Radiance: Short-term Experience

Over a 9-month period, the author has injected Radiance (BioForm, Inc., Franksville, WI), a soft tissue filler, into lips, nasolabial folds, glabellar creases, labiomental folds, tear troughs, and lateral jawlines in 130 patients. Here he presents his clinical findings. (Aesthetic Surg J 2003;23:495-499)

Plastic surgeons need an injectable soft tissue filler that is reliable, nonallergenic, and long-lasting. In January 2003 I began injecting patients with Radiance (BioForm, Inc., Franksville, WI), a mixture of calcium hydroxyapatite (30%) and polysaccharide gel (70%). The polysaccharide gel is very white, which makes Radiance inappropriate for the dermis. Radiance has a long shelf life (no refrigeration required), and it is reputed to last 2 to 7 years once injected, though the longest clinical follow-up to date is 2.5 years.

Between January and October 2003, I injected 130 patients with a total of at least 190 1-mL syringes of Radiance. Here I present my short-term experience, including (1) methods for injection and placement, (2) problems with some specific areas (lips), (3) areas where it works reasonably well, and (4) how to overcome certain limitations of the material.

Lips

I injected Radiance into the lips (mostly the upper lips) of 28 patients using bilateral infraorbital blocks and mental blocks, if needed, for the lower. I placed the injectable in the center of the orbicularis muscle using 2 lateral injections with a 27- or 25-gauge 1.5-inch needle across the midline, injecting on withdrawal (Figure 1). Ecchymosis developed in several patients as a result of the needle’s piercing the labial artery. When the injections were too posterior, the lips protruded too much. If the injection was too close to the mucosa inferiorly, the lip had a bump when the patient smiled. This bumpiness and aberrant placement occurred in about 40% of patients whose lips were injected with Radiance (Figure 2). In a few, the bumps disappeared or improved after 8 weeks. In at least 11, I had to make a vertical slit with an 18-gauge needle, then use the needle to carve out some of the material, which was firmly attached to the muscle. In short, an extremely high percentage of patients undergoing lip augmentation required secondary work, and in others, the palpability of the implant by the tongue was problematic. The lower lip, which required only 1 needle stick for the central two-thirds, had fewer problems. All of the problems resolved with time or removal, which required only a small nick.

In some reconstructive cases, Radiance is excellent (Figure 3), and for certain problems, such as cleft whistle deformities, it is a very good short-term answer. For the patient seeking cosmetic lip improvement, the material works only fairly well, presenting problems in my experience that were frequently troublesome and counterproductive, although treatable. I have yet to inject the white roll to provide a “little ridge,” as a few have suggested, because I would like to avoid more lip problems. From a technical standpoint, there is a certain learning curve. When I injected too deeply, the correction was minimal. For those lips that got a fair to good augmentative correction, the material was definitely palpable 3 to 4 months or longer after augmentation, and some of the result was lost. I am going to try a few variations in my technique in an attempt to reduce the nuisance problems, but in my view, Radiance is not the lip “answer.”

Nasolabial Folds

I performed injections of the nasolabial folds in 70 patients after administering an infraorbital block that anesthetizes the folds at least to the commissures. If the depressions exceeded the commissure, I passed the needle, always subdermally, from the lowest point of fill and accordionated the tissue on the needle to the upper fold. Sometimes I injected the folds below the commissure level in isolation, explaining to the patient that it would hurt a
The pain was never so bad that any patient told me to stop. Then I placed a finger cot on each of my index fingers for the intraoral side, flattening the material or massaging it enough to flatten any bumpiness. The average nasolabial folds required about 1 mL. Some deeper folds required more, especially in men, for whom the process was more expensive. Most patients were happy with the result, although several reported that they noted no real difference after 8 weeks. I probably injected too deeply, which minimized the result.

Figure 4 depicts a typical patient. Massage helps flatten the material and it must be done postinjection (Figure 5). The product works relatively well when injected exactly subdermally. When the folds are deep, more product may be required. The best results in this area, bar none, were in 2 patients with facial paralysis who had deep folds on the paralyzed side. In these patients, the equilibrium achieved when I injected the entire milliliter or more into 1 fold was dramatic.

Glabellar Creases

The glabellar creases of some of the 14 patients I treat...

Figure 1. The material is injected into the center of the orbicularis lip muscle. Multiple injections with a short needle tended to be less effective than single long strips laid down with a longer (1.5-inch) 25- or 27-gauge needle. The lower lip usually required 1 injection for the middle two-thirds and had fewer problems. The upper lips required 1 or 2 strips and light massage. I am not sure whether the massage actually caused some of the bumps. It is helpful to watch the syringe gauge as you pull out; you must stop short of the exit, or you get a little bump. Blocks are always used, followed by cool compresses.

Figure 2. The bumps that commonly occur in the lips either decrease in the 8 weeks following the procedure or require removal with a vertical nick and partial excision, which works well.

Figure 3. Radiance may be ideal for reconstructive uses. Patients with deep folds on one side (e.g., patients with paralysis) exhibit good results, as do patients who require work on one side. A, This 39-year-old woman has right-sided port wine macrocheilia. B, Posttreatment view after she was reduced to normal width on the right side. The left side, which was unaffected, was injected so that the patient’s gums would be better covered.
ed were markedly deeper than those of others. For all these patients, the subdermal injection with light finger flattening really helped. Sometimes additional injections were required. The results were uniformly good, just as they are with some other substances.

**Optimal Results From Radiance**

There are 3 areas in which no other injectable has been as effective as Radiance: (1) very deep labiomental folds; (2) tear trough deficiencies and lid hollows that are apparent after blepharoplasty, and (3) the lateral jawline (prejowl region).

**Labiomental folds**

I treated the labiomental folds of 6 patients. Some people have very deep folds with an obvious unsightly crease. Previously nothing has worked well for this problem. However, Radiance, about 1 to 1.5 mL, seems to soften the area. Figure 6 shows a woman with a very deep fold; the combination of chin reduction and fold injection helped her considerably.

**Tear troughs**

When injected submuscularly and flattened out, Radiance can help improve postblepharoplasty hollowing, the depression just inferior to the medial inferior orbital rim, and the lateral depression that we sometimes try correcting with a midface malar pad lift. However, I am not sure how long the correction will persist.

The key is to inject below the orbicularis muscle but not under the peristreum, then compress the material lightly with your finger. This correction may smooth the area below a projecting medial eyelid fat pad or a deficiency just above the rim (Figure 7). Of the 15 patients I injected with Radiance, 2 noted that the material did not persist long enough and required more. This may have been a result of my caution. In 4 other patients the skin and muscle were so thin that the whiteness of the material seemed to color the skin a bit. Makeup helped alleviate this phenomenon, but it was a nuisance. In 2 patients I had to remove some material.

**Lateral jawline**

Some people have a depression either behind the chin prominence or in front of a forming jowl. The Mittelman chin implant, with lateral fullness, has been used specifi-
cally for that problem, but Radiance also worked very well. After marking the prejowl area, inject 1 to 2 lines of material from the front and flatten it out with light pressure. In the 15 patients I treated, results were often dramatic and long-lasting (6 months). The key was not to overcorrect at all; otherwise the patient may manifest a slight bump when smiling.

Conclusions

So far, my findings with regard to Radiance are as follows:

- The material is quite expensive, but it is nonallergenic and has a good shelf life. I saved for later use what I did not use in each case, marking the partially used syringes with the patient’s name.

- The nasolabial folds and the inferior extensions can be augmented. Blocks are helpful, but some patients, especially men, require much more than 1 mL. Some patients may get less benefit than they expect. In patients with 1-sided facial paralysis, this material was very helpful.

- Radiance injections into the lips result in a number of problems, all solvable. The lower lip has fewer problems; in more than one-third of patients, some material may have to be removed from the upper lip. If you wait 8 weeks, you may avoid some secondary work; there is obviously some resorption over those first months. Some patients who have undergone reconstructive surgery really benefit from use of the material.

Figure 6. The labiomental fold can be somewhat effaced with 1.0 or 1.5 mL of Radiance. A, Preoperative view of a 33-year-old woman with a deep labiomental fold. B, Postoperative view 7 weeks after submental approach chin burring with tissue excision and placement of about 1.5 mL of Radiance in the fold. The initial result is good, but long-term follow-up is necessary.

Figure 7. A, Preoperative view of a 42-year-old man who had undergone many prior procedures elsewhere, after sustaining a zygomatic fracture with the goal of making the right lower lid/crerek area look better. B, Postoperative view after injection of more than 3 mL of Radiance on the unaffected side (left) and about the same on the right, with flattening, to help fill in the hollowness. The tear trough area was improved. This also works for the patient with hollowness and a depressed trough after blepharoplasty. The material must be injected submuscularly and supraperiosteally, or it may show afterward. Very thin-skinned patients should be cautioned that the material may lighten the area even if it is injected into the suborbicularis plane.
• No granulomas or infections occurred. No allergic reactions occurred.
• Deep glabellar folds may be reduced without difficulty in some cases.

In deep labiomental folds, the tear trough area, and the prejowl region, despite some minor annoyances, no other injectable, in my experience, has proved as effective.