Treating the Dreaded Black Triangle

and other dental therapeutic uses of Botox and dermal fillers

by Louis Malcmacher, DDS, MAGD

The use of botulinum toxin and dermal fillers is one of the fastest growing areas of dentistry. While a few years ago, their use in dentistry was limited, at this point more 35 states allow the use of these materials for both aesthetic and therapeutic uses. At the American Academy of Facial Esthetics, in the last couple of years we have trained more than 5,000 dental professionals from 46 states, all the Canadian provinces and from 28 countries around the world in these procedures through lectures and hands-on courses.

There is no question that Botox and dermal fillers are well-known for the aesthetic results they deliver in terms of smoothing wrinkles and replacing lost volume in the face, especially the oral and peri-oral areas. Botox and Dysport are essentially muscle relaxers and dermal fillers, such as Juvederm and Restylane, are volumizers or plumpers. Once you have been trained on these procedures and thoroughly understand the anatomy, physiology, pharmacology, adverse reactions, etc., then you will find many therapeutic uses in dentistry for both functional and dental aesthetic purposes.

Now that dentists have been integrating these procedures into their offices, we continually find many exciting therapeutic uses to clinical dental situations that have frustrated us in the past and we had no decent way to address some of these clinical problems.

Here are a few examples of therapeutic uses for Botox and dermal fillers:

Botox dental therapeutic uses include:

- TMD cases
- Bruxism and clenching cases
- Facial pain cases including treating trigger points
- Treatment of angular chelitis
- Gummy smile cases
- Orthodontic relapse and depressed orthodontic appearance
- Reducing muscle hyperactivity for retention of removable prosthodontics

Dermal filler dental therapeutic uses in the nasolabial folds, lips, mentalis fold and labialmental folds is used in the following:

- Gummy smile cases
- Establishing aesthetic dental lip lines and smile lines in aesthetic dentistry cases as an alternative to gingivectomy, crown lengthening and veneers
- Treatment of angular chelitis
- Eliminating "black triangles" between teeth after periodontal and implant treatment that did not preserve the papilla
- Re-establishing lip volume for proper phonetics (in addition or as opposed to teeth lengthening with fixed or removable prosthodontics)
- Adding lip and peri-oral volume around the mouth for retention of removable prosthodontics

In terms of these therapeutic uses stated, nearly every state in the United States and Canadian provinces allow the uses of Botox and dermal fillers because they are used for the practice of dentistry as defined by the dental practice act. Many of these therapeutic uses of Botox and dermal fillers are exciting for dental practitioners because they will help tackle some of the most difficult clinical situations that we often are confronted with.

As an example, TMJ and facial pain have haunted dental practitioners for years and are among the most frustrating cases we deal with. We, as dentists, have concentrated our treatment on the occlusion and teeth first and the muscles later. It is now time to completely rethink this treatment progression. Now, using Botox therapeutically for facial pain and TMD, we can eliminate the pain coming from the muscle pathology first, and then we may go ahead and treat the occlusion or the actual joint much more easily and accurately than before.

The dreaded "black triangle" usually tops the list of dentists' frustration after the placement of crowns, bridges and especially implants or after periodontal surgery. After treatment, the patient finally has a healthy periodontium or a nice new tooth surrounded by two big black holes on either side of it, which the patient whistles, spits through or catches food in. While the patient should be thrilled that he doesn't have to wear a flipper any more, he is disappointed at the aesthetic results because of the lost tissue. What are our options? We can bond to adjacent teeth. We can redo the crown, remove the implant and try again with a new implant or other frustrating treatment options that are very aggressive which might or might not work. The placement of dermal fillers in these

areas to literally plumb up papilla is a minimally invasive way to create proper gingival contours.

Let's take a look at this case. Figure 1 shows the pre-op photo of a patient who has two all-ceramic crowns (e.max, Ivoclar and done by Aurum Ceramics Laboratory) on teeth #8 and 9 and some beautiful no/minimal prep Cristal veneers (Aurum Ceramics Laboratory). The crown on tooth #9 is loose and the radiograph in figure 2 shows the tooth has fractured at the gumline. Figure 3 shows the successful integration of a Nobel bone level implant and the new implant restoration in place. The dreaded "black triangles" in figure 4 (next page) is one of the most challenging aesthetic problems we deal with. We have a beautiful new crown but as you know, the full aesthetics depends on both the tooth and the soft-tissue integration, which is lacking here. Compare that to her original pre-op picture again in figure 1 and you can see why it bothers her. In addition, food collects in these areas and when she speaks, she finds herself spitting. She loves and hates her new implant crown, all at the same time.

In figure 5 (next page), we treated her with a diode laser (Picasso Lite, AMD Lasers) to loosen the gingival attachment. We used 1.8 watts of power and placed the fiber tip into the sulcus. We initiated power and angled the tip into the thickest part of the interproximal tissue for a half second. We angled the tip in the fan-

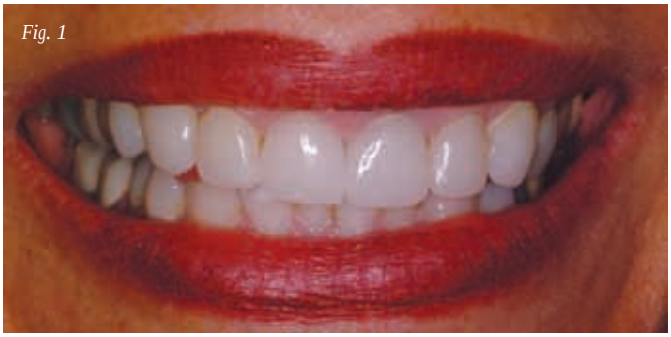
Fig. 1

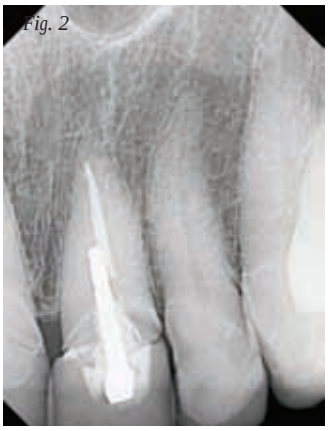
Fig. 2

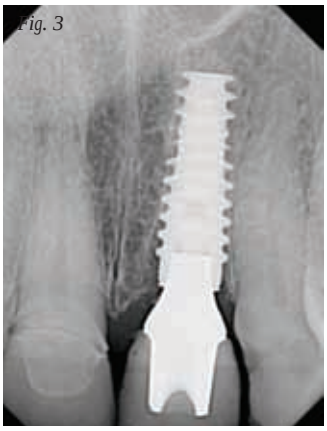
Fig. 3

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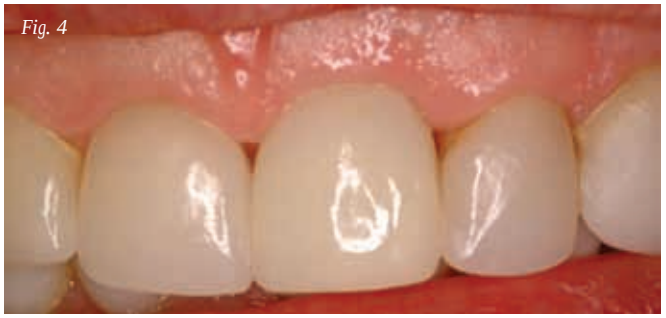
Fig. 4

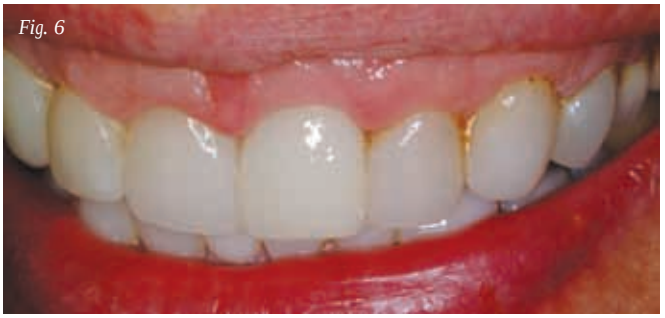
Fig. 6

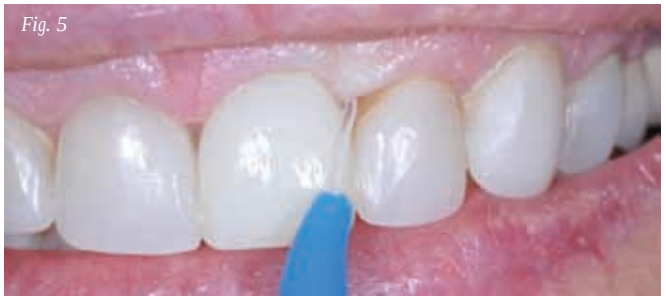
Fig. 5

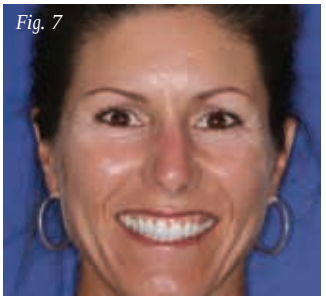
Fig. 7


Fig. 8

ning motion three more times and intiated the tip as before. This creates some space with the interproximal tissue. We then placed some dermal filler (Juvederm Ultra Plus XC, Allergan Corporation) into the papilla to rebuild it. Figure 6 shows the rebuilt gingival papilla which fills up the black triangles and takes care of her aesthetic and functional concerns. The treatment appointment was quick and she can expect this outcome to last for eight months or longer, at which point it will need to be repeated. This is a very minimally invasive approach to a very difficult situation. It was accomplished in a six-minute appointment.

This author along with others have also successfully used Botox and dermal fillers intra-orally to correct other soft-tissue and muscle-caused deficiencies.

One more example is the patient with a gummy smile (Fig. 7). If you look carefully you will see that this patient has an asymmetrical gummy smile. What are our choices here? Orthodontics is a choice, but that is an orthodontic case that most orthodontists don't even want to tackle. We could send this patient to an oral surgeon to accomplish a maxillary Lefort I fracture and physically move the mandible up and then hope the mandible occludes into it. Certainly, the way most dentists would treat this is with surgical osseous crown lengthening, followed by crowns or veneers.

Now we have a proven and safe minimally invasive option with an appointment that takes 15 minutes and the use of Botox and dermal fillers. Figure 8 shows the patient post-operatively having full lip competency, proper lip and smile lines and an aesthetic result that will rival any of the other dental options without picking up a drill or scalpel. While this treatment will need to be repeated over time, the use of Botox and dermal fillers for the use of soft- and hard-tissue dental therapeutic aesthetic cases is as much dental treatment as any of the other options previously mentioned.

It is our legal and ethical duty to give patients all of the options available for their dental treatment. In this day and age, to do that, we need to get trained in the use of Botox and dermal fillers, as these are well-established, viable dental treatment options. The treatments described in this article clearly fall under the definition of dentistry in nearly all of the state dental practice acts. Now that dentists understand the use of Botox and dermal fillers in dentistry for therapeutic and dental aesthetic cases and have become proficient in their use through proper training, we can offer them in conjunction with or in addition to our current treatment options.

Botox and dermal fillers are here to stay and with more and more intra-oral uses of these materials, they are fast becoming a integral part of every dental practice with ramifications in restorative, aesthetic, periodontal, orthodontic and prosthodontics implications. These procedures are the fastest growing area of dentistry with the most significant, minimally invasive, therapeutic and aesthetic outcomes available for many everyday clinical situations. Get trained today! ■

Author's Bio

Louis Malcmacher, DDS, MAGD, is a practicing general dentist and an internationally known lecturer, author and dental consultant. An evaluator emeritus for Clinicians Reports, Dr. Malcmacher is president of the American Academy of Facial Esthetics (www.facialesthetics.org). You can contact him at 440-892-1810 or e-mail drlouis@facialesthetics.org. His Web site is www.commonsensedentistry.com, where you can find information about his lecture schedule and Botox and dermal fillers training, download his resource list and sign up for a free monthly e-newsletter.