Cosmetic Tribune

The World's Cosmetic Dentistry Newspaper · U.S. Edition

September 2008 www.dental-tribune.com Vol. 1, No. 2

Tooth augmentation

By Sarah Kong and Lorin Berland

This attractive and fashionable woman came to us seeking our assistance to improve the appearance of her smile (Fig. 1). She said, "It's just not me!" Teeth #5 and #6 were part of a double abutment cantilever bridge for the pontic on tooth #7. Teeth #8 and #10 were implant crowns, and #9 was a porcelain crown (Fig. 2). All the restorative work was done less than two years ago in China. Although it was functional and healthy, the patient felt like her teeth looked old and unhealthy, as they were short, dark, uneven and intruded.

The patient had seen other "cosmetic" dentists who wanted to re-do all her restorations, but she remembered the experience, although necessary, was not pleasant, and more important, she did not want to jeopardize these teeth, crowns and implants. At her initial consultation appointment, we did a mock-up of teeth #8 and #9 to see what her smile could look like if she decided to improve their look by building them out facially and increasing their length.

Then we showed her what her smile might look like with a mock-up to include her lateral incisors as well (Fig. 3). We knew that her low lip line was on our side, as even her fullest smile did not show her gum line. This was an ideal case for a tooth augmentation procedure. She loved the way her teeth looked in the mock-up, but she loved even more the fact that we offered a way for her to preview her options! We also discussed the wear on her lower teeth and recommended veneers or composite, but she wanted to focus on her upper front teeth at this time.

Fig. 1: Before full face

After

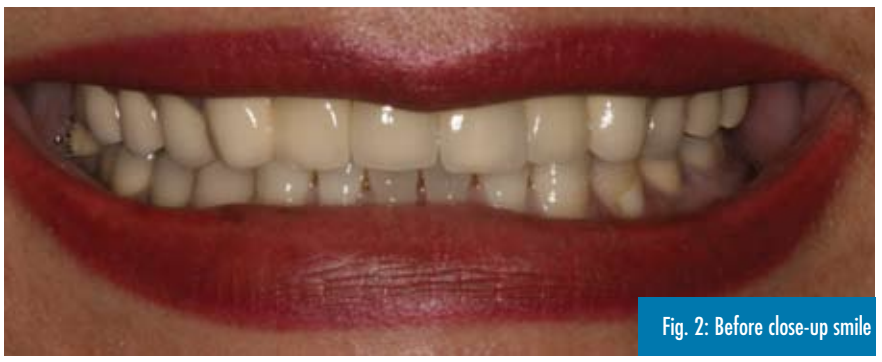

Fig. 2: Before close-up smile

We presented our patient with her treatment options, and because neither of us was looking forward to re-doing these restorations, I suggested laboratory-fabricated, no-prep resin veneers. The resin was chosen over porcelain due to its more flexible

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Is he a dentist? Is he the mayor? He is both!

An interview with the mayor of Ormond Beach, Dr. Fred Costello

By Robin Goodman
Group Editor

How long have you been a dentist and when did you become mayor of Ormond Beach?

I graduated from University of Iowa in 1974. After serving in the U.S. Air Force for three years, I moved to Ormond Beach in 1977 and entered private practice. I am blessed to have always enjoyed my chosen profession. I am 58 and still practice full time and expect to continue for another 10 years or so. After being interested in and involved in giving back to my community for many years — including serving as president of civic groups and of both the Volusia County Dental Association and Florida Academy of Cosmetic Dentistry and serving on and being chairman of both the Ormond Beach Planning Board and Development Review Board — I first ran for Ormond Beach city commissioner in 1999 because the candidate I supported had health issues and was unable to serve. I did not support the vision of the other candidates. I had absolutely no intention to run

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properties. The brittle nature of porcelain would have been more likely to cause fractures due to the undercuts in the old crowns and cantilever bridge. Also, we had more flexibility finishing the facial contours with resin as opposed to porcelain, especially since we had to over-contour in certain areas to account for blocked out undercuts. In this particular situation, these areas could be adjusted and polished in the mouth far better than porcelain.

Invaluable to the case was the Smile Style Guide, a comprehensive library for smile design (Fig. 4). She has round canines, and since we did not want to change her canines, we looked at the possibilities with round cuspids. She instinctively chose R-2, square centrals, square-round laterals, and round canines. For the length she selected L-3, the laterals significantly shorter than the centrals and cuspids (Fig. 5).

As with most cases, we were able to show our patient side-by-side images of her smile before and with a mock-up using Dexis software. With this technology, the capability to e-mail radiographs and photographs

Fig. 3: After mock-up, four front teeth.

Fig. 3: Before mock-up, two front teeth.

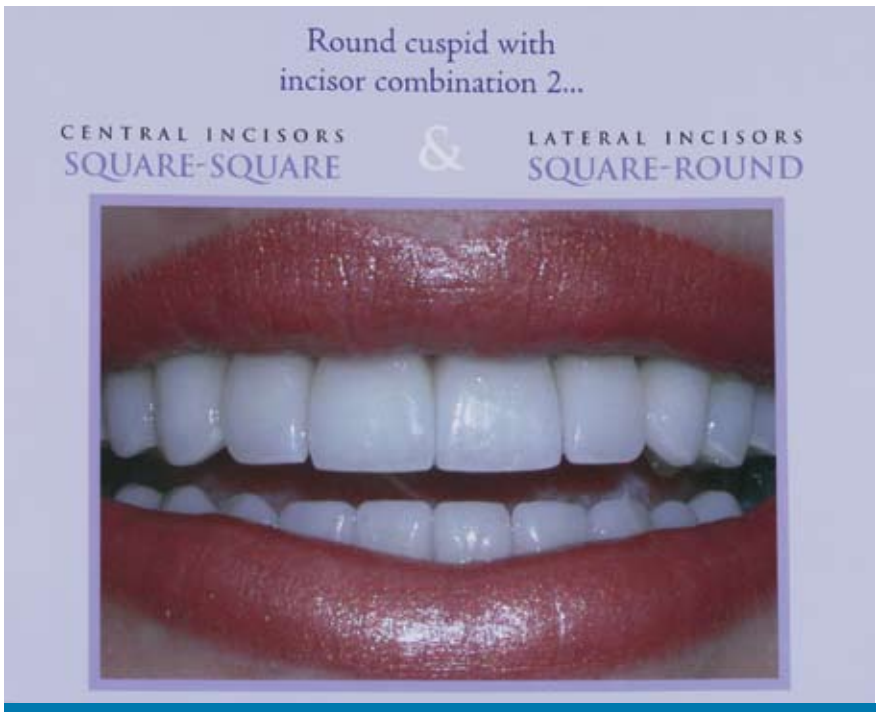

Fig. 5: R-2, round canines, square centrals, square-round laterals.

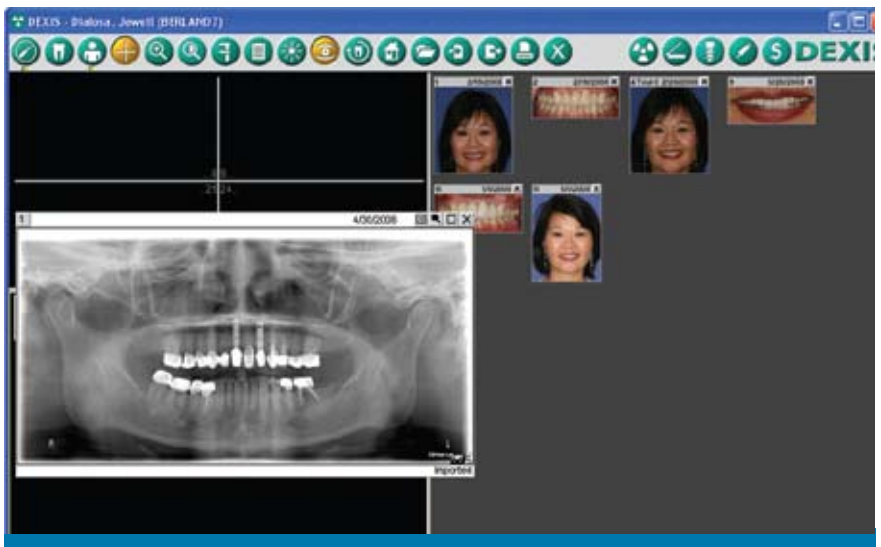

Fig. 6: E-mail message with Gendex digital PANO and photographs.

Fig. 4: Smile Style Guide.

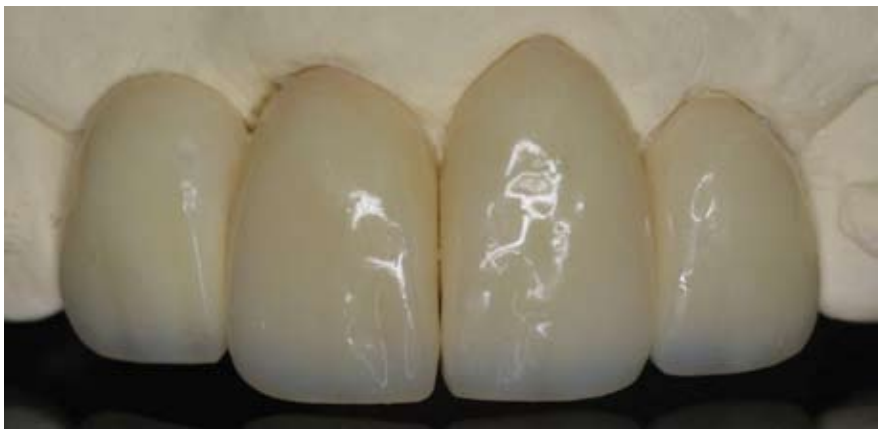

Fig. 7: Premise indirect veneers on model.

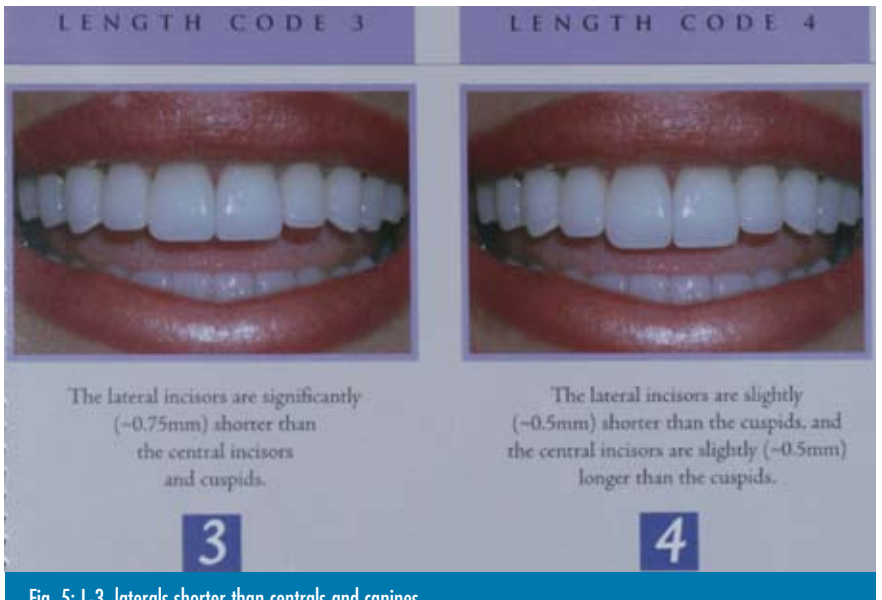

Fig. 5: L-3, laterals shorter than centrals and canines.

Fig. 8: Isolation with liquid dam and dead metal foil.

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with a few clicks gave us an almost instant response from our periodontist regarding our implant concerns before starting her case (Fig. 6).

To begin, we placed Expasyl (Kerr) on the facial gingiva to retract her tissues and liquid dam on the lingual interproximals, especially at the gum line to protect her existing restorations from loosening or coming off with the impressions. Full arch upper and lower PVS impressions such as Take 1 Advanced (Kerr) or Virtual (Ivoclar Vivadent) were taken along with SuperDent Bite Registration. The impressions were then sent to Dental Arts Laboratory in Peoria (*www.dentalartslab.com*) along with specific instructions to accompany the digital images and selected smile design. Within two weeks, the no-prep resin veneers were ready to be seated (Fig. 7).

For the seat appointment, dead foil matrix (DenMat) was used to isolate tooth #10 from #11, but no divider could be placed between teeth #6 and #7 since they were connected. Instead, liquid dam was applied and cured (Fig. 8). Next, the porcelain surfaces were prepared for bonding with the Groman Etch Master air abrasion unit to increase surface area and mechanical retention (Fig. 9). Because the margins of her porcelain restorations were below the gumline, hydrofluoric acid use was avoided to protect her gingiva. In this case, Interface (Apex) was used as an etchant and porcelain primer (Fig. 10). This was followed with Optibond Solo Plus air thinned on the porcelain (Fig. 11).

The four Premise indirect veneers were tried on with A-1 and B-1. Ultimately, B-1 Premise flowable composite (Kerr) was used for the centrals and A-1 for the laterals to cement the restorations. I chose flowable composite rather than veneer cement to fill in any undercuts due to the no prep nature of this case. The veneers were cured with the Kerr Demi Light at all angles. Because it is an LED, there is no heat generated that could result in sensitivity from over curing. The excess composite was removed with an American Eagle Gethro periodontal knife along the gingival margins (Fig. 12) and Axis Qwik Strip interproximally (Fig. 13).

The patient's previous restorations were taken to her high gum line, which was a bit uneven. Now her gum line appeared more symmetrical after having the resin veneers placed. Though she chose to wait to do her lower teeth, experience shows that she will do them in the future, especially after seeing how beautiful her upper teeth turned out. The patient loved her new smile!

When the case was finished, we took digital after images of the patient's new smile, both full face and close-up. This is a very important step, as patients tend to forget what their teeth looked like prior to the dental work. Being able to see their before and after images side by side helps them to appreciate the work that was involved in improving their smile.

Not only was an esthetic result achieved, the patient was able to keep her original restorations without damaging them. People forget what you say and people forget what you do, but they never forget how you made them feel. Digital communication in this manner serves as a constant reminder. And with a click of a button, they can share the experience with their family and friends (Fig. 14).

Fig. 9: Air abrasion.

Fig. 10: Interface application.

Fig. 11: Surpass application.

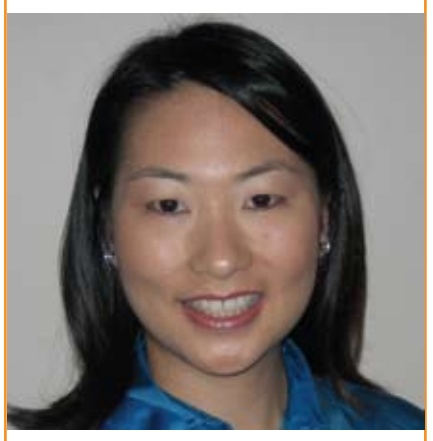
Fig. 12: Cement removal.

Fig. 13: Quik strip for cement removal interproximally.

Fig. 14: DEXIS hub with patient's before and after images.

Author info

Dr. Lorin Berland is an internationally acclaimed cosmetic dentist and one of the most published authorities in the professional dental and general media. He is a Fellow of the American Academy of Cosmetic Dentistry, the co-creator of the Lorin Library Smile Style Guide; *www.denturewearers.com;* and the founder of Arts District Dentistry, a multi-doctor specialty practice in Dallas that pioneered the concept of spa dentistry. The American Academy of Cosmetic Dentistry honored Dr. Berland with the 2008 Outstanding Contribution to the Art and Science of Cosmetic Dentistry Award.



Dr. Sarah Kong graduated from Baylor College of Dentistry, where she served as a professor in restorative dentistry. She focuses on preventive and restorative dentistry, transitionals, anesthesia and periodontal care. She is an active member in numerous professional organizations such as the American Dental Association, the Academy of General Dentistry, the American Academy of Cosmetic Dentistry, the Texas Dental Association and the Dallas County Dental Society.