

Fat Repositioning in Lower Blepharoplasty: Does the Plane of Fat Transposition Affect the Outcome?

Donald B. Yoo and Guy G. Massry

Native eyelid fat transposition is now a common adjunct to lower eyelid blepharoplasty surgery. The procedure was first described in 1981 (Loeb 1981) and since that time has been further elucidated in numerous reports (Hamra 1995; Goldberg 2000; Mohadjer and Holds 2006). Eyelid fat can be accessed through an open transcutaneous (Perkins and Holden 2011) or closed transconjunctival incision (Goldberg 2000; Mohadjer and Holds 2006), and fat can be placed into either the sub- (Goldberg 2000) or suprapariosteal planes (Mohadjer and Holds 2006). It is well documented in the literature that the transconjunctival approach to surgery, while more detailed and complex, leads to less postoperative complications, primarily lower eyelid malposition (Massry 2010). As such, there has been a shift towards transconjunctival surgery since the late 1980s. Conversely, which plane to transpose eyelid fat has not been formally studied and suggestions as to the “better” procedure “sub- vs.

suprapariosteal fat translocation” has been a subject of debate with only anecdotal experiences to guide surgeons.

In 2012, a two-author comparative study suggested that there were no aesthetic differences (degree of effacement of the nasojugal groove (NJG) or tear trough) between sub- and suprapariosteal surgery (Massry and Hartstein 2012). This study was confounded in that two different surgeons transposed the fat to the two distinct planes and that in all cases an orbicularis suspension was added to surgery. It is possible that lifting the orbicularis added to softening of the NJG. One of the authors in this report historically transposed fat to only the subperiosteal plane. To better elucidate differences in outcome between the two planes of fat translocation, this author proceeded to perform 20 consecutive procedures with fat repositioned suprapariosteally. Those 20 patients were then compared in a retrospective fashion to the previous 20 cases performed subperiosteally (Yoo et al. 2013). All cases were assessed for aesthetic result by a blinded observer so that statistical analysis could be attained

What the authors found was that there was no statistically significant difference in cosmetic results (filling of NJG) between the two groups. As this is a one-surgeon study without the addition of other procedures which could grossly impact tear trough effacement, this is a better indicator of postoperative results than the previous report. While no differences in aesthetic outcome were identified, differences in technique

D.B. Yoo, MD

Facial Plastic and Reconstructive Surgery,
Spalding Dr. Cosmetic Surgery and Dermatology,
Beverly Hills, CA, USA

G.G. Massry, MD (✉)

Department of Ophthalmology, Keck School
of Medicine, University of Southern California,
Los Angeles, CA, USA

Beverly Hills Ophthalmic Plastic Surgery,
Beverly Hills, CA, USA

e-mail: gmassry@drmassry.com

and recovery were noted. Supraperiosteal surgery was found to be faster, more traumatic, and bloodier and yielded a higher incidence of temporary postoperative fat pedicle induration (granulomas). Subperiosteal surgery was more detailed and anatomic and yielded a clear view of the infraorbital nerve (ION). Interestingly, while the ION is directly isolated in subperiosteal surgery, there were no differences found in postoperative sensory changes, in the distribution of this nerve, between the two techniques. In addition, while supraperiosteal surgery requires dissection below the orbicularis muscle (centrally and nasally) or the lip elevators (levator labii superioris and adjacent alaeque nasi muscles), which one would think may lead to orbicularis or lip elevator motor deficits, this was not noted.

While aesthetic results to sub- vs. supraperiosteal surgery have been shown to be similar, there may be patient subgroups that may benefit or do better with one approach vs. the other. Identifying these patients is the next natural evolution in our understanding of fat repositioning lower blepharoplasty.

References

- Goldberg RA. Transconjunctival orbital fat repositioning: transposition of orbital fat pedicles into a subperiosteal pocket. *Plast Reconstr Surg.* 2000;105(2):743–51.
- Hamra ST. Arcus marginalis release and orbital fat preservation in midface rejuvenation. *Plast Reconstr Surg.* 1995;96(2):354–62.
- Loeb R. Fat pad sliding and fat grafting for leveling lid depressions. *Clin Plast Surg.* 1981;8(4):757–76.
- Massry GG. Comprehensive lower eyelid rejuvenation. *Facial Plast Surg.* 2010;26(3):209–21.
- Massry GG, Hartstein ME. The lift and fill lower blepharoplasty. *Ophthal Plast Reconstr Surg.* 2012;28(3):213–8.
- Mohadjer Y, Holds JB. Cosmetic lower eyelid blepharoplasty with fat repositioning via intra-SOOF dissection: surgical technique and initial outcomes. *Ophthal Plast Reconstr Surg.* 2006;22(6):409–13.
- Perkins SW, Holden PK. Transcutaneous lower eyelid blepharoplasty. In: Massry GG, Murphy M, Azizzadeh B, editors. *Master techniques in blepharoplasty and periorbital rejuvenation.* New York: Springer; 2011. p. 159–72.
- Yoo DB, Peng G, Massry GG. Transconjunctival lower blepharoplasty with fat repositioning: a retrospective comparison of transposing fat to the subperiosteal versus supraperiosteal planes. *JAMA Facial Plast Surg.* 2013;15:176–81.