the patient so that she could continue to wear it. The laboratory also was provided with detailed instructions concerning the smile design, including widths and lengths of anterior teeth, shapes, and proportions.[15]

Because the patient's maxillary anterior teeth were short, it was determined that crown lengthening was necessary to support the restorations. Therefore, the proposed amount of hard and soft tissue removal was relayed to the laboratory so that they could compensate for the change in measurement in this area. With this information in hand, they waxed up the 28 teeth in the new position, taking into consideration the hard and soft tissue reduction in the anterior; and once again

Figure 12: Measurement change after crown lengthening with a hard tissue laser.

Figure 13: Maxillary arch prepared and relined one quadrant at a time during preparation appointment.

verified the three measurements (Fig 10). From this wax-up, they prepared a temporization stent made from Sil-Tech putty and relined with a light-body wash material (Aquasil XLV, Dentsply Caulk). This would be used to fabricate the 28 temporaries after tooth preparation, with the same vertical dimension and occlusion as the orthotic.

Bite Management (Preparation Phase)

Prior to the preparation appointment, I ensured that I received everything necessary from the laboratory. First, I verified that the waxed-up models were consistent with the three measurements I had provided to the laboratory, by measuring the teeth in the exact same three locations. Second, I verified that I was satisfied with the smile design and occlusion. As this was to be a lengthy appointment, the clinical team met and reviewed procedures.

After the patient was seated, I verified the bite stent that had been made on her unprepared, mounted models by placing it in her mouth and having her close down on it. I again measured the same three locations and verified that those measurements were the same as they were with the orthotic in place (Fig 11). I was confident that all of my numbers were accurate, so it was time to begin preparing the teeth.

It was imperative not to lose control of the bite at any time during the preparation.

After anesthetizing the patient, the first step was to perform the soft and hard tissue crown lengthening in the maxillary anterior region to improve the length of her short clinical crowns. To accomplish this, I used an Er,Cr:YSGG hard/soft tissue laser (Waterlase, Biolase Technologies; Irvine, CA) and at the same time performed a frenectomy between the maxillary central incisors. Using this laser provided a predictable result and gave me a clean field within which to work. I removed 1.2 mm of tissue and therefore changed the location of my uppermost point for measurement after the crown lengthening. I had to adjust my number for verification from this point on, in this area only[16] (Fig 12).

It was imperative not to lose control of the bite at any time during the preparation. To help in maintaining this vertical dimension, I used the bite stent provided by the laboratory to sequentially reline it while I prepared one quadrant at a time. Beginning with the upper right quadrant, I prepared ##3-8, while leaving #2 unprepared to provide extra stability while I relined the bite stent. To register the bite, I sat the patient upright and placed a small amount of fast-setting bite registration material (Regisil Rigid) in the bite stent, being careful not to overfill it and to reline only the prepared teeth. This was then placed in the mouth with the patient biting into it. While the stent was in her mouth, the same three locations were measured again, remembering that the anterior area had a new measurement. If the measurements had not matched those taken previously it would have been necessary to repeat the reline, as the patient might have been biting incorrectly or the bite stent might not have been seated over the teeth properly.

Once it was determined that the measurements were correct, the stent was removed, trimmed, and set aside for the next quadrant. The same procedure was repeated for

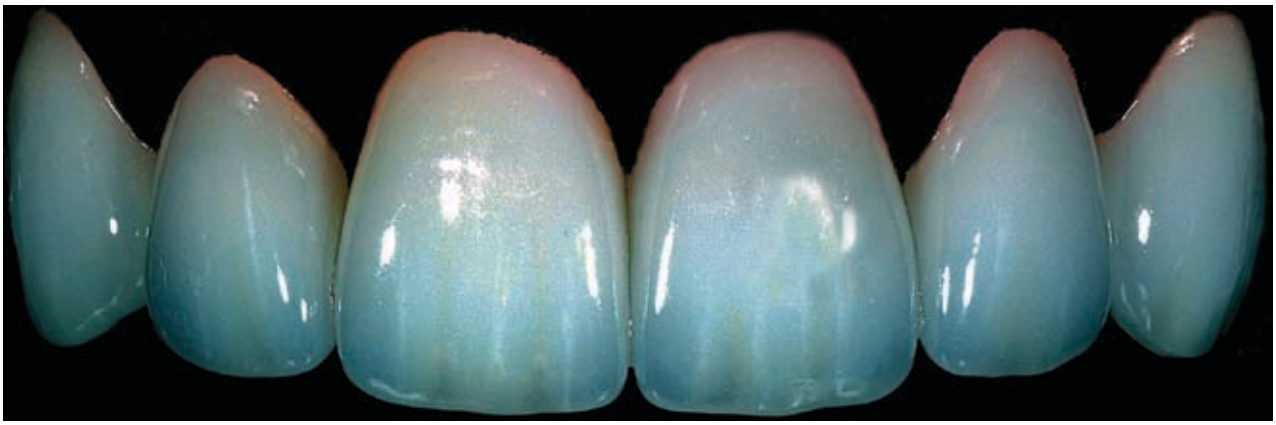


Figure 14: Characterization for lifelike restorations.

the upper left quadrant, preparing ##9-14 and leaving tooth #15 unprepared. This quadrant was then relined the same way. After the measurements were verified, I prepared #2 and #15 (Fig 13). This procedure was repeated for the bottom right quadrant and then the bottom left. A final check of the measurements was made and the bite stent was set aside to send to the laboratory along with final impressions. For these, I used a PVS heavy-body material and an extra-low viscosity wash material (Aquasil Ultra-heavy and XLV). A symmetry bite was also taken, indicating to the laboratory the proper occlusal plane and midline. Photographs of the preparations, which showed the measurements with the final bite stent seated and with the symmetry bite in place, were provided for the laboratory.

Temporization

The provisional restorations were fabricated using the temporary stents made from the wax-up. The stents were filled with temporary material (Luxatemp shade B1, Zenith/DMG; Englewood, NJ) and placed over the maxillary prepared teeth. After three minutes the stent was removed, as was a small amount of flash. This procedure was repeated for the bottom teeth. Once the provisionals were in place, all three measurements were once again verified; at this time we evaluated esthetics and occlusion. To properly maintain the health of the gingival tissue during the four-week provisional phase, the patient was given a sonic toothbrush (Sonicare, Philips Healthcare; Andover, MA), as well as instructions on how to use rubber tips to massage her tissue. A follow-up visit was scheduled for the next day to confirm that the occlusion was comfortable and that we were both satisfied with the smile design.

Laboratory Communication

Proper communication with the laboratory is crucial for a successful outcome in each and every case sent to our ceramist. In this case, it was important to send as much information as possible with regard to maintenance of the patient's vertical dimension, as well as esthetics. Photographs showing all three measurements in the final bite stent, as well as in the provisionals, were sent to the laboratory. In addition, retracted frontal and lateral views of the preparations were provided, as well as a picture showing the prepared shade (Vita A3, Vident; Brea, CA).[17] When the laboratory received the case, the first step was to verify the measurements after mounting the prepared models. This was accomplished by using the relined bite stent and verifying the accuracy of the vertical dimension in the same three locations.

For the smile design, we decided on a "soft" look with square oval central incisors and slightly rounded laterals and canines, with the lateral incisors 0.5 mm shorter than the centrals. The requested width of the central incisors was 8.25 mm and the length was 10.75 mm. The lateral incisors were approximately 10.25 mm long. Golden proportion rules and smile design principles were adhered to, which provided the patient with a very soft and esthetically pleasing smile. Our final shade choice was OM2 body with a cervical blend to OM3 (Vita 3D Master shade guide), with the canines blending from OM2 to 1M1 cervically. We selected Authentic pressable ceramic (Jensen Industries; North Haven, CT) for all anterior teeth and bicuspids, using an

Figure 15

Figure 16

Figure 17

Figure 18

Figure 19

Figures 15-19: Consistent bite verification from mounting to final delivery.

Figures 20 and 21: Note change in facial symmetry after increase in vertical dimension.

OP1+ ingot with cutback technique and adding intense opaque modifiers to increase vitality and a natural appearance (Fig 14).[18] All of the molars were restored with Noritake CZR pressable ceramic (Zahn Dental, Henry Schein; Melville, NY) over zirconia copings.[19] The #5 implant was restored with a custom abutment with Creation porcelain (Jensen Industries). Prior to the fabrication of the restorations, the models were mounted using the preparation bite stent, and all the measurements were verified by the laboratory (Figs 15-18).

Cementation

After we received the case from the laboratory, I checked the restorations on the models for proper margins and contacts, and to ensure that the smile design had been followed. Once all the restorations were mounted on the models, the three areas were measured to verify that the laboratory maintained the vertical dimension. Once the patient was anesthetized, the provisional restorations were removed. The prepared teeth were cleaned with pumice, followed by hydrogen peroxide and chlorhexidine (Consepsis, Ultradent; South Jordan, UT). Each restoration was tried on with water and inspected individually. Contacts and margins were examined, as was the overall smile design.

Once we were satisfied with restorations, they were cleaned with 37% phosphoric acid, rinsed, dried, and set aside. The molars were cemented first using Multilink (Ivoclar Vivadent), a self-etching universal resin cement, with the inside of the restorations coated with the metal/zirconia primer (Ivoclar Vivadent). Then all of the remaining upper teeth except #5 were etched with 37% phosphoric acid and rinsed, after which a wetting agent was applied (Super Seal, Phoenix Dental; Fenton, MI).[20] Then the bonding agent (Excite, Ivoclar Vivadent) was placed on the teeth according to manufacturer's directions and light-cured. The restorations, which had previously been etched with hydrofluoric acid, were coated with Silane primer (Kerr; Orange, CA). The luting resin used for cementation was Variolink Veneer +2 (Ivoclar Vivadent). All of the restorations were placed simultaneously and spot-cured. The excess was then removed, followed by the final light-cure. Tooth #5 was cemented with implant cement (Premier Dental; Plymouth Meeting, PA).[21] The same technique used on the maxillary teeth was applied to the lowers. Once all teeth were cemented, the three measurements were once again verified to confirm maintenance of the vertical dimension (Fig 19). The patient returned for follow-up appointments to make sure her bite was stable and that she remained symptom-free.

Conclusion and Discussion

This patient's case involved many of the challenges we face daily in our practices. Just a few years ago,

Figure 22

Figure 23

Figure 24

Figure 25

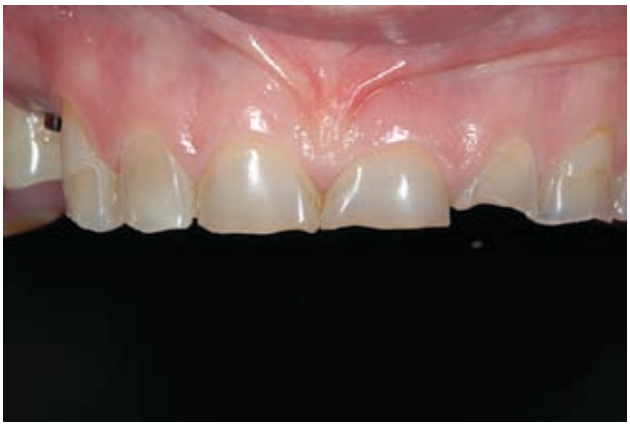


Figure 26

Figure 27

Figures 22-29: Note improved esthetics after rehabilitation.

Figure 28

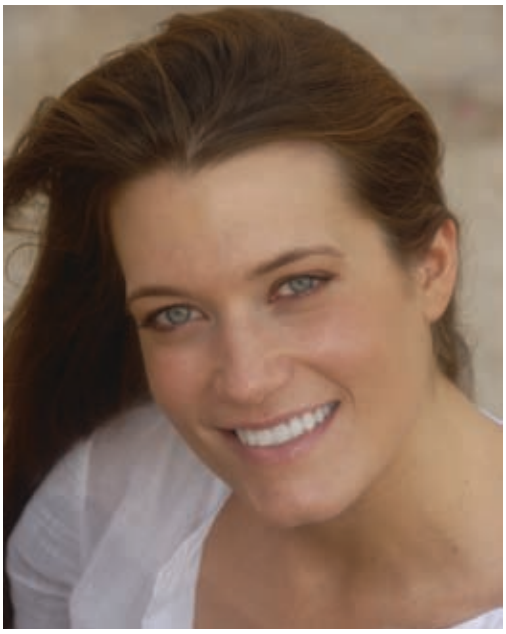


Figure 29

however, I would not have known in which direction to take her treatment. Perhaps I simply would have provided her with a bruxism appliance, while "patching up" some of her fractured restorations and attempting to improve her smile by restoring some of her anterior teeth with direct resins. These would have failed repeatedly, causing us both much frustration.

I conducted a series of diagnostic tests using computerized instrumentation, which provided me with objective data that I was able to use in my treatment planning.

The key point is that this patient initially exhibited severe occlusal disharmony and craniomandibular dysfunction. This can be the case in many of our patients, and much effort should be spent in proper diagnosis and treatment planning.[22] I did not prepare 28 teeth in one visit and deliver them a few weeks later. Instead, I conducted a series of diagnostic tests using computerized instrumentation, which provided me with objective data that I was able to use in my treatment planning. Not until the patient's new vertical dimension position was tested for several months did I dare touch a single tooth with a handpiece. Once I did, however, it was with great confidence, because I knew in which direction I was headed (Figs 20 & 21).

It is well accepted that there is more than one philosophy or method that can be utilized to arrive at a physiologic bite position. A discussion of these different philosophies—whether centric relation, centric occlusion, or neuromuscular—is beyond the scope of this article.[23] However, as responsible clinicians, we should study the different treatment modalities available to our profession before making a decision as to which one suits us. Whichever method you apply in your practice, the most important factor is that it must be in your patients' best interests.[24] Before proceeding to final restorations, it is imperative to establish a comfortable, stable bite derived from verifiable, objective clinical data (Figs 22-29).

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References

1. Okeson JP. *Management of Temporomandibular Disorders and Occlusion* (3rd ed.). St. Louis, MO: Mosby; 1985.
2. Coy RE, Flocken JE, Adib F. Musculoskeletal etiology and therapy of craniomandibular pain and dysfunction. *Cranio Clin Int* 1(2):163-173, 1991.
3. Jankelson RR. *Neuromuscular Dental Diagnosis and Treatment. Volume 1* (2nd ed.). Tokyo: Ishiyaku EuroAmerica; 2005.
4. Naeije M, Hansson TL. Short-term effect of the stabilization appliance on masticatory muscle activity in myogenous craniomandibular disorder patients. *J Craniomand Disord Facial Oral Pain* 5:245-250, 1991.
5. Ormianer Z, Gross M. A 2-year follow-up of mandibular posture following an increase in occlusal vertical dimension beyond the clinical rest position with fixed restorations. *J Oral Rehab* 11:877-883, 1998.
6. Liu ZJ, Yamagata K, Ito G. Electromyographic examination of jaw muscles in relation to symptoms and occlusion of patients with TMJ disorders. *J Oral Rehab* 26(1):33-47, 1999.
7. Neill DJ, Howell P. Computerized kinesiography in the study of mastication in dentate subjects. *J Prosthet Dent* 55(5):629-638, 1986.
8. Mongini F, Tepia-Valenta G, Conserva E. Habitual mastication in dysfunction: A computer-based analysis. *J Prosthet Dent* 1:484-494, 1989.
9. Jankelson B. Three dimensional orthodontic diagnosis and treatment: a neuromuscular approach. *J Clin Orthod* 18(9):627-636, 1984.
10. Ow RK, Carlsson GE, Jemt T. Craniomandibular disorders and masticatory mandibular movements. *J Craniomand Disord Facial Oral Pain* 2(2):96-100, 1988.
11. George J, Boone M. A clinical study of rest position using the kinesiograph and myomonitor. *J Prosthet Dent* 41(4):456-462, 1999.
12. Konchak P, Thomas N, Lanigan D, Devon R. Freeway space using mandibular kinesiography and EMG before and after TENS. *Angle Orthod* 58(4):343-350, 1988.
13. Balciunas BA, Stahling LM, Parente FJ. Quantitative electromyographic response to therapy for myo-oral facial pain: A pilot study. *J Prosthet Dent* 58:366-369, 1987.
14. Isberg A, Widmalm S, Ivarsson R. Clinical, radiographic, and electromyographic study of patients with internal derangement of the temporomandibular joint. *Am J Ortho* 88(6)453-460, 1985.
15. Griffin JD. How to build a great relationship with the laboratory technician: Simplified and effective laboratory communications. *Contemp Esthet* 10(7):26-34, 2006.
16. Colonna M. Crown and veneer preparations using the Er,Cr:YSGG Waterlase hard and soft tissue laser. *Contemp Esthet Rest Pract* 10:80-86, 2002.
17. Bengel W. *Mastering Dental Photography* Hanover Park, IL: Quintessence Pub.; 2002.
18. Magne P, Belser U. *Bonded Porcelain Restorations in the Anterior Dentition: A Biomimetic Approach*. Hanover Park, IL: Quintessence Pub.; 2002.
19. Ludwig K. Studies on the ultimate strength of all-ceramic crowns. *Dent Laboratory* 39:647-651, 1991.
20. Kanca J. Improving bond strength through acid etching of dentin and bonding to wet dentin surfaces. *JADA* 123:35-44, 1992.
21. Garg AK. *Practical Implant Dentistry* (1st ed.). Dallas, TX: Taylor Publishing; 2007.
22. Tingey EM, Buschang PH, Throckmorton GS. Mandibular rest position: A reliable position influenced by head support and body posture. *Am J Orthod Dentofac Orthop* 120(6):614-622, 2001.
23. Pully ML, Carr S. *Solving the pain puzzle: Myofascial pain dysfunction* (3rd ed.). Albuquerque, NM: TMData Resources; 1997.
24. Shankland WE . Temporomandibular disorders: Standard treatment options. *Gen Dent* 52(4):349-355, 2004.

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