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MAGAZINE Q3 | 2010

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NATURAL ESTHETICS
PART 1

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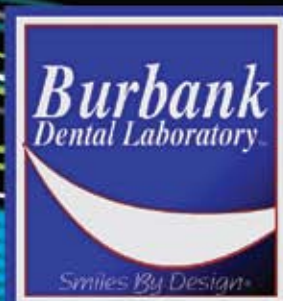
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FROM THE EDITORS

Looking Back ... and Forward

BY MARK FLEMING, D.D.S.

The CEREC 25th anniversary has prompted me to look back at my own dental career and what has taken place over these 25+ years. Interesting times.

After being in associateships for several years, in 1984 I started off into a new venture much like CEREC creator, Dr. Werner Mörmann. I started a new

practice, my wife and I had our third child, bought a new house with a buy-down mortgage of 16.9 percent, and the prime rate was hovering around 21 percent. We had interesting financial times even then!

Around this time, I heard that there was a technology being developed in Europe that would impact the way dentistry would be performed.

This incredible technology of CAD/CAM dentistry would revolutionize the profession. In fact, one dental futurist was recommending that if a dentist had an interest in a dental lab, now was the time to sell. This CAD/CAM technology would make dental labs obsolete. Interesting concept.

Fast-forward to October, 2001. I watch a CEREC demo at a local hotel. I'm looking for a way to provide predictable restorations for my patients. This new technology allows this to be done in one visit.

I jump in. "Basic Training" is done in a dental office. We even get to see the "Advanced Concept" correlation because we are grasping concepts so quickly. Oh, how training has changed.

And CEREC has changed over the years. Going from 2-D to 3-D software in 2003 was a giant leap forward. Advances in milling with the MC XL milling chamber, new acquisition center powered by the BlueCam technology, and constant improvements to the software. Many of you will have received the new software that proposes custom crowns and the ability to articulate 3-D models without using bite registration material.

Who knows what Sirona has coming in the future? We



do know they will keep striving to make this technology even better.

And what are you doing to be ready for this improving technology? How are you preparing yourself to use this technology to treat your patients? What type of ongoing training are you investing in to be able to perform better treatment?

Information that is found on cerectoctors.com today was not present 25 years ago. Are you taking advantage of that? Training centers like Scottsdale Center for Dentistry were not

What are you doing to be ready for this improving technology? How are you preparing yourself to use this technology to treat your patients? What type of ongoing training are you investing in to be able to perform better treatment?

around 25 years ago. Are you investing in advanced CEREC training and taking courses that are given by the Spear Education group?

As Dr. Sameer Puri asks in his article, what are you doing to take yourself from good to great?

We at cerectoctors.com magazine hope to be a part of your journey from good to great. We are proud and honored to continue to provide you with latest techniques, tools and technology to accomplish this. ❖

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STEP-BY-STEP

Temporary Materials for CEREC 3-D Chairside

BY SUZETTE MARIE STINES, D.D.S.

The CEREC AC has opened up new worlds in digital CAD/CAM dentistry. As the applications expand, so do the available materials. This article will provide an overview of available temporization materials.

Previously, many of us have defaulted to Z100 for temporization, and indeed it does provide a stable long-term temporary, as the material is extremely strong and wear-resistant. Presently the available materials for temporization are varied, and pretty interesting.

ARTEGRAL CROWNS

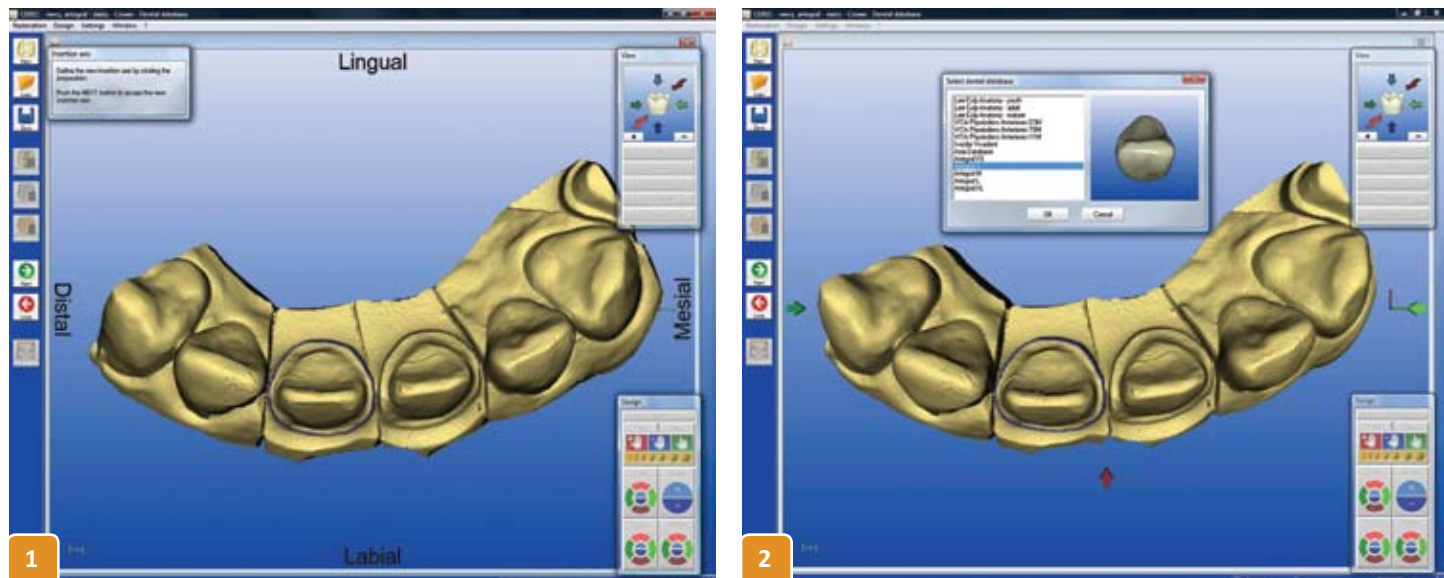
For several years, Merz Dental (Germany) has produced Artegral temporary crowns for the anterior region. In the anterior segment, we often need long-lasting and esthetic temporaries for long-term stabilization for adolescents with traumatic fractures, long-term tem-

porization of immediate-load implants, or as interim restorations. Merz Artegral crowns are designed to provide lifelike temporaries with beautiful incisal translucency. They are very rapidly designed and milled beginning with the essential crown form, and then modified as indicated by the milling unit. They are available for use from canine to canine, and come in five incisal sizes and three canine sizes. Artegral crowns are an Interpenetrated Polymer Network material. They are available in Vita A2, A3, B3, C3, and bleach. These provisionals are

easily polished with a goat-hair brush and acrylic polishing compound.

The technique for using them is as follows:

1. In Master Mode, select NEW; select PATIENT FOR NEW RESTORATION; choose CROWN as restoration type and DENTAL DATABASE as design mode; select tooth number.
2. Take optical impression
3. Click NEXT
4. Do all normal trim, trim antagonist



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This patient fractured a porcelain all-ceramic crown on the second molar and chipped the first molar. Both crowns were replaced with BruxZir.

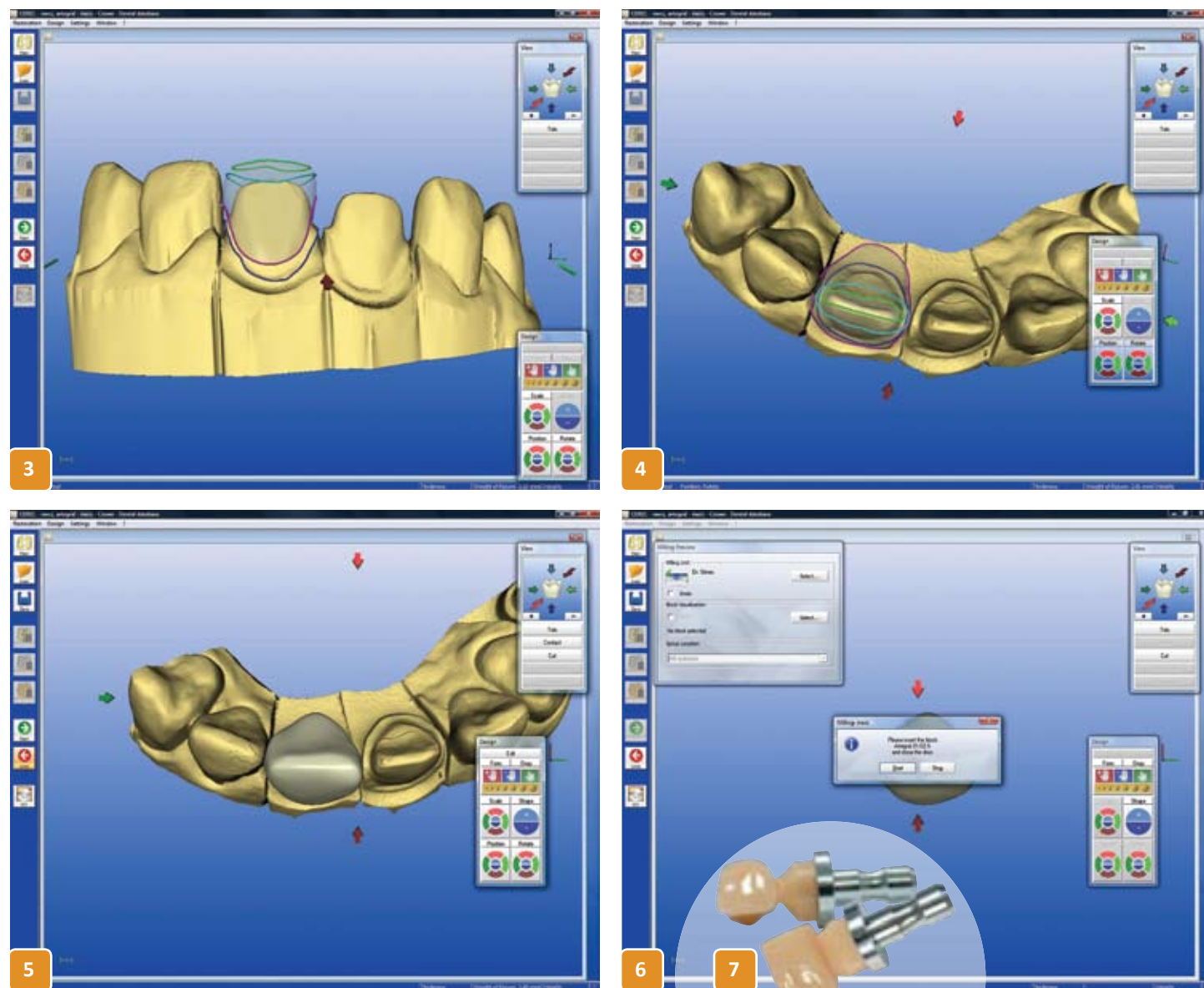


This patient presented with a predominantly cast-metal bridge and desired a more esthetic option. A high-strength BruxZir bridge was prescribed.

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- steps, define margin, determine insertion axis (Figure 1)
- Click NEXT
 - Choose ARTEGRAL CROWN from Database. Note these are sized from XS to XL. Choose size as appropriate. If you choose the wrong size, merely back up and choose again (Figure 2)
 - Click OK
 - A frame comes up (Figure 3)
 - Position this with the POSITION

- Click NEXT
- Modify as needed (Figure 5)
- Click NEXT to milling preview
- Click MILL icon

You will then be instructed to insert the proper Artegral crown form in the milling unit as indicated in the milling box (Figures 6, 7)

TEMPORARY BRIDGES

The bridge program available with CEREC 3-D software predictably mills provisional bridges up to 55 mm with the MC XL milling unit. This equates to three to four units. The materials available for temporary bridge are: Vita CAD-Temp mono-Color, Vita CAD-Temp multiColor (Vita Zahnfabrik, Germany), Merz art Bloc Temp (Merz, Germany) and Ivoclar Vivadent Telio CAD.

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provider of milling blocks when the CEREC® system was first developed. Next time you place a block in your CEREC system, ask yourself if you'd want that restoration in your mouth. With VITA, the answer is always "YES!"

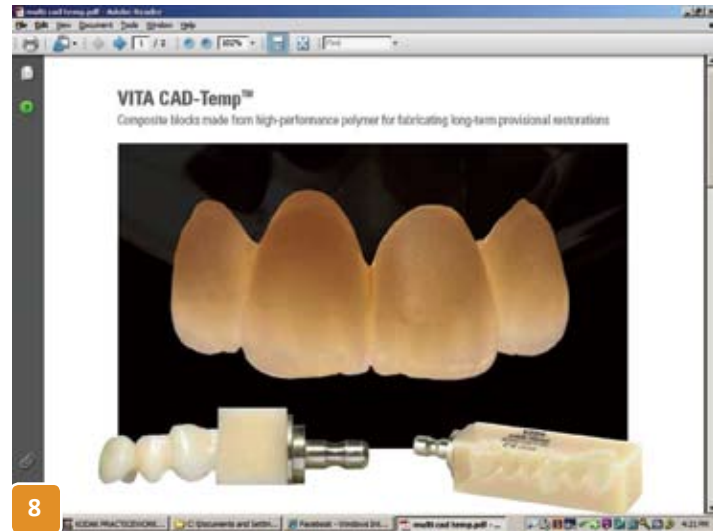
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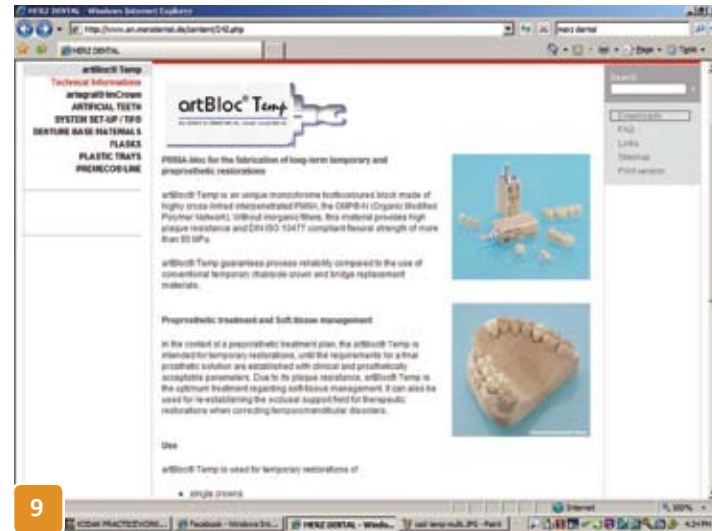
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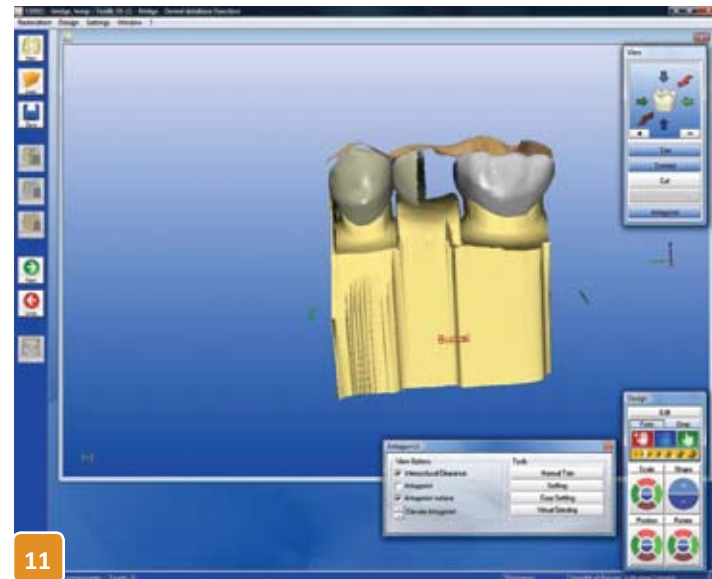
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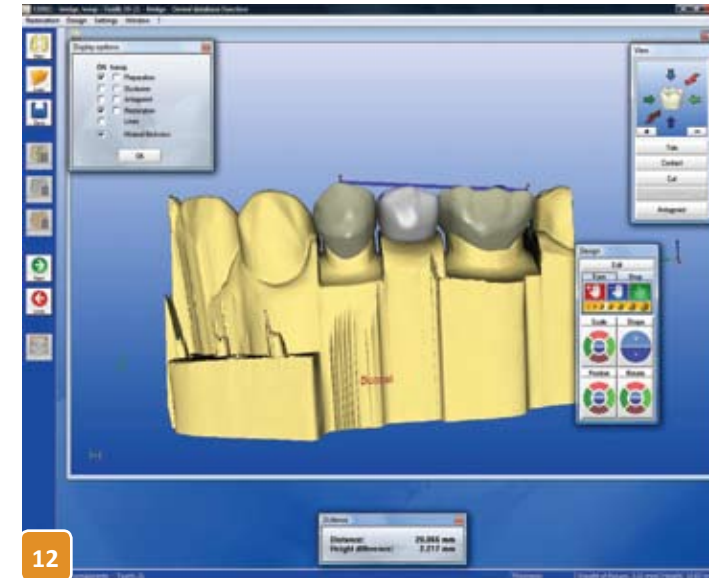
Vita CAD-Temp monoColor is an MM-free composite available in OM1, 1M2, 2M2, and 3M2 shades. It is available in 40 mm blocks. Vita CAD-Temp multiColor is available in 1M2, 2M2, and 3M2 in both 40 mm and 55 mm blocks. The milled restorations should be adjusted with Tungsten Carbide burs, NOT diamonds. The material is easily polished with silicone polishers, goat hair bristle brushes and acrylic polishing compound (Figure 8).

Merz artBloc is a PMMA material available in 40 mm blocks and all Vita Classic Shades (Figure 9).

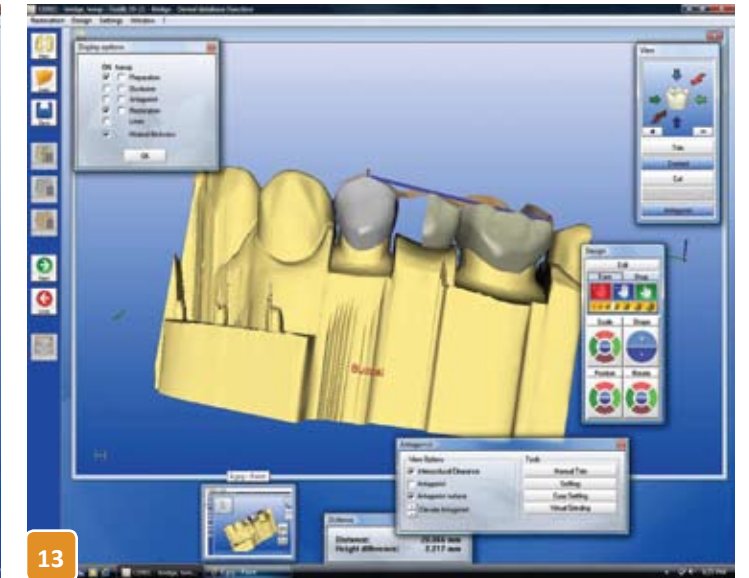
The protocol for designing bridges is straightforward:

1. Start in Master Mode
2. Choose BRIDGE
3. Click ELEMENT, click ABUTMENT, choose ABUTMENT TEETH (Figure 10)
4. Click ELEMENT PONTIC, choose

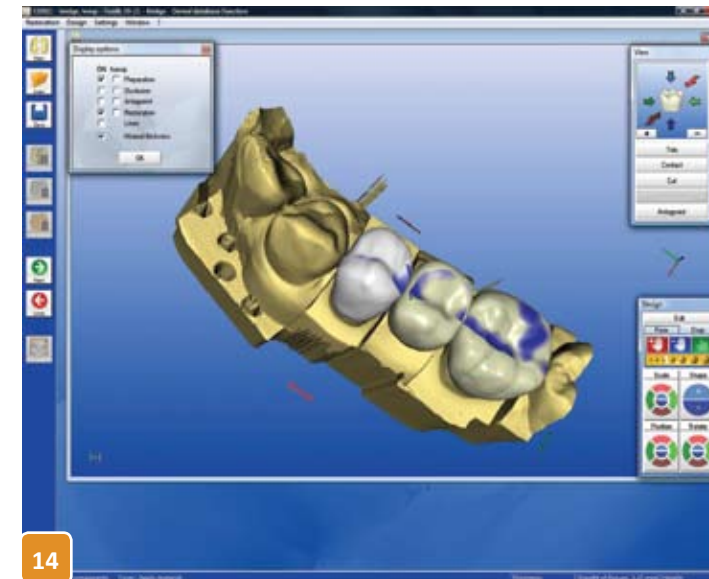
5. PONTIC TEETH
6. Click OK
7. Take pre-op optical impressions (OIs) of quadrant being restored in occlusion catalog for reference
8. Take OIs of prepared quadrant in preparation catalog
9. Take bite registration if desired
10. Take OIs of bite registration in Antagonist catalog
11. Click NEXT
12. Trim preparation between adjacent



12



13



14



15

12. teeth and terminal abutments
13. Click NEXT
14. Trim Antagonist
15. Click NEXT
16. Draw margin of first abutment
17. Draw outline of tissue contact area of pontic
18. Draw margin of next abutment
19. Click NEXT
20. Define insertion axis
21. Click NEXT
22. Choose from tooth library

23. Position and edit proposal for first abutment (Figure 11)
24. Click NEXT
25. Position and edit proposal for Pontic (Figure 12)
26. Click NEXT
27. Position and edit proposal for final abutment (Figure 13)
28. Double-click on any unit to modify that unit (it will be illuminated) (Figure 14)
29. Modify proposal as needed with tools

29. Click CONTACT
30. Double-click on first abutment. Adjust interproximal contact so that it is broad and red
31. Double-click on pontic. Adjust both contacts so they are broad and red (Figures 15, 16)
32. Double-click on final abutment. Adjust contact so that it is broad and red
33. Click NEXT to milling preview
34. Click MILL

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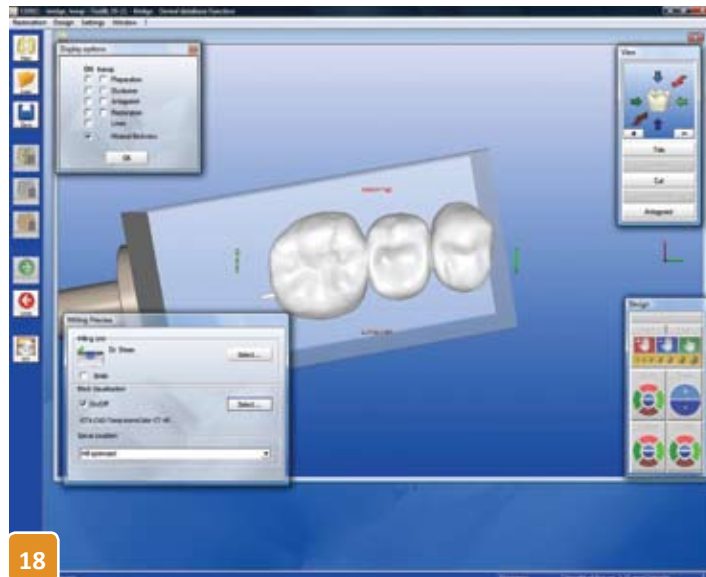
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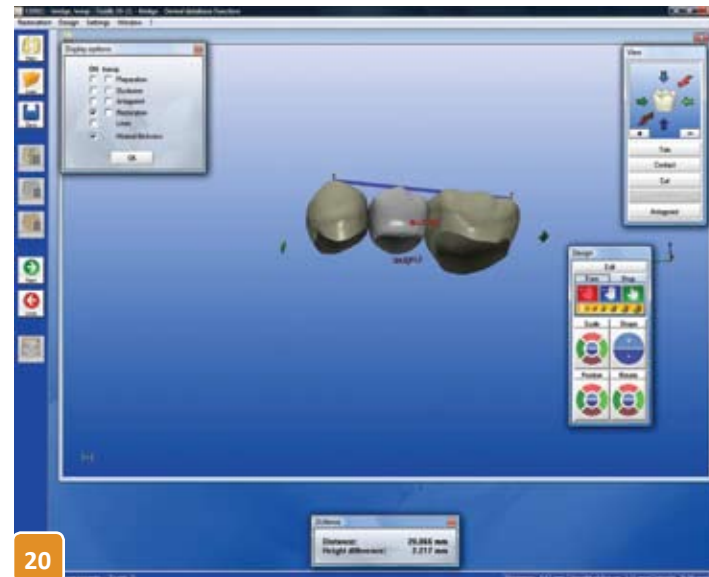
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35. Choose block and burs as indicated (Figures 17, 18)
36. Mill (Figure 19)

A couple of tips for using the software:

Double click on the abutment you want to modify. It will turn white. Now you can use the tool box for that unit. When you are ready to work on the next unit, double click that unit and it



21

will turn white.

Click **DISPLAY OPTIONS**, uncheck **PREPARATION** to work on the belly of the pontic (Figure 20).

Be sure that your connectors are of adequate dimension; broad, wide and red.

You can use the new polychromatic blocks for anterior bridges with 20 mm burs in the MC XL (Figure 21). ❖

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CASE STUDY

Creating a Smile with CEREC Connect

BY TARUN AGARWAL, D.D.S.

In the Q2 issue of *cerecdoctors.com* magazine, I shared a general overview of CEREC 2010. My hope was to educate and inspire you with the unbelievable potential that CEREC has become. CEREC is no longer just a crown machine!

I have received so many questions about the anterior case in which I briefly discussed using CEREC Connect that I felt it would be prudent to focus on that case for this issue. I'll detail the exact who's, what's and why's of this complex anterior case.

CASE HISTORY

Jennifer came to the office for a cosmetic consult several years ago with a desire to improve her smile (Figures



1-3). Proceeding with treatment didn't fit into her life at the time of her initial consult. We let Jennifer know that when she was ready, we would be happy to assist her with achieving a more attractive and healthier smile. Fast-forward 18 months, and Jennifer returns ready to proceed with treatment.

The lesson here is that each patient that comes to your office is like planting a seed. You never know which ones will grow into flowers and exactly

when they'll bloom. A successful practice is built by consistently planting seeds and treating each patient with compassion and respect.

TREATMENT PLANNING

Complex cases don't have to be complex in planning. I always start with the end in mind and work back from there.



Biology, structure, function and esthetics are always taken into consideration when planning a complex case – just not necessarily in that order. As you can see from Jennifer's radiographs (Figures 4-6), there are several pressing issues that will impact her treatment plan. Which teeth, if any, need endodontic treatment? Are posts required? Are they even restorable? Do they need full 360-degree crowns or can we save the cingulum?

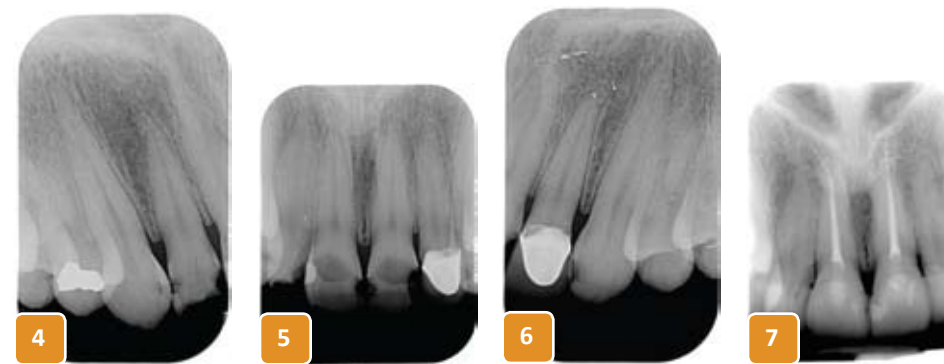
These are very important questions that have specific answers. If you are unsure of these questions or how to handle the consequences of the different possible answers, I recommend Spear Education's *Facially Generated Treatment Planning* workshop with Dr. Frank Spear, one of the best values in CE courses that makes you really understand how to



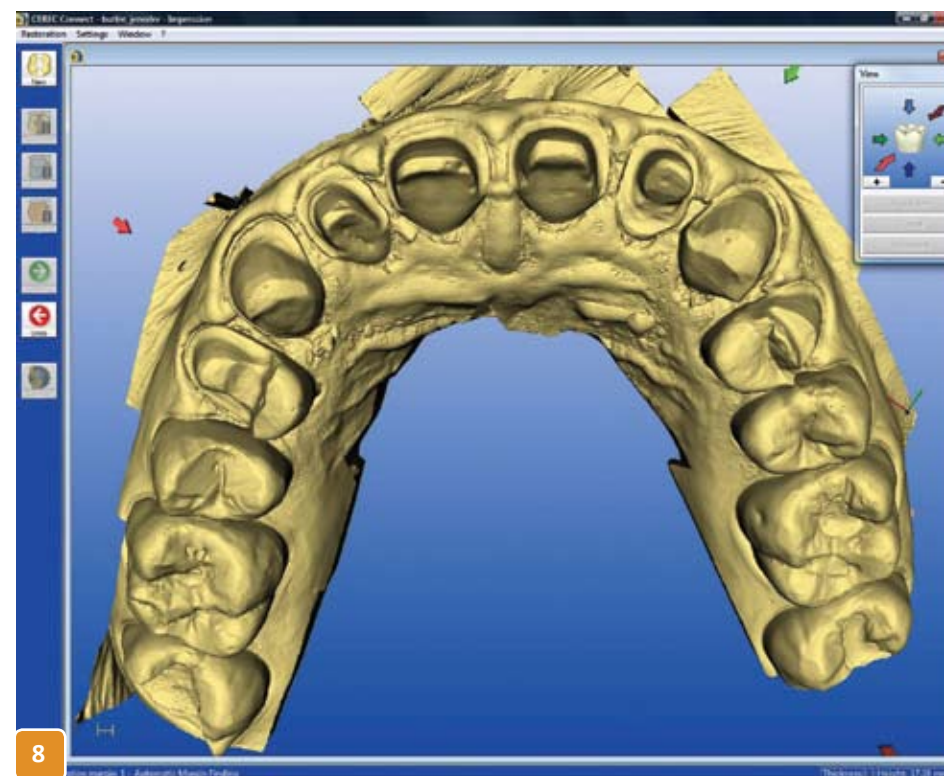
» Fig. 1: Preoperative view of left smile
 » Fig. 2: Preoperative view of smile
 » Fig. 3: Preoperative view of right smile

properly treatment plan every single patient, no matter the condition.

Our treatment plan and sequence for this case were pretty straightforward. The treatment plan: eight porcelain restorations to restore structure and improve esthetics. The treatment sequence: hygiene followed by placing



» Fig. 4: Preoperative radiograph of right anterior teeth
 » Fig. 5: Preoperative radiograph of anterior teeth
 » Fig. 6: Preoperative radiograph of left anterior teeth
 » Fig. 7: Mid-operative radiograph showing completion of endodontic treatment and buildups
 » Fig. 8: Digital Impression of Upper Arch taken with CEREC AC



buildups and performing the necessary endodontic treatment. Once we had a solid foundation, we were then ready to proceed with preparations for final restorative.

Fortunately, this case only required endodontic treatment on teeth numbers 8 and 9 (Figure 7). In cases with this amount of decay, I prefer to remove not only decay, but also old restorations (existing PFM #10) at the foundation visit. I believe in dealing with surprises and unknowns

prior to definitive treatment. This gave me a clean restorative field moving forward to final restorations. Believe it or not, this case needed only a single full-crown preparation – tooth #10, which started with an existing PFM. This is important because the major strength of anterior teeth comes from the cingulum.

CEREC CONNECT = COMMUNICATION

The most important aspect of success-

ful outcomes with complex treatment cases is communication between dentist and laboratory. This relationship can make or break a case and a practice. It is this simple reason that I choose and believe in CEREC Connect. CEREC Connect provides an immediate digital communication portal between dentist and laboratory in a manner that is totally unique and unprecedented.

To give this perspective, let's compare scenarios of taking an impression with CEREC Connect versus traditional impressions. The most common scenario of full-arch traditional impressions is a single tooth with a 'bubble' in the margin area. Traditional impressions require you to take the entire impression over – taking more than five minutes and at a significant cost (ask your supply rep how much a quality PVS impression costs). CEREC Connect allows you to simply recapture the area in question and not the entire arch.

How about something even more serious? Unsure if your margins and overall reduction are clear and adequate? With traditional impressions, you box the case and send it to the laboratory, which will contact you days later. Any corrections



» Fig. 9: Laboratory photos of restorations after mill allows you to evaluate and correct contours
 » Figs. 10-12: Laboratory photos of final restorations Empress CAD restorations cutback and layered
 » Figs. 13-15: Final restorations of eight Empress CAD restorations fabricated through CEREC Connect



will require you to either compromise or have the patient return for adjustment of preps and a new impression. This is a colossal waste of time and doesn't make for happy patients. With CEREC Connect, your laboratory gets the digital impression a minute later (Figure 8). The laboratory evaluates the digital models and gives immediate feedback while the patient is still in the chair. The results are preparations and impressions that are approved by the laboratory with complete confidence and without any disruption.

Now we get to the major time savings and case enhancement aspect of CEREC Connect. Have you ever excitedly opened the box for an anterior case and been disappointed? Now you have

to waste time sending it back to the laboratory, apologize to the patient and disrupt your schedule. With CEREC, I am able to get involved with the case each step of the way. The laboratory can digitally send me screen shots of the restoration designs, or they can even send the CDT file for me to open and make my own corrections. Additionally, the laboratory sends me pictures of the restorations prior to cutback (Figure 9), and after completion (Figures 10-12). This is all approved by me (and sometimes even the patient!) prior to having the laboratory actually send me the case. This greatly improves the overall outcome and avoids costly remakes for both the dentist and the laboratory.

CONCLUSION

This case was a complete digital CEREC case. The impressions were taken digitally with CEREC AC Bluecam technology and sent to the laboratory via CEREC Connect. The laboratory ordered digital models from InfiniDent; the restorations were designed via CEREC inLab, and milled with Empress CAD using MC XL.

The final results (Figures 13-15) are a combination of excellence in planning, preparation, laboratory work, and most importantly, communication. I firmly believe that CEREC Connect should be utilized more often in every CEREC doctor's practice. You already own the technology, and the benefits of communication lead to faster and better outcomes. ❖



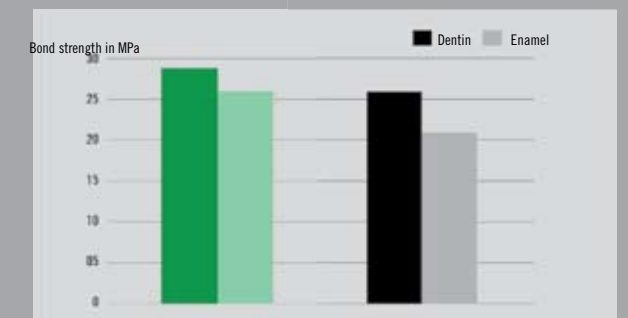
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CLINICAL

Using CEREC to Diagnose, Treat and Document Occlusal Disease

BY DAVID C. NIEBERGALL, D.D.S.

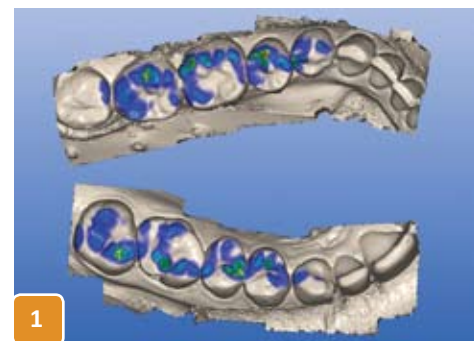
I want to share an observation that I have been working on since the release of CEREC-Connect Version 3.65. For the last two months our office has been utilizing CEREC-Connect and the buccal-bite technology by *importing* the CDT file into CEREC 3-D to design our restorations. The technology stitches together opposing arch models by

means of a snapshot of the arches under occlusal load. After the models are articulated, you can “toggle” them open and closed. I was intrigued by the colors displayed on the occluding surfaces (Figure 1). This is the pre-op condition of a patient I was treating for TMJ dysfunction (Piper Classification: Stage Vb). Note the distribution of red, yellow, green and blue colors. I guessed that they might correlate to the amount or intensity of the contacts, and the displacement, intrusion, tipping and rotations of the teeth as they are loaded into MIP (Maximum Inter-Cuspal Position).

If you think about what the software must do to articulate two static models scanned without any occlusal loading using a scan of the bite under dynamic loading, you realize it must super-impose the opposing cusp tips, ridges and fossae into each other. Because the software can match all the data of the tooth surfaces that are not in contact, where they *do* contact, it must represent the amount of super-imposition (collision) with colors.

Think of when you take two opposing arch impressions for crown and bridge and you articulate the models together

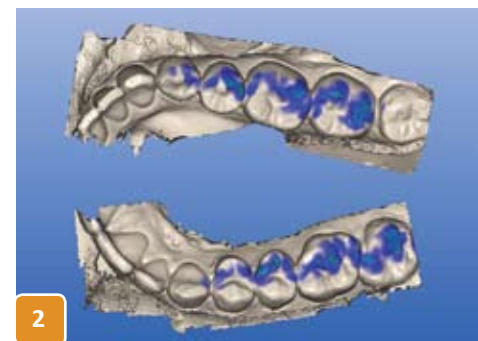
with or without a bite index, and the restorations always come out high. However, when you take one triple-bite impression the crown occlusion is usually near perfect. That’s because the



1

mounting had previously been trial-equilibrated to an acceptable centric-related occlusion.

Prior to beginning, I scanned both right and left upper and lower quadrants and



2

teeth that hit pre-maturely have moved to allow the teeth to reach MIP. If there are interferences, or teeth in hyper-occlusion, you cannot articulate opposing arch models into MIP. And CEREC tells you this!

To test this hypothesis, I used a patient I was treating for TMJ dysfunction. She had been in an occlusal treatment splint in CR for three weeks, all symptoms had resolved, her joints were stable and it was time to complete the occlusal equilibration in the mouth. Study casts mounted in CR utilizing a facebow



3

captured the bite on each side under firm occlusal loading (Figures 1, 2). Note that the color displays on the models nearly perfectly correspond to the markings on the equilibrated models which I have marked in *black*, where the casts were altered during the trial equilibration (Figures 3, 4). I then performed a

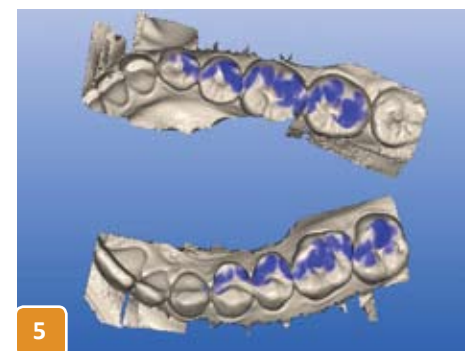
complete occlusal equilibration utilizing all gnathological principles as taught by Dawson, Spear and others. The sequences of adjustments correlated to the colors displayed by CEREC; in other words, the primary interferences were the ones that displayed the most intense colors. At completion, we dusted the teeth, repeated the scanning of both arches and took new buccal bites on each side under the same firm occlusal loading. The post-treatment models articulated by CEREC are shown in Figures 5 and 6. It is readily apparent that there has been a significant improvement in the uniform distribution of forces.

So here’s my take on this: I have been doing in-the-mouth occlusal equilibrations for 40 years, and it remains one of my most enjoyable, rewarding procedures – but one that presents some risks. When done with two sets of articulated study models mounted in centric relation – one trial-equilibrated, and both kept as archived documentary evidence of occlusal problems – you are protected, and your fee is readily accepted by the patient. But it is lot of work. Just try to justify your fee if you just sit the patient down and do an equilibration in 30 minutes. The front desk reports the patient said, “What? He’s charging me *how much* just to grind down my high spots?!” In many situations, I’m very comfortable doing equilibration without mounted study casts, and I think the number of patients in my practice who could benefit from the procedure is huge. However, I don’t like taking impressions and mounting multiple models to store. Isn’t the idea of CEREC dentistry to go plaster-less?

I think it would make a very

impressive presentation to show the patient their occlusal problems on CEREC. The post-operative scans could be taken by an auxiliary and kept as a permanent record of the procedure. The patient can see the changes, and hopefully accept a reasonable fee.

Because I want the patient to see the



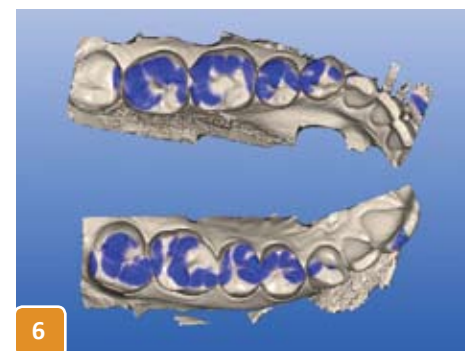
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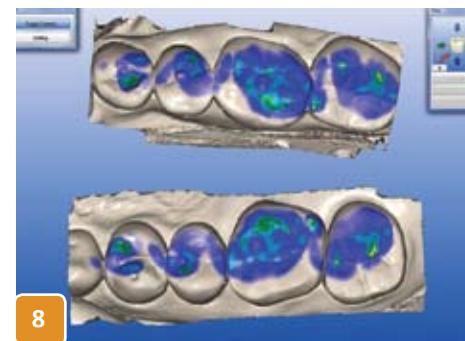
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that appointment; so powerful was the software presentation! A week later this patient returned to address the occlusion on the tooth posterior to the crown.

How do you know a mobile occlusally traumatized tooth has been properly adjusted when the mobility is so severe the tooth displaces apically when you



6



8

value of the fee, I am very attentive to the bite presentation of the “toggle” models during crown preps, showing the patient any occlusal interferences and advising them that further bite therapy may be necessary to achieve a comfortable occlusion (Figure 7). I think this will get me ahead of the curve when someone returns with bite issues after a crown has been delivered and they need more than just the crown adjusted. One patient immediately made a connection to his symptomatic teeth when he saw all the red and yellow marks and accepted full occlusal equilibration at

try to register a mark with articulating paper? I opened the scan from the earlier appointment (Figure 7) and noted the *red* areas on the gold crown that was visibly intruding upon closure, and liberally reduced the corresponding area on the crown. I then repeated the scans and bite, and confirmed that the offending crown was in the *blue*, with a very small *yellow* spot near the fossa (Figure 8). This was reduced, there was no longer any visible movement of the tooth during loading, and the patient confirmed the adjustment with an expression of relief. ❖



Q &

A

with

Brian
LeSage
D.D.S., F.A.A.C.D.

~ BY SAMEER PURI, D.D.S. ~

ONE OF THE MOST RESPECTED NAMES IN DENTISTRY, DR. BRIAN LESAGE practices high-end esthetic dentistry in Beverly Hills, Calif. He has been published extensively, is an accredited fellow of the AACD and also serves as the Academy's fellowship chair. His membership in the AAED was sponsored by his longtime mentor, Frank Spear. Our goal with this interview was to bring the perspective of an extremely esthetically conscious clinician and his thoughts on CEREC, and how the CEREC technology fits into a low-volume high-end esthetic practice. » A celebrated educator and speaker throughout dentistry, Dr. LeSage will be presenting at the August CEREC 25 celebration in Las Vegas.

Q: Can you tell the readers a bit about your history in dentistry and your dental practice?

A: I have been in private practice for 27 years, seven of which were in Washington, D.C., and I just celebrated my 20th year in Beverly Hills, Calif., where my emphasis is on minimally invasive, esthetic, and reconstructive dentistry. I made the decision in 1987 to stop placing amalgam restorations. Even at that point, the extensive research and literature indicated the success and predictability of adhesive dentistry. I have placed adhesively bonded direct and indirect restorations in both anterior and posterior teeth since 1985, but exclusively since 1987.

My strong interest in the science and chemistry of adhesive technology, and my desire to preserve tooth structure established my practice philosophy. I was determined to save tooth structure for my patients, and with adhesive dentistry, the principles of retention and resistance form could be minimized, if not eliminated. I was determined to not place a crown, which even in those very early days I felt was mutilation dentistry. If you presented to my practice and a crown was not on your tooth, you were not going to receive a crown. Tooth structure above the gingiva was maintained at all costs, and partial-coverage restorations were always preferred and utilized. Of course, there are rare occasions when the occlusion or structural or biological requirements might indicate and necessitate the utilization of a crown.

My private practice, the Beverly Hills Institute of Dental Esthetics, includes a state-of-the-art teaching institute with lecture, hands-on, over-the-shoulder and live-patient courses. I designed the institute to teach custom, small- to medium-size programs.

Q: What is your involvement in the American Academy of Cosmetic Dentistry (AACD)?

A: I became a member of the AACD in 1992. I embraced the accreditation process as an intellectual, professional and artistic challenge. I was fascinated by a process in which my colleagues would evaluate and scrutinize my clinical skills through photographic interpretation

and provide feedback and constructive criticisms. I passed all five case types the first time through. I was selected as an accreditation examiner in 1996 and serve the Academy annually as a room chair for the accreditation process.

I served on several small committees and then, in 2004, I was asked to serve as the co-chair with Dr. Jerry Bellen of the 2006 AACD Annual Meeting in San Diego. This meeting was the most successful and technologically advanced meeting ever.

I attempted to attain fellowship credentials in 2000, and in 2002 this was accomplished. I was asked to serve as fellowship chair in 2004 and have been honored to hold this prestigious position and be part of the American Board of Cosmetic Dentistry, the credentialing arm of the AACD, ever since.

In 2009, I was honored with an AACD "Oscar," the Excellence in Cosmetic Dental Education award, and am asked most years to speak and conduct hands-on workshops at the annual meeting.

Q: How long have you been placing all-ceramic restorations, and what kind of materials have you favored?

A: I discontinued the use of amalgams in 1987, so I have a 23-year history of placing all-ceramic restorations. As a result, I have experienced the evolution and revolution of most all-ceramic systems, from stacked feldspathic (even for inlays and onlays), some Dicor, IPS Empress, Vita Mark II, zirconia and now, CAD/CAM in-office milled materials.

Q: What advice would you offer to those clinicians who do not believe in placing porcelain restorations on posterior teeth – specifically molars?

A: Do it for your patients, who will appreciate the preservation of their natural tooth structure. However, the decision to place these all-ceramic restorations must be well thought-out. There are additional skills, techniques, and knowledge that must be gained prior to providing this alternative if predictability and long-term success for your patients are your goals. A knowledge base encompassing

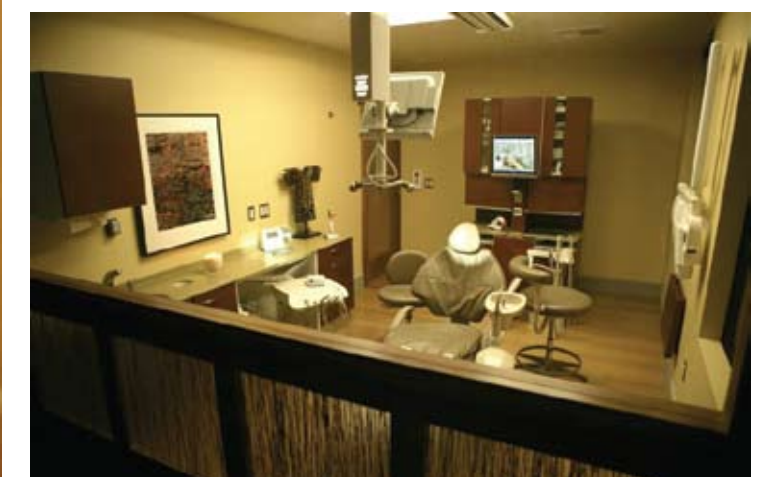
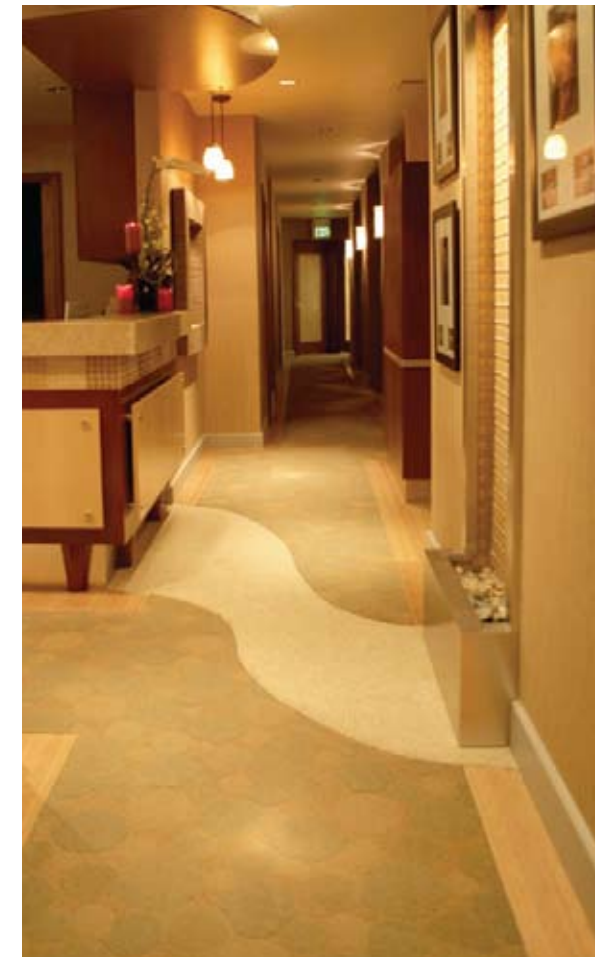
material selection, adhesive science and technique, rubber dam placement (preferably), color and occlusion need to be well-understood.

Q: What are the advantages and disadvantages of an adhesively based restoration vs. a traditionally cemented one?

A: In two words: tooth preservation. I developed the phrase in the early 1990s – most conservative, least invasive, predictable restoration of teeth to normal form and function with tooth-colored material. In most scenarios, adhesive dentistry eliminates the need for retention and resistance form. It is these GV Black principles that are required to prevent restoration failure in the cementation world. Unfortunately, these principles remove additional healthy tooth structure, leading to failures involving pulpal tissue or the periodontal attachment. These are iatrogenic-induced failures that are easily preventable with adhesive dentistry.

"The rewards, successes, and patient satisfaction and referrals will make the journey one worth taking."

The disadvantages of an adhesively placed restoration can be a catastrophic failure/fracture or the need for complete replacement. Whereas many times a cemented PFM or zirconia crown with porcelain fractures can be smoothed, polished, and retained for additional years. Unless in the esthetic zone, most porcelain fractures in all-ceramic inlays and onlays will occur down to tooth structure; some can be "patched," but many will require complete replacement. The frequency of this type of failure in my practice is very similar to what the literature states for cemented counterparts.



PHOTOS OF BEVERLY HILLS INSTITUTE OF DENTAL ESTHETICS BY BRIAN LESAGE

DR. BRIAN LESAGE

Q: How long have you been a CEREC owner, and why did you decide to incorporate the CEREC in your practice?

A: It has been one year as of January, 2010. This technology is another tool to aid in realizing my practice philosophy of delivering comprehensive esthetic dentistry in a painless and efficient manner while preserving tooth structure for my patients. The CEREC 3-D eliminated most of the barriers that I had perceived about the CAD/CAM world.

Today, it enables efficient, one-appointment procedures, without impressions or temporaries, and the marginal fit is very good to excellent.

I presented the following scenario at the last CEREC users meeting in Scottsdale, Ariz.: A patient comes in with a broken tooth or in need of a new indirect restoration. You anesthetize the patient and prepare the tooth; scan, design, mill, and deliver the restoration. At the appropriate time during the appointment, you administer OraVerse, so the patient can return to work without being numb and perform his or her normal daily activities. Now we can efficiently customize our dental care to fit into our patients' lives, and not the reverse.

Q: One of the critiques of CEREC has been the esthetics. As the fellowship chair of the AACD, how do you address these concerns for yourself and the clinicians you interact with?

A: I currently only use CEREC in-office restorations for posterior teeth. The esthetics I achieve are very much comparable to what I was routinely receiving from the laboratory.

CEREC Connect is how I am presently doing anterior restorations. Soon, a DVD will be available to demonstrate how I work with my master ceramist. I see myself doing anterior restorations once I have completely mastered the software and additional laboratory ceramic techniques.

Q: What are some of the pros of one-visit CEREC restorations? What are the cons?

A: The best benefits: time efficiency, no goopy impressions, and no temporaries that could potentially come off. At a time when our schedules are so full and we are trying to do so much to stay

afloat in these economic times, one-appointment procedures also are beneficial. Look around and you'll see that most families have two members in the work force. Losing an hour here or there is lost wages.

However, the techniques can be tricky, and challenges do occur.

“Every day, patients are amazed. They truly cannot believe that we can make a crown in one appointment without traditional impressions and partial coverage temporaries that have a tendency to come off. They are simply WOWed.”

Q: What is your favorite part of the CEREC appointment? What is your least favorite part?

A: Having done adhesively bonded restorations for more than 23 years, routine excellence has always been my practice objective. Adhesive dentistry is a VERY technique-sensitive modality and requires exacting protocols. That said, taking the digital impression is very exciting. Patients are always surprised when we tell them the impression part is over, and without any goo in their mouth!

However, mastering the software still can be an issue, but our design shortcomings are primarily due to a lack of practice.



Q: Compare the financial impact of incorporating CAD/CAM into your practice, vs. using a dental laboratory.

A: We have virtually eliminated all laboratory costs for posterior restorations. This also includes some of the posterior restorations for our esthetic, full-mouth reconstruction cases.

Q: What advice would you give to someone who wants to incorporate CAD/CAM into their office?

A: Timing can be the issue. We have incorporated this innovative technology into our successful high-end esthetic dental practice, as so many others have. Depending on your knowledge base, you may need to learn some additional techniques and skills in order to integrate CEREC into your practice, but it is the future of dentistry. Why not start now?

Q: What was the most difficult part of integrating CEREC into your office? What was the least difficult?

A: The most difficult part was becoming computer savvy with the software. Also, it was necessary to modify our scheduling system, which continues to evolve, as we become more efficient and comfortable with this advanced technology.

The least difficult aspects were the preparation techniques, rubber dam usage, and adhesive material and technique science that come with this sophisticated technology.

Q: What future features would you like to see incorporated into the CEREC technology?

A: I would welcome the ability to move images from CEREC Connect into CEREC 3-D, as well as having parameters stored and utilized when switching from crowns to inlay/onlays.

Thinking outside the box, another useful capability would be taking a scan of the image upon try-in and after delivery, and then have the computer calibrate itself to make an even more ideal marginal fit.

“Now we can efficiently customize our dental care to fit into our patients’ lives, and not the reverse.”

Q: How have your patients reacted to the CEREC technology in your practice?

A: Every day, patients are amazed. They truly cannot believe that we can make a crown in one appointment without traditional impressions and partial coverage temporaries that have a tendency to come off. They are simply WOWed.

We maintain a fairly sophisticated office. We utilize the TLC lighting system with wireless headsets, Brasseler’s electric handpieces, Kerr’s Demi curing lights, Great Lakes Orthodontics’ BioStar unit, a Kavo lab bench, SAM-3 articulators, Vident’s EasyShade spectrophotometer and 400T Vacuum oven, Zeiss loupes with light source and a state-of-the-art teaching facility with wireless Internet. The latter is The Beverly Hills Institute of Dental Esthetics, which we use as a patient lounge for our long appointment cases. Now we have CEREC 3-D, and it’s an even more fun place to go to work every day.

Q: What does the future hold for Dr. Brian LeSage?

A: I have enjoyed 27 years of unbelievable private practice success and fulfillment. My patients have entrusted their dental care to me, and I hold that dear and hope that continues for another 20 years.

Over the past 15 years, I have enjoyed sharing and giving back to my profession through the outreach of continuing education throughout the world. I hope that I maintain my passion, continue sharing my expertise with my colleagues, and make a small difference in the dental health of many people over the world of communities.

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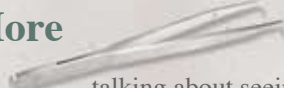
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ESTHETICS

Achieving Natural Esthetics: Optical Properties

BY ROBERT WINTER, D.D.S.

It is important for dentists and technicians to clearly envision a final anterior restoration before it is begun. In order to mimic nature as closely as possible when designing the final veneer or crown, you must understand the physical characteristics of a natural tooth and learn how to visualize form, color, value, translucency and

surface attributes such as luster. The final outcome must fulfill the requirements of form, function, esthetics, and phonetics, be biologically compatible with adjacent hard and soft tissue, and satisfy the patient's expectations (Figure 1).

Whether you are fabricating a restoration chairside or communicating with a laboratory, this series of articles will help you to produce the most natural-appearing restorations.

The first article will focus on understanding the scientific principles related to color, optical effects, and surface attributes.

OPTICAL PROPERTIES OF NATURAL TEETH

The source of all color is white light. The shortest wavelengths are violet, the longest, red. The sequence from shortest to longest is violet, blue, green, yellow, orange and red. An object will reflect some wavelengths and absorb others, causing the brain to perceive subtle nuances of color, translucency and relative opacity. If an object is exposed to a full spectrum of light and absorbs it all, it will appear black. If it reflects all of the light, it will appear white. The less

light, the less color will be apparent. The dominant wavelengths that are reflected in a natural tooth are in the yellow-orange spectrum (Figure 2).

The perception of a tooth's color is subjective, and depends on a number of factors:

- The quantity, quality, and source of light — for example, natural vs. artificial
- The light conditions under which the tooth is being viewed — minimizing or controlling the light reflected off adjacent objects such as the patient's clothing or the walls in the room, can reduce the variations in color that are perceived
- The sensitivity of the viewer's eye
- The visual interpretation of the perceived color
- The particular optical properties within different levels of the teeth
- The darkness or shadows of the oral cavity — this is in sharp contrast to natural teeth, accentuating the perceived brightness

Whether the restoration is being fabricated chairside or in the laboratory, the light conditions under which you



» Fig. 1: This smile demonstrates the subtle beauty of nature. The goal of dentists and technicians is to mimic the realities found in nature. The patient's desires and expectations may cause the esthetic outcome to vary from the ideal.

» Fig. 2: It is important to have a controlled light environment in order to critically evaluate teeth. This allows for accurate shade evaluation and translucency assessment.

» Fig. 3: This is a cross-section of a maxillary central incisor which shows the varying enamel thickness from the CEJ to incisal edge. The range in thickness is 0.3 mm to 1.2 mm. This varying thickness will diffuse the light that is being reflected off the dentin.

» Fig. 4: Photographing objects in fluorescent light is difficult due to the low levels of visible light created. Natural teeth fluoresce white with a slight blue tone. The blue appearance seen in this photo



is exaggerated. The maxillary left central is prepared exposing the dentin. The dentin fluoresces more than enamel. There is a ceramic core on the right central which exhibits little fluorescence.



view the existing dentition and produce the crown must be similar, so that you can produce a restoration that is harmonious with the adjacent natural teeth. Natural light sources have more ultraviolet components than some artificial sources, so viewing the teeth in natural light or under color-corrected lights would be optimal. Color-corrected artificial sources of light should measure between 5,000 and 5,500 degrees Kelvin.

QUANTIFYING COLOR

The three dimensions of color (hue, chroma and value), were quantified by A.H. Munsell in 1898¹.

- Hue: The color of the wavelength of the light that is reflected from an object. The other wavelengths are absorbed.
- Chroma: The intensity, concentration, strength, or saturation of the hue. A change in chroma has a corresponding change in value. As chroma intensifies, value decreases.
- Value (or luminescence): The amount of light that is reflected or absorbed by a tooth. It is a measure of the quantity or brightness of light reflecting from the tooth, and is the easiest dimension of color for most people to perceive. The value of a tooth is influenced by the chroma level, the thickness and character of the enamel, and surface attributes.

These terms apply best to opaque objects. However, teeth are translucent, so this can create some confusion, especially when relating value. The perceived color of a tooth results from a combination of light directly reflected from the tooth surface, combined with the light that has entered the tooth because of its translucency. The light has been internally refracted, and then either absorbed or reflected off the dentin back to the viewer. The dentin is the prime source of color and value as it determines the amount of light that is reflected back through the enamel, and is modified by the enamel's thickness and t

ranslucency (Figure 3). Translucency could be considered the fourth dimension because of the complications it brings to the perception of the first three.

OPTICAL EFFECTS

- Fluorescence: A form of photoluminescence. It is a result of ultraviolet light (a non-visible spectrum wave under the violet range) being absorbed by an object, which then emits the light energy back within the visible spectrum². Natural teeth, when exposed to ultraviolet light fluoresce predominantly white with a slight blue tone. Dentin fluoresces much more intensely than enamel (Figure 4). As the chroma of a tooth's dentin increases, the fluorescence will decrease.
- Opalescence: Enamel is a translucent, almost transparent, and colorless entity. The rods and spaces within the enamel will cause light entering the tooth to be scattered. When light disperses and refracts on microcrystals within the natural tooth, it causes opalescence. The resulting effect is that the blue, short wavelengths are scattered and reflected back, and the longer, red/orange wavelengths are transmitted through the enamel. Opalescent characteristics are most apparent in the incisal edge and proximal corners where there is only enamel (Figure 5). When enamel is viewed from the labial aspect, opalescence will give a tooth a bluish translucency at the incisal edge, even though it is colorless. There are no blue particles in the enamel; the effect is strictly caused by particular wavelengths of light being either reflected or transmitted.

There are a number of factors that can cause the enamel to appear fairly white when it overlays the dentin of the tooth. They include:

- If teeth are dehydrated, air replaces water between the enamel rods, changing the refractive index and making the enamel appear an opaque white.
- The differences in optical density between enamel and dentin. More light reflects off dentin because it is denser. In young teeth, the dentin is lacking color saturation and is high in value. The result is that more light reflects off the dentin, making the enamel appear to be whiter. Older teeth have highly chromatic and low-value dentin, which makes the enamel appear more translucent.
- The strong fluorescent quality of dentin increases the amount of light that is being emitted from it, therefore more light is scattered within the enamel.

SURFACE ATTRIBUTES

The surface topography affects the quantity and quality of light that both reflects off and penetrates the teeth. A smooth surface will exhibit regular reflection without diffusion. A rough or irregular surface will diffuse the reflection, scattering light in multiple directions (Figure 6). The luster on the surface is related to the relative amounts of specular (mirrored) and diffuse reflection³. The topography and luster of a tooth influences the perceived hue, chroma, value, and translucency (Figure 7).

CONCLUSION

Understanding the principles of color, optical effects and surface attributes will assist you in producing a natural-appearing restoration. In subsequent articles principles and techniques will be explained for establishing physiologic contours and surface characteristics, chairside fabrication of restorations using surface stains, and ceramic

layering to three-dimensionally simulate natural effects. ❖

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» Fig. 5: The opalescent effect is best visualized in the incisal edge and proximal corners of anterior teeth. The blue wavelength of light is reflected due to the microcrystals in enamel.

» Fig. 6: The central incisors exhibit an opalescent effect with internal dentin streaking toward the incisal edge (mamelons). The incisal halo on the edge is also apparent. The teeth appear very translucent because of the smooth surface and high luster.

» Fig. 7: When there is an increase in surface texture and/or the surface is more matte than shiny, then less light penetrates the surface of the tooth. More light is scattered in an irregular pattern off the surface, making it appear less translucent.

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HOW-TO

Esthetics Via Correlation

BY MICHAEL SKRAMSTAD, D.D.S.

With the advent of software V3.8, we see the introduction of Biogeneric Crowns. This revolutionary design protocol not only simplifies the design process of full-coverage crowns, but also allows us another powerful technique to look at the smile design process. However, we

cannot forget about our trustworthy “friend,” Correlation, which has long been the standby for anterior crown design and still has its place for easy, predictable anterior restorations.

In this example, we will explore a situation that is perfect for Correlation. As is the case with many single-unit anterior restorations, our goal is to copy the exact symmetry, proportions, and function of the preoperative tooth. In the past when using a lab, this was a very difficult proposition. They use a combination of pre-op/temp models, photographs, jigs and digital calipers to try their best to mimic nature in the final restoration. Even for the very best technicians in the world, this is cumbersome and difficult.

Using CEREC 3-D chairside and inLab software, this could not be easier. A simple image of the pre-op tooth will do everything the lab has struggled for years to accomplish. Correlation can turn what would normally be a cosmetically challenging case into quick, predictable dentistry.

CASE STUDY

A female patient presented with a heavily decayed lateral incisor (#10). She was asymptomatic, but pulp test



revealed the tooth was necrotic. She had no desire to correct the tooth rotation or cosmetics of her smile, just wished to have #10 treated. Since the lateral had excellent form, function and symmetry in relation to the rest of her smile, I decided the design process of choice would be Correlation. (Figures 1a, 1b, 1c).

After imaging the preoperative tooth, all the caries were removed and an RCT endodontic procedure was performed (Figure 2a). I subsequently built up the tooth with a dual cure buildup

performed (Figures 2b, 2c). In this particular scenario, there was no need to place the margin subgingivally. A supragingival margin in the enamel will aid in imaging, margination, bonding and patient care post-treatment. After imaging the prepared tooth, I marginated the prep. Again, leaving the margins supragingival allowed the software to easily locate the margins (Figure 3).

The key to successful anterior correlation is drawing the green copy line. It is imperative to move the copy line

material. No post was required in this case because there was sufficient remaining tooth structure to retain the buildup. The crown preparation was then



to include all of the incisal edge, point angles, and as much of the facial line angle information as possible (Figure 4). In the new 3.8 software, the pink proximal contour line step has been eliminated. This makes the proposal much closer and gets rid of the “proximal bulge” that we used to have to deal with. The way the new Correlation works is everything within the green line is copied 1:1, and everything outside the green line is biogenerically formed. Once you have your proposal (Figures 5, 6), it is important not to use the Form tool near the incisal of the virtual restoration. A rule that I go by is to draw an imaginary line half-way cervical/incisally. Do not use the Form tool above this line. If you do,

you will tend to round off the point angles and “ruin” the exact copy of the preoperative tooth. Just use the Form tool to fix the contact area and any discrepancies along the cervical. After milling the restoration (in this case, milled with Vita Trilux 1m2c), I needed to do some custom staining and glazing to match the adjacent central incisor (#9). Often times, “seeing” the color in a tooth can be quite difficult. One trick that I often employ is manipulating the digital photograph with Photoshop. Simply decreasing the brightness and increasing the contrast of the photo will allow the colors to “pop” a bit more. By doing that in this case, it allowed me to see the areas of translucency and chroma of the

Using CEREC chairside and inLab software, this could not be easier. A simple image of the preop tooth will do everything the lab has struggled for years to accomplish. Correlation can turn what would normally be a cosmetically challenging case into **quick, predictable dentistry.**

adjacent tooth to copy in my new restoration (Figures 7a, 7b). I created the “halo” effect by placing white on the incisal edge, and a more intense blue stain on the lingual of the incisal. I finished by using an A2 shading paste to create the “streaks” of chroma seen on #9.

By performing the above steps, the final restoration is an exact copy of the patient’s tooth prior to treatment, and the color matches quite well (Figures 8a, 8b) and (Figures 9a, 9b, 9c). Correlation allows us an easy way to handle cases like this predictably and will continue to be an excellent design method for single- and multiple-unit anterior restorations. ❖

CASE STUDY

CEREC: A Practice 'Game-changer'

BY RYAN LOVE, D.D.S.

The possibilities in life are endless. This also holds true in the world of CEREC. Incorporating this technology changed the way I practice. With a sound philosophy in dentistry via Spear Education and the use of CEREC technology, I have two 'game changers,' as Scottsdale Center for Dentistry CEO Imtiaz Manji would say.

HISTORY / EDUCATION

In 2001, I signed up for my first of three hotel courses with Dr. Frank Spear. The following year I had completed the hotel seminars and the main workshops, and found myself in a local study club with Dr. Spear as the mentor (Figure 1). It was likely that the fear of failure, followed by an exceptional educator and finally a bit of luck that has cemented my philosophy in dentistry and daily practice.

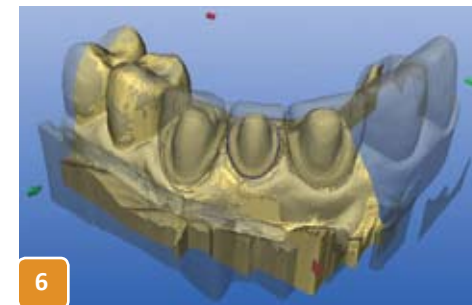
When I purchased CEREC in 2006, I completed the mastery courses at Scottsdale Center and helped in the lab before finishing *The Business of CEREC*. In the past two years, my two tracks of education came together when Spear Education joined Scottsdale Center for Dentistry. I was able to continue my Spear education with the live-patient experience and the Spear Faculty Club. In participating with the live-patient experience, I was able to use CEREC technology to enhance my educational experience (Figure 2).

TECHNOLOGY

Technology and education have definitely been at the forefront of my practice. I have experienced both the frustration and the 'Louisville Slugger'

(or, 'hitting it out of the park') moments. We all have definitely experienced ups and downs with technology. The satisfaction of delivering dentistry in a modality that benefits our patients and makes our dentistry come alive is worth the times of frustration.

These two educational tracks have continued to develop my training and skills. The development and sequencing of treatment planning with the delivery and use of CEREC have merged the two worlds of CAD/CAM and traditional dentistry without compromise. With a



solid treatment-planning foundation and the use of CEREC technology, I have been able to deliver smarter dentistry. Since adding CEREC technology to the practice, single-visit dentistry has become the reality. I have taken fewer material impressions and increased virtual impressions with CEREC Connect. Same-day smile design has given me

the opportunity to treat appropriate cases both with and without a chair-side ceramist. Although it can create an intense day, feedback from patients has been quite positive.

This past fall, the addition of GALILEOSCBCT (Cone Beam Computed Tomography) to the office has opened up more opportunities to treat patients. It has

given me more diagnosis capabilities and is quickly becoming the standard of care. CBCT has given me more confidence with implant placement and radiographic diagnosis.

With the release of the new CEREC 3-D software 3.8, it is even more exciting to see what CEREC and GALILEOS will do.

THE CASES CASE #1

This case was treated at the live-patient anterior program at Spear Education. The 53-year-old female had six anterior Dicor crowns that were 15 years old. At the time she was selected, four of the six crowns had vertical fractures in the material and porcelain had fractured off the fifth. Three teeth were treated at the time of fracture.

The treatment plan was generated using the *Facially Generated Treatment Planning* (FGTP) process. Records were taken and models were mounted in CO on a SAM 3 articulator. During the treatment planning consult, the patient did not want to change her gingival contours with crown lengthening or gingival grafting. She did not want her cant from left to right corrected. She requested that the crowns be replaced with a more vibrant material. (Figures 3, 4). The treatment plan and mounted models were sent to the lab for a diagnostic wax-up, a putty matrix and depth guides. Downtown Dental Designs was used to prepare the lab work prior to treatment (Figure 5).

The treatment plan was split into five sections. The centrals were treated first, to confirm the shape contour and color with the patient. Using the prepped centrals and bicuspids as stitching abutments (Figure 6), the laterals and canines were

prepped both right and left side as sections two and three, respectfully. As each crown was designed and milled (Ivoclar Vivadent Empress multi-unit blocks) they were fitted and checked for accuracy. The anterior six crowns were then picked up by the ceramist with a putty jig to aid in contour, shaping and texture and cut back (Figures 7, 8). As the front crowns were processed by the ceramist, the three bicuspid were then treated as routine CEREC veneerlays, for sections 4 and 5. The Sarmen technique was used to treat these teeth (Figure 9). A final try-in of all nine units was completed for final fit and patient acceptance. Routine isolation was completed with the insertion of the Isolite system. In the bonding process Kerr Optibond Solo Plus was used with Kerr NX3 light cure cement. Final photos (Figures 10, 11). One difficulty that was managed in this case was the gold post in tooth #7. In choosing not to remove the gold post, cut back and block out was used to mask the gold (Figures 12, 13).

veneers due to her age, potential growth, and cost.

The case was treated with direct composite veneers (Figures 15a, 15b). Seven years later, the composites were breaking down and ready to be replaced (Figure 16). The process learned in the *Facially Generated Treatment Planning*



11



10



12



13

CASE #2

I first met this patient when she was 18 years old. She presented with underdeveloped enamel and severe decalcification (Figures 14a, 14b). Her main concern was the color of her teeth. The treatment plan was generated using the FGTP process. Records were taken and models were mounted in CO on a SAM 3 articulator.

During the treatment planning consult, the patient and her parents did not want to change her gingival contours with crown lengthening or gingival grafting. She did not want the teeth repositioned, did not wish to correct the slight cant, and did not want to change the contour of her teeth. We decided not to place porcelain

seminar was reviewed and reevaluated. The same steps were followed as stated above. The only change requested involved a contour change to make the teeth look softer and more rounded. Gingival tissue could be modified with a soft-tissue laser. The patient did not want to change her gingival contours with crown lengthening or gingival grafting.

The treatment plan and mounted models were sent to the lab for a diagnostic wax-up, a putty matrix and depth guides. Downtown Dental Designs was used to prepare all of the lab work prior to treatment. In all, 10 teeth (#4 to #13) were treatment planned

Prior to preparation, the putty matrix was used to establish full contours

for the patient to make any necessary contour changes prior to preparation (Figure 17). This benefited the patient, doctor and ceramist to establish the new smile in the patient's mouth prior to treatment.

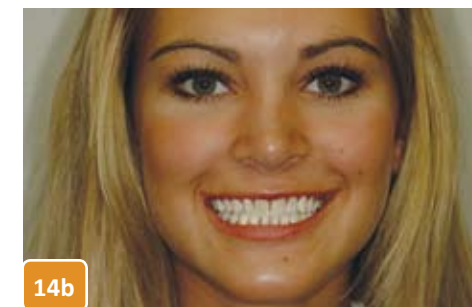
At the time of treatment, the case was split into five sections. The anterior six were treated in three sections, similar to the previous case (Figures 18a, 18b, 19). The centrals were treated first. This was done to confirm with the patient the shape, contour and color. Using the prepped centrals and bicuspid as stitching abutments, the laterals and canines were treated both right and left side (Figure 20). As each crown was designed and milled (Ivoclar Vivadent



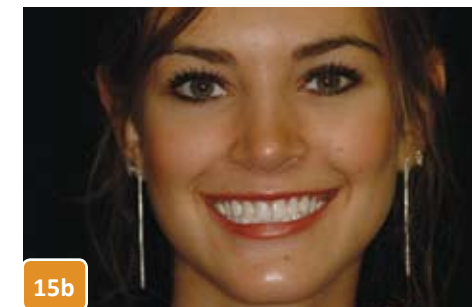
14a



15a



14b



15b

Empress multi-unit blocks), they were fitted and checked for accuracy. The anterior six crowns were then picked up by the ceramist with a putty jig to aid in contour, shaping and texture. As the front crowns were processed by the ceramist, the three bicuspid were then treated as routine CEREC veneerlays. The Sarmen technique was used to treat these teeth. A final try-in of all 10 units was completed for final fit and patient acceptance. Routine isolation was completed with the insertion of the Isolite system. In the bonding process, Kerr OptiBond Solo Plus was used with Kerr NX3 light-cured cement. Final photos (Figures 21, 22). Six



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weeks following the treatment in office for same-day smile design with the ceramist chairside, the anterior six teeth in the mandible were treated without a ceramist (Figure 23).

CONCLUSION

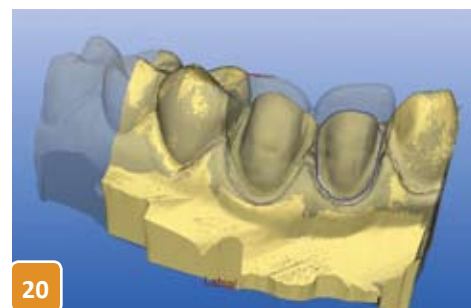
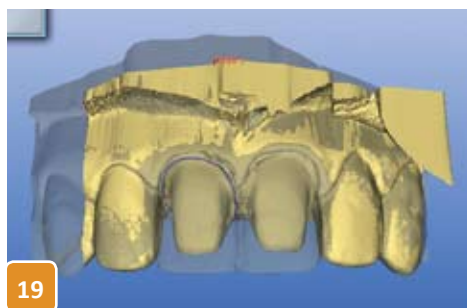
Technology is running at a never-ending pace. We see the half-life turn over in less than five years. Dental companies push product to professionals

It is imperative we know our technology. The investments we make are too costly to become paper weights and dust collectors in the dark corners of our offices. **Technology is like the ocean — it is vast and in constant motion.**

and to consumers, tempting us to make decisions based on their marketing strategies. It is imperative we know our technology. The investments we make are too costly to become paper weights and dust collectors in the dark corners of our offices. Technology is like the ocean — it is vast and in constant motion.

Investing in what we know and understand, choosing a good educational compass, and using our beacons wisely gives us knowledge and understanding to manage our practices.

(Thank you to Mr. Eddie Corrales, owner of Downtown Dental Designs, and Dr. Bradley G. Shern, D.M.D.) ❖



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PROFILE

Daniel Vasquez, D.D.S.

BY MARK FLEMING, D.D.S.
AND DARREN GREENHALGH, D.D.S.

For his California-based 'green' practice, Daniel Vasquez found a perfect fit with CEREC.

Q: How long have you been in practice?

A: I've been in practice since 1995. After graduating from dental school at Universidad Autónoma de Guadalajara, Mexico, in 1990, I returned to southern California after completing national and state requirements. I worked as an associate dentist for four years for various large corporate dental companies, where I learned the business of dentistry. In 1999, I decided to move on in my personal journey as a solo practitioner, and opened my private practice in Vista, Calif. During the last 10 years, I have focused my knowledge on new technology – computer systems, digital radiography, digital imaging, dental lasers and now CEREC. In April, 2010, we opened our new facility in Oceanside, Calif., where I am thrilled to say we are 98 percent paperless. In the future, I plan to turn my office into a 100-percent green dental facility.

Q: What is the size of your practice?

A: I am very excited to say that in April, we moved from Vista to our



new facility in Oceanside. I have a total of eight staff members: three dental assistants, one treatment coordinator, two receptionists, one hygienist and my beautiful wife Lulu, who deals with all the financial aspects of the office.

Q: How many operatories do you have? What type of dentistry do you do?

A: I run a family and cosmetic practice. We have a total of six operatories, thus there is a big demand for being highly efficient. The best way to be efficient? Educate yourself. We have taken numerous courses – esthetics and occlusion from Las Vegas Institute for Advanced Dental Studies, progressive orthodontics seminars, implants seminars

“A very good friend of mine called me and said, “Daniel, I need a crown. Can you do it for me?” I was more than happy to help, so I went to his office and he told me, ‘Today I’m changing your life.’ He introduced me to CEREC CAD/CAM technology; he knew I am very tech-driven and that I was going to fall in love with it. He had it all planned out.”



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Q: Why did you choose CEREC as your CAD/CAM choice?

A: A very good friend of mine, Dr. Greg McElroy, called me, and said, “Daniel, I need a crown. Can you do it for me?” I was more than happy to help, so I went to his office and he told me, “Today I’m changing your life.” He introduced me to CEREC CAD/CAM technology; he knew I am very tech-driven and that I was going to fall in love with it. He had it all planned out. In the same room was Remo Sagastume, a Patterson CEREC specialist who was helping with the design of the restoration. Forty-five minutes after my preparation we were cementing the crown. WOW!!! Not surprisingly, a few months later, Remo came to deliver my new CEREC.

Q: How does this technology fit into your office philosophy?

A: I’m a technology-driven doctor. I enjoy working with computers, software like Photoshop and Adobe Illustrator; we use digital X-rays, Caesy System, we are 98 percent paperless – every piece of paper is scanned and stored onto my server hard drive. Now with CEREC, I have not taken a PVS impression for any fixed prosthodontics in more than eight months. If I need a case to go to the lab, I am able to use CEREC via CEREC Connect, and capture everything digitally.

Q: How does CEREC impact your practice?



» Dr. Daniel Vasquez's staff at the office in Oceanside, Calif.



A: My CEREC has had a huge impact upon my patients, and even more so on me and my practice. It was delivered to my office in September, 2008, when the economy was going downhill. My first month, we made about 50 crowns. Thanks to the CEREC technology, it gave me the opportunity and the ability to perform all types of dentistry. We grew 3 percent in the 2009, and CEREC is still the clear leader in my daily production.

Q: What is your favorite CEREC procedure?

This is easy to answer – single anterior units. The reason? Perfection. And I like that. I like that ability to control line

angles, emergence profiles, embrasures and contacts. I like the control I have over the color of the restoration, which is one of the most challenging aspects of single-unit anterior restorations. No longer do I have to bring the patient back multiple times and hope that the shade is correct.

Q: What is your most unique CEREC procedure?

A: I made a few crowns on a lower-income patient, and the shade was A4+. I had to play with stain and glaze for 30 minutes, but I did it. The patient was thrilled, and so was I.

Q: If someone was to take your CEREC

away today, you would ... ?

A: They must have a very good reason for taking it. Let’s say they do. I would call Patterson and get a new one, simple as that.

Q: Anything else you would like to add?

A: I do appreciate what CEREC has done to my professional life. I try to be active in cerectoctors.com, in the CEREC forum on Dentaltown.com, working my way to be a certified Patterson CEREC basic trainer to help others in the San Diego area. And now being part of the [cerectoctors](http://cerectoctors.com) mentor team for Scottsdale Center for Dentistry, helping Drs. Puri, Mirzayan, Fleming and Greenhalgh. ❖

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HAPPENINGS IN THE CAD/CAM WORLD

Good Is the Enemy of Great

BY SAMEER PURI, D.D.S.

As you are reading this issue, one of two scenarios is happening. Either you are reading this magazine from the comfort of your home or office, or you actually took the time to come to Las Vegas to celebrate the largest CAD/CAM gathering of clinicians ever held – the CEREC 25 meeting. If you are in Las Vegas, I congratulate you, and hope that your path on this dental journey is fruitful and enjoyable.

If you are sitting at home, I ask, why? Why would you not choose to engage in your profession, engage at the highest level with a piece of equipment that you most likely spent upwards of \$100K on, which no doubt has given you an ROI many times over your purchase price, provided you have actually taken the initiative to utilize the technology to the fullest.

I recently finished a book called *Good to Great*, by Jim Collins. The story parallels so much of what I see in the average dental clinician. The book starts out by saying that the enemy of great is good – meaning that if you are just good enough, most people/companies/offices never strive to be great. Being good is, well, good enough.

Being great actually requires you to work. It means that you have to step out of your comfort zone, do new procedures, learn new things, confront the staff member who is holding the rest of the team back, or maybe even admit that your practice is not as successful as it could be because of the person you see in the mirror.

Some engage fully in their lives and practices, and reap the rewards. Whether it's our personal or our professional lives, the difference between being good and being great requires effort and hard work. It's good to be healthy and try to work out as much as possible. Going to the gym and sitting on the bike



reading a newspaper is good. But going to the gym and going to the spin class where you are dripping buckets of sweat from the effort is great. Walking on the treadmill is good. Running six miles as fast as you can, always trying to improve your time is great!

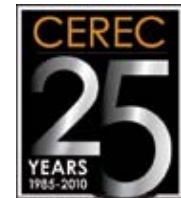
In dentistry – specifically CEREC – being good means going to the office and turning on your machine every once in a while. Being great means

being active on www.cerectoctors.com and finding out about things like the Buccal Bite, months before your colleagues. The great ones learn how to fabricate an e.max restoration

Being great actually requires you to work. **It means that you have to step out of your comfort zone,** do new procedures, learn new things ... or maybe even admit that your practice is not as successful as it could be because of the person you see in the mirror.

in about the same time as the other porcelains, by learning and going to courses and classes. They are the ones who stop wasting their money on PVS and use CEREC Connect to send bridges, gold restorations and large cases digitally to their laboratory.

In regard to the CEREC 25 celebration in Las Vegas, being



I'd like to extend a special welcome to CEREC 25 attendees. Being a part of this celebration is a singular opportunity to experience technology with the biggest names in CEREC. Be sure to stop by the cerectoctors.com booth (#319) and introduce yourselves. And be on the lookout for our orange cerectoctors.com t-shirts – what the best-dressed CEREC docs will be wearing. Get yours free at our booth on Thursday, Aug. 26 and wear it on Friday, Aug. 27. One lucky wearer will win \$1,000 in Caesars Palace chips!

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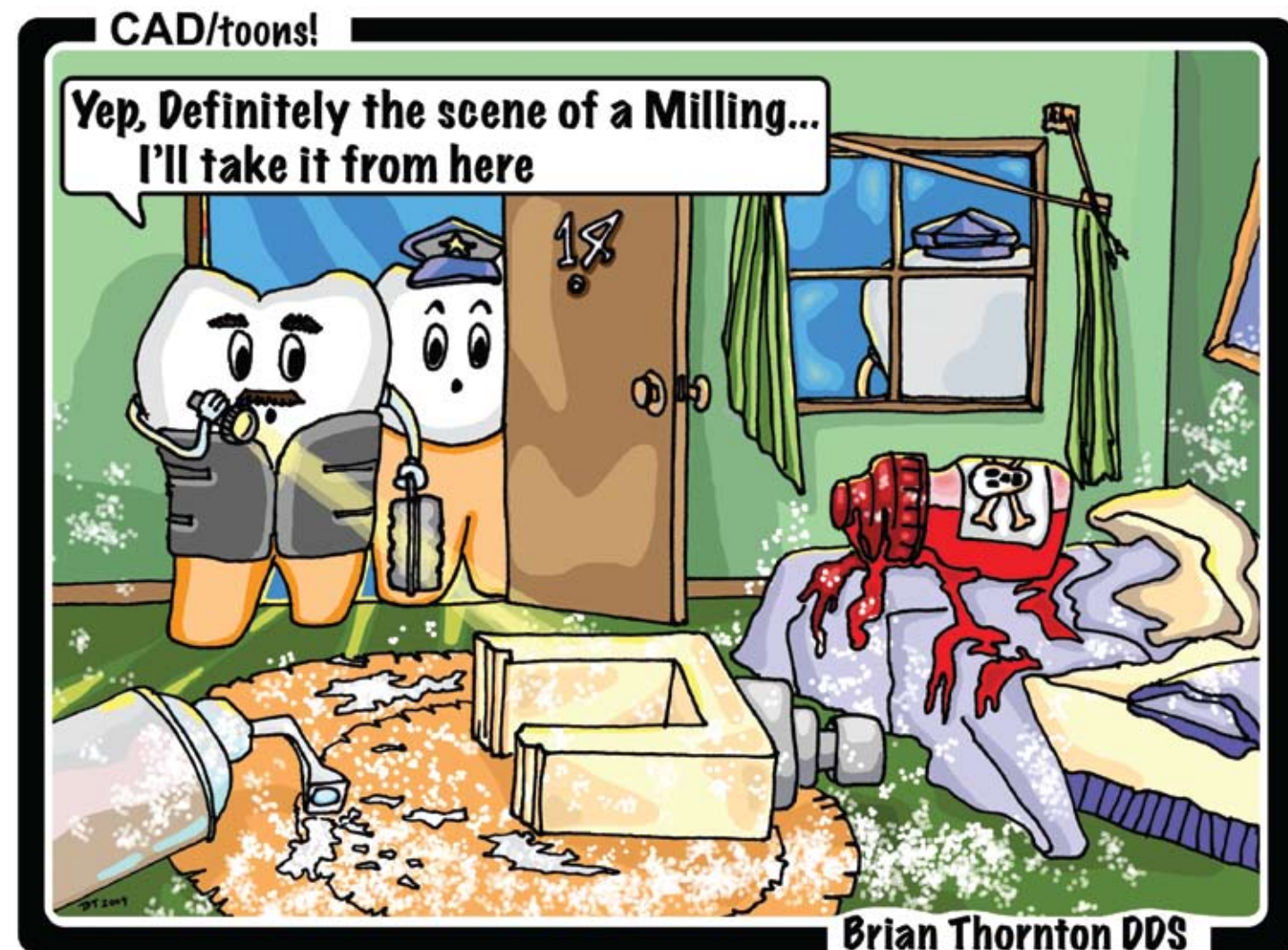
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good means that you sit at home and read about the meeting and hear about it from colleagues and friends who may have attended. Being great means that you were in the audience when Dr. Frank Spear showed how he utilizes the CEREC; Dr. Jay Reznick showed how a CEREC can be part of an oral surgeon's office; Dr. Paul Child showed the incredible success you can have with the great materials available for our CAD/CAM system.

Great offices and clinicians stay engaged, and they learn the latest and greatest. In my practice, utilizing items such as the Zeiss microscope, the GALILEOS, the CEREC CAD/

CAM - among many other pieces of technology - has allowed us to be great to our patients. Being great doesn't mean that you have the hand skills of God when cutting that perfect onlay. Being great means that you engage, you learn and you stay motivated.

I hope that in life you are never just good. Being good is the enemy of great. Step out of your comfort zone, do a procedure that you normally refer out. Learn something that you didn't know, whether online, in print or in person. But no matter what you do, do it well and be great at it! ❖



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