The aging forehead

To the editor:

I would like to congratulate Drs. Connor, Karlis, and Ghali for their timely article "Management of the Aging Forehead: A review" (2003;96:642-8). Contemporary OMFS includes cosmetic surgery, and we need more high quality articles like this one in our everyday literature.

There are several points from this well written article that I would like to add to or clarify.

In the discussion of collagen in the glabeller area, they discuss side effects and mention "allergic reaction and inflammatory responses." There exist several other complications both simple and catastrophic that I believe warrant mention. The Zyplast package insert[1] states that "local necrosis is a rare event that has been observed following collagen implantation. Most necroses reported through post-marketing surveillance have occurred in the glabella. It is thought to result from the injury, obstruction, or compromise of blood vessels. Zyplast collagen is more often injected deeper into the dermis closer to the local vascular supply than is Zyderm collagen implant. Additionally, Zyplast collagen implant does not undergo syneresis after injection. Therefore, interruption of the local blood supply may more likely occur with Zyplast collagen implant. It is recommended that corrections in the glabellar region be performed using Zyderm collagen implant rather than Zyplast collagen implant." The insert further states "Zyplast collagen implant must not be implanted into blood vessels. Collagen can initiate platelet aggregation, and implantation of Zyplast collagen implant into dermal vessels may cause vascular occlusion, infarction, or embolic phenomena."

Although the authors did not differentiate as to which collagen to use in the glabellar area, in view of the above, Zyplast may be inappropriate in this area.

In terms of adverse reactions with collagen, the package states "forceful injection into the dermal arterial branches of the face and scalp could cause retrograde movement of the implant material into retinal arteries, resulting in vascular occlusion. Such a complication has been reported with the use of Zyderm collagen implant in one patient, and resulted in the sudden and permanent loss of vision in one eye."

Heeding these caveats, one should be conservative and not overinject or inject with great pressure in the face, especially close to the eyes. Again, this is a rare but reported complication and caution in this area is paramount of any treating doctor, novice or expert. Blindness has also occurred with fat injection in the facial or periorbital areas.[2-5]

I have also used ePTFE (Gore-Tex) in deep glabellar wrinkles with good results, especially in males with deep furrows. This would be a useful addition to the algorithm shown by the authors. In the article, laser skin resurfacing is discussed in several circumstances and I feel that this is a primary means of correcting the aging forehead. Obviously, patients may not desire such a comprehensive treatment for simple forehead wrinkles. Due to skin color and textural differences, I do not resurface the entire forehead without doing the rest of the face, but I will "spot laser" a deep glabellar wrinkle or furrow, especially in conjunction with an ePTFE implant. Botox is further added to this regimen for comprehensive treatment of this challenging area.

In discussing Botox, the authors say that the "needle is inserted to bone (subperiosteally) and withdrawn half the distance from periosteum to skin." I initially began injecting with this technique in 1997 and, after an estimated 23,000 Botox injections, have long abandoned this technique.[6-8] Although described in the earlier literature, I have found it more painful for the patient, and it also dulls the needle very quickly, making the remaining injections more painful. The 30 gauge half-inch needles are very fragile, and it is not uncommon for us to change needles every 5 or 6 injections for better pain control. Finally, my incidence of bruising was greatly reduced by staying away from the deep structures. Although the paralytic effect of Botox will generally spread from a subcutaneous injection (as described by the authors), I favor an intramuscular deposition.

Although some authors claim brow elevation from Botox injection, I have found this unpredictable, especially when the frontalis and glabella are treated concomitantly. Carruthers, who has closely examined brow elevation, has recently reported this lift statistically insignificant by controlled pre- and postinjection measurements.[9] I have heard nonsurgeons claim that they can equal the surgical result of a brow lift by Botox alone, and I personally think this is erroneous.

Again, I congratulate the authors on this timely and relevant article. I would personally add skin resurfacing and alloplastic implants (ePTFE) to their algorithm on glabellar furrows. I would also mention the rare but potentially catastrophic complication of blindness when injecting collagen (or other substances) in the periorbital areas, which could include the glabella. I would stress avoiding Zyplast and using Zyderm in the glabella.

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