Alternative treatment options with nanohybrid composites

By Bruce J. Leflanc, DDS

In the past few years, the economic condition of many of our patients has changed, thus limiting their options when making dental treatment choices.

Average patients where lab-processed restorations may be the optimal long-term option, patients may be forced to choose dentistry that will transition them, not only spreading out treatment over a longer period of time, but choosing restorations that require less immediate cost. For many of us practicing dentists, this can include our family and friends.

In my practice, I have always developed patient-friendly choices both for financing as well as the treatment offered. We use digital X-rays and photographs to triage and explain treatment needs and solutions, encouraging our patients to be involved with treatment decisions.

There is little doubt that today’s porcelain crowns offer maximized esthetics for the longest period of time. However, these types of restorations, especially when multiple teeth are involved, may be beyond a patient’s ability to pay.

Recognizing that a current financial limitation can be temporary should be considered when charting a path that hopefully assists a patient in keeping his or her teeth for a lifetime in comfort.

Our ability to offer different treatment options to solve the same clinical condition can be a tremendous service to our patients and creates some of our most satisfying success stories.

In that regard, I am sharing in this article two situations that I encountered where the need for restorations was immediate and yet the patients were financially limited as to how much they could afford.

In my practice, nanohybrid composites are my preferred restorative materials of choice when creating alternatives to lab-processed porcelain. These restorations can be sculpted in a way that minimizes the amount of tooth structure removed while providing durable long-term success when done with bonding agents and techniques that maximize adhesion.

The following cases offer insight into how we use these materials to offer treatment.

Wanted: whiter, brighter teeth

AACD members expect the demand for teeth whitening to increase this year

Teeth whitening seems to be on everyone’s wish list—and this momentum is likely to continue through 2011, according to a quick poll of members at the American Academy of Cosmetic Dentistry (AACD).

AACD members performed an average of 77 whitening treatments last year, and 57 percent said they expect this number to rise.

“We are doing more whitening than ever before in our practice,” says Shannon Pace Brinker, certified dental assistant and clinical editor for CPS magazine.

Pace Brinker performed more than 400 whitening treatments in the past year, and gives credit for the treatment acceptance due to the ability to offer a high-quality whitening system with options to treat her patients based on bleaching strength, time, finances and patient compliance systems within her practice at Greenbrier Dental in Chesapeake, Va.

Pace Brinker says that her practice has reduced its whitening fees, which has not only brought in more patients seeking whitening—but it’s also opened their eyes to other cosmetic dental treatments.

“Our existing patients are saying yes to other procedures after the whitening, such as bonding, replacing amalgam fillings and replacing porcelain restorations to match the whitening they have achieved,” she said.

While the number of patients seeking whitening treatments will likely increase this year, Pace Brinker expects that the fees for whitening will actually decrease, due to specials offered by dental practices through deal-a-day sites such as Groupon and LivingSocial.

The average price for a whitening treatment is about $150 for take-home whitening and $350 for in-office, Pace Brinker says. Since her practice adjusted the fees for treatment, she sees up to 12 to 14 patients per day on Mondays and Tuesdays just for whitening.

“Our case acceptance has exceeded our expectations with these adjusted fees,” Pace Brinker said.

AACD members said their practices generated about $19,100 on average from whitening last year.

The majority of AACD members polled said they provide in-office and take-home whitening treatments. Twenty-two percent said their patients have told them they use over-the-counter or commercially available whitening treatments.

Gender-wise, it seems that women are more concerned with a white smile. Roughly 65 percent of dental patients seeking whitening treatment last year were female, according to the poll.

“I think women are used to paying higher fees for services to make us look and feel better,” Pace Brinker says. “Currently, men are more concerned about costs; however, as the market continues to be concerned with whiter teeth, I think you will see a trend from our male patients that is more equal to our female clients’ philosophy.”
alternatives that patients enthusiastically accept in that they minimize tooth removal and reduce immediate costs.

Case No. 1

Often in orthodontics, tooth shapes can present challenges in achieving optimal results. Some conditions may require restorative as well as orthodontic treatment to complete.

In this case, we were presented with a challenge that many of us encounter routinely in practice: peg-shaped lateral incisors with very pointed cuspids.

Figure 1 shows the patient in mid treatment for orthodontics with the upper cuspid rotated past 90 degrees.

The orthodontist corrected the rotation and created appropriate spacing on each side of the peg laterals to facilitate optimal tooth shapes during reconstruction.

When dealing with peg laterals, it is my preference that 60 percent of the space be orthodontically positioned on the mesial of the lateral incisor and 40 percent on the distal.

This allows the shaping of the lateral incisor to have proper mesial canting in appearance. Figure 2 shows the final condition after braces were removed.

At this point, I would ask you to consider what options you would offer for a similar case in your practice. In my opinion, it was necessary to address not only the peg laterals and spacing, but the shape of the cuspids.

Prescribing multiple porcelain restorations was not only financially unrealistic for the patient, but also required considerable removal of sound tooth structure. Our initial treatment was to use take-home bleaching to lighten the tooth color to a “realistic to maintain” B1 range.

It is my belief, based on what I see clinically at recalls of treatment we have previously provided, that nanohybrid direct composite restorations offer durable outcomes while removing minimal tooth structure.

In my practice, Kerr Premise, Herculette Ultra and Cosmedent Nano are materials of choice that sculpt nicely, blend easily and maintain a gloss polish at recall that maximizes appearance while minimizing plaque retention.

I am convinced that it is crucial to use bonding agents that maximize etching and sealing of enamel. For that reason, I continue to use etch/rinse multi-bottle systems that allow proper application and drying of primers to eliminate solvents and minimize sensitivity.

I believe proper enamel sealing and adhesion is a critical component of durable adhesive restorations and an important barrier in protecting the underlying dentin.

This case required no tooth removal. For many patients, conserving tooth structure makes direct composite dentistry very appealing. Treatment was completed with one shade of nanohybrid.

The relaxed posture of the smile, shown at completion of treatment in Figure 3, indicates the patient was comfortable with her appearance. For this patient, the outcome was life changing.

Follow-up photos taken at one year postop shown in Figures 4 and 5 show close-up views of the completed restorations exhibiting a retained polish and esthetics that can be typical and predictable with nanohybrid composites.
Case No. 2
In my practice, I am seeing more patients with decay that I believe to be related to taking or abusing medications that dry the mouth in combination with high sugar intake.

We as dentists have recognized for a long time the implications of reduced salivary flow in increasing caries as related to radiation treatment and have become more aware in recent years of similar clinical conditions related to medications that cause decreased salivary output.

Figure 6 shows our patient with decay that was limited to facial areas yet quite severe. Her history indicated using medications that decrease salivary output while drinking an excessive amount of sugary drinks.

Although the preparation to remove decay was extensive, as shown in Figure 7, much more tooth structure was retained by doing direct nanohybrid restorations as compared with preparations for lab-processed restorations.

Gingival hemorrhaging from tissue contouring was quickly arrested with Ultradent Astringedent X, followed by cleaning the remaining residue with Ultradent Consepsis. I have found no matrix system to compare to the Greater Curve band for doing these types of whole tooth composites. Figure 8 shows how we positioned the matrix in a way that a gingival seal was achieved and a perimeter created to mold the composite.

The case was completed with a rinse/etch multi bottle bonding system and a single shade A3.5 of nanohybrid composite. The final picture in Figure 9 shows restorations that blend seamlessly with the teeth and are natural in appearance.

With this treatment, the patient was offered a final chance to save her teeth. We discussed at length the dietary changes and maintenance requirements that would offer the best long-term clinical outcome.

Conclusion
Direct bonding with nanohybrid composites create exciting opportunities in our practices to offer multiple treatment options that are extremely predictable when done with products and techniques that maximize adhesion and prevent microleakage.

Patients appreciate the cost savings, conservation of tooth structure and immediate esthetic improvements.

Helping patients through challenging financial times with multiple treatment options that match their financial condition can create the kind of trust that creates patients for life. For me, this adds to the enjoyment of practicing dentistry. Happy bonding!

About the author
Dr. Bruce J. LeBlanc provides seminars nationally on adhesive dental techniques. His practice offers adhesive and cosmetic solutions that minimize tooth removal. He is a product consultant to dental manufacturers and has published internationally on his adhesive technique.

LeBlanc is course director and presenter for “Mastering Posterior Esthetics” at LSU School of Dentistry as well as presenter for the LSU Cosmetic Continuum.

He is also the president of the F. Harold Wirth Foundation established at LSU School of Dentistry to enhance the dentist patient relationship and the enjoyment of practicing dentistry.

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About the AACD
The AACD is the world’s largest non-profit member organization dedicated to advancing excellence in comprehensive oral care that combines art and science to optimally improve dental health, esthetics and function. Composed of more than 6,500 cosmetic dental professionals in 70 countries worldwide, the AACD fulfills its mission by offering superior educational opportunities, promoting and supporting a respected accreditation credential, serving as a user-friendly and inviting forum for the creative exchange of knowledge and ideas, and providing accurate and useful information to the public and the profession.