Discussion: Malar Augmentation Assessed by Magnetic Resonance Imaging in Patients after Face Lift and Fat Injection

David Hidalgo, M.D.
New York, N.Y.

Fat grafting is becoming more prevalent as an adjunct in facial aesthetic surgery despite ongoing controversy. There is still no consensus regarding as basic an issue as optimal harvesting and preparation methods, nor are there consistent data on fat graft survival rates. The latest conjecture is that stem cells will play an important role in improved results even though details regarding methodology for clinical application are sketchy. Despite its allure, stem cell research in fat grafting seems to be very much in its infancy.

There is already proof, although anecdotal, that fat grafts do survive in the face. Many of us have seen exasperated patients years after treatment with what can be best described as monster facies resulting from enthusiastic injection of large volumes of fat diffusely into the face. Another example is that of patients with lower eyelid lumps from fat grafts injected in an attempt to blend the lid-cheek junction. There is even evidence that surviving fat grafts can hypertrophy with weight gain, further exacerbating these iatrogenic problems. Therefore, the basic question of fat graft survival in the face is already answered, although much more precise information on the matter would be welcome.

This study seeks to document fat graft survival quantitatively. The author acknowledges several problems related to study design that together call into question the validity of its conclusions. First, the study population is quite small ($n = 5$). Second, the length of follow-up is probably not adequate to establish long-term fat graft survival. Although one patient was followed with magnetic resonance imaging scans for 1 year, the others were followed for only 6 months. It is not precisely known how long it takes until results from fat grafting can be considered permanent. It is probably safe to say that at least 1 year is required to evaluate the outcome conclusively. For example, it is not unusual to see a fabulous result soften first as edema resolves, and then regress further over time as fat grafts melt away. To be sure, the results of this study are positive and encouraging but would be much more convincing if the study group was larger and all patients had magnetic resonance imaging scans at 1 year.

In addition, it is argued that superficial musculoaponeurotic system (SMAS) techniques do not contribute to an increase in malar volume. Although a SMASectomy is less likely to do so, extended SMAS dissections can increase malar volume, at least in the short term. The author's own technique involves a considerable amount of dissection in the malar area. This provides further argument for including a control group to properly establish what effect deep soft-tissue manipulation has on malar volume.

There are some aesthetic issues raised by this study apart from its primary focus on fat survival. For example, the author injects 8 to 9 cc into each malar area on average. That seems like a lot. The author points out that it is not placed laterally, to avoid increasing facial width, but instead is injected anteriorly to optimize the "ogee curve" silhouette. This may improve facial shape on the three-quarters view but can have detrimental effects on the frontal view, such as making the orbits appear recessed and the nasolabial folds appear more prominent. Furthermore, a larger malar mass can compress the lower eyelids unnaturally during animation. Most patients do not need anterior malar augmentation with fat to achieve a pleasing ogee curve. Instead, this can be effectively accomplished by repositioning the SMAS by a variety of methods.

Subtracting the 17.6 cc of fat injected into the malar areas from the total of 45.2 cc injected into

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each patient in this study yields a mean volume of 27.6 cc injected elsewhere into the face during these procedures. Again, this seems like a lot. The author did not study fat survival in these other areas, citing the lack of a stable reference point such as the maxilla used to evaluate survival in the malar area. These other areas, such as the prejowl sulcus anterior to the marionette lines, the nasolabial folds, and the lips, to name the most common, are areas in the face that arguably need additional fat volume the most. It is becoming conventional wisdom, though based largely on anecdotal evidence, that the more mobile the area, the less permanent the results from fat grafting. Studies that focus not only on absolute but also on differential fat survival in the face would be a most welcome addition to our knowledge base.

In summary, this report provides evidence that fat grafts do survive in the malar area. The proof is not conclusive because of study design limitations. Additional studies are needed to corroborate fat graft survival in the face, correlate survival volumes with injection volumes, and study comparative fat graft survival rates in different regions of the face.

David Hidalgo, M.D.
655 Park Avenue
New York, N.Y. 10065
dh@drdavidhidalgo.com