Upper Eyelid Approach to Lower Eyelid Blepharoplasty

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Transcutaneous lower blepharoplasty addresses excess skin, muscle, and fat through an infraciliary cutaneous incision. This approach offers excellent exposure to the fat pads; however, violation of the orbital septum may result in postoperative lower eyelid retraction, with resultant aesthetic disfigurement as well as exposure keratoconjunctivitis.[1] The transconjunctival approach to lower blepharoplasty avoids violation of the orbital septum, which may produce less postoperative eyelid retraction.[2] The latter approach, however, can lead to inadequate fat removal, especially from the often hidden lateral lower eyelid fat pocket, due to limited exposure.[3]

Herein, we describe our experience to address lower eyelid lateral fat pocket through an upper eyelid approach and discuss its advantages, which include patients with only a prominent lateral fat pocket or upper eyelid dermatochalasis, with or without lateral canthal laxity.

PATIENTS AND METHODS

The charts of all patients undergoing debulking of the lower eyelid lateral fat pocket through an upper eyelid approach at Jules Stein Eye Institute by one surgeon (R.A.G.) between 2006 and 2008 were reviewed. Concomitant eyelid/orbital surgical procedures were recorded. Patients without digital preoperative and postoperative photographs for review were excluded.

Preoperative and postoperative photographs at the longest follow-up visit were analyzed. All photographs were obtained using a standardized technique in the frontal position with the eyelids open and facial muscles relaxed. Blinded observers analyzed the photographs.

Surgical Technique

All operations were performed with the patient under monitored anesthesia care along with local injection of lidocaine 2% with epinephrine. A limited lateral (Fig. 1) or standard upper eyelid crease incision (Fig. 2) was performed. The latter was performed if the patient was undergoing concomitant upper eyelid blepharoplasty. Through the lateral extent of the incision, blunt and sharp dissection, using Stevens scissors, exposed the lateral canthal tendon and orbital rim. The inferior lateral canthal tendon fibers were released in those requiring concomitant lower eyelid tightening. The Eisler's fat pad was preserved if possible. Then, the lower eyelid lateral fat pocket was exposed using blunt and sharp dissection to release septa. Using a Senn retractor and gentle digital pressure on the globe helped in prolapsing the hidden fat pocket into view. The fat pocket was then debulked, using either Stevens scissors or monopolar cautery, as necessary.

RESULTS

A total of 15 patients (25 eyelids) underwent successful lower eyelid lateral fat pocket debulking through the upper eyelid, with quick recovery. Minimum follow-up time was 4 months (mean, 6 months; maximum, 1 year). There were 12 men and three women, with a mean age of 60 years (range, 50 to 80 years). Five patients had a prior history of lower eyelid blepharoplasty with a residual prominent lower eyelid lateral fat pocket.

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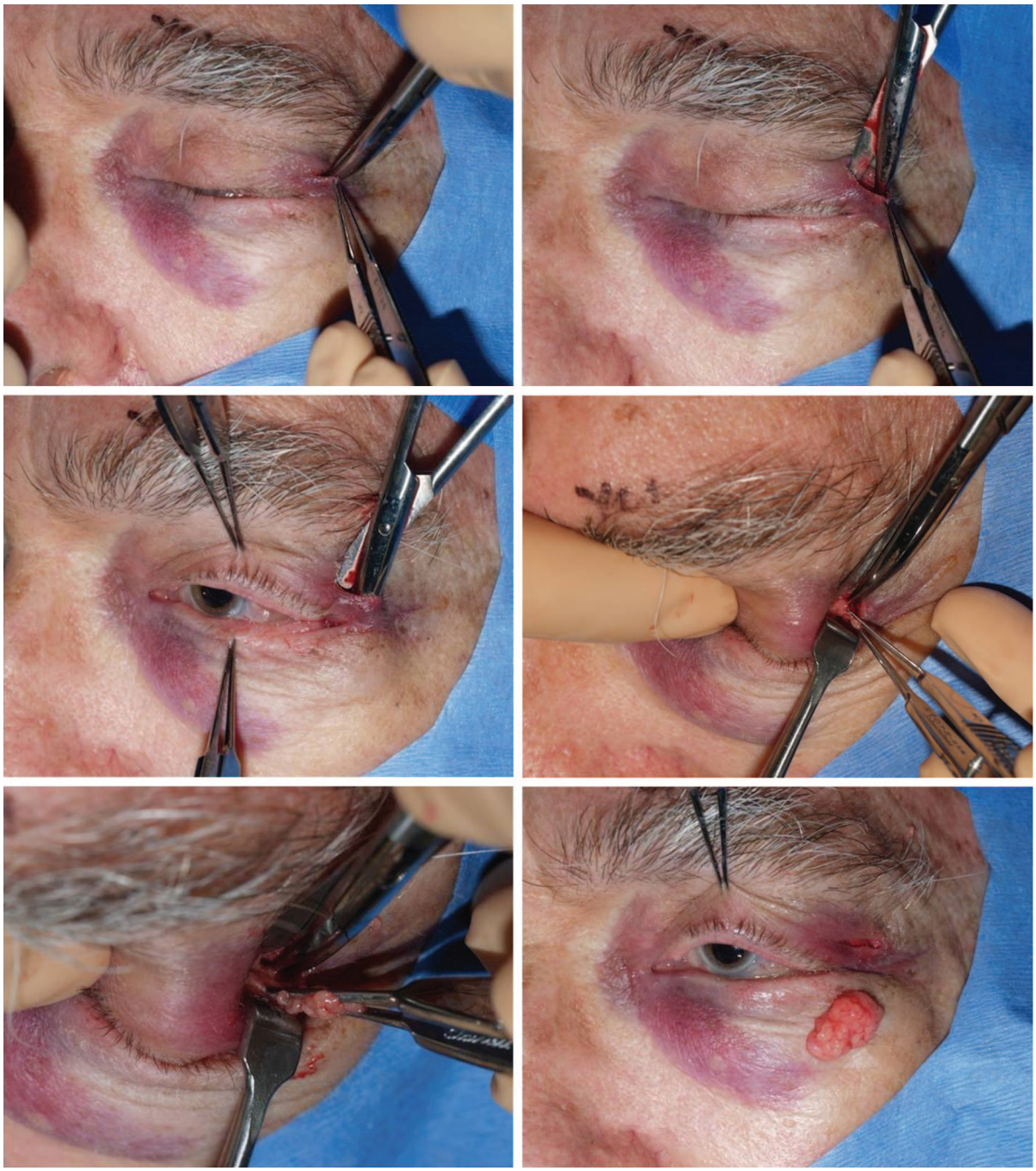

Fig. 1. Intraoperative views of the debulking of the lower eyelid lateral fat pocket through a small lateral upper eyelid incision. (*Above, left*) Small incision in upper eyelid crease; (*above, right*) sharp and blunt dissection to expose lateral canthal tendon; (*center, left*) lower fibers of lateral canthal tendon being cut by Stevens scissors; (*center, right*) Senn retractor and gentle pressure on the globe help expose the lower eyelid lateral fat pocket; (*below, left*) debulking of the fat pocket; (*below, right*) excised fat placed over its in vivo location.

Concomitant upper eyelid blepharoplasty was performed in 13 patients, while minimal incision lateral canthoplasty through the same upper eyelid incision was performed in 14 patients. A representative case is shown in Figure 3. There were no complications or reoperations.

DISCUSSION

Lower eyelid preaponeurotic fat is divided into three compartments. The medial and central fat pockets are separated by the inferior oblique muscle, while the arcuate expansion divides the central from the lateral fat pocket. This lateral fat

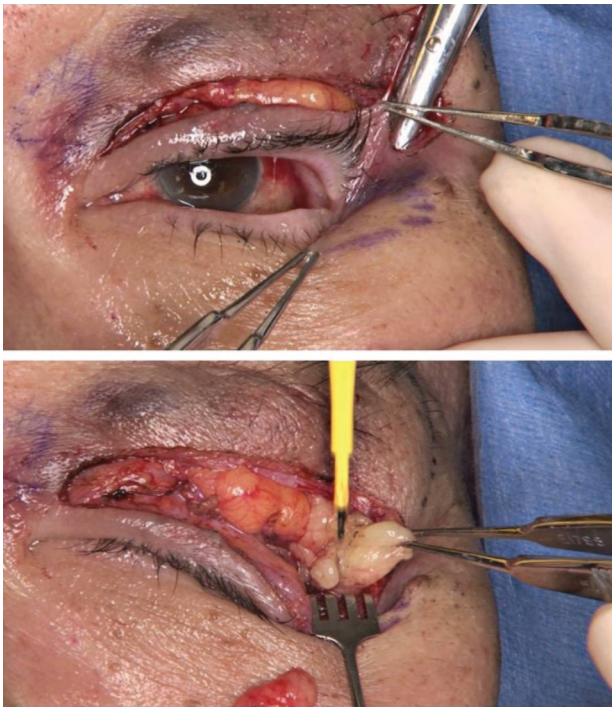

Fig. 2. Intraoperative views of upper eyelid approach to the lower eyelid lateral fat pocket, along with upper eyelid blepharoplasty. (*Above*) Stevens scissors were used to release the inferior canthal tendon fibers and incise the septa surrounding the fat pocket. Retractor and gentle digital pressure on the globe can help prolapse the fat pocket into view; (*below*) the lower eyelid lateral fat pocket was debulked using monopolar cautery.

Fig. 3. Preoperative (*above*) and 6-month postoperative (*below*) views of a 60-year-old man who underwent bilateral upper eyelid blepharoplasty, ptosis surgery, lateral canthal tightening, and debulking of prominent lower eyelid lateral fat pocket, all through the same incision. This was combined with conservative transconjunctival lower blepharoplasty.

pocket is usually smaller and deeper than the others. In addition, it contains more septa than the others, which makes it less likely to herniate anteriorly. It is the hardest pocket to expose during transconjunctival lower blepharoplasty, and it is often missed during surgery, only to protrude again after the patient is vertical and healing has occurred and swelling has subsided.[3]

Transcutaneous and transconjunctival approaches to lower blepharoplasty have their advantages and disadvantages.[1,2,4] Of note, as alluded to earlier, the often hidden lower eyelid lateral fat pocket can be missed through this approach.[3] The upper eyelid approach effectively and efficiently addressed the lower eyelid lateral fat pocket without complications in all of our patients. The technique of removing the lateral lower eyelid fat pad via the upper eyelid was first described by Jelks et al.[5] We used our modified method in our selected patients because they only had protrusion of the lateral fat pocket, either genetic or because this fat pocket was inadequately debulked during prior lower eyelid blepharoplasty. Furthermore, by far the majority had upper eyelid dermatochalasis

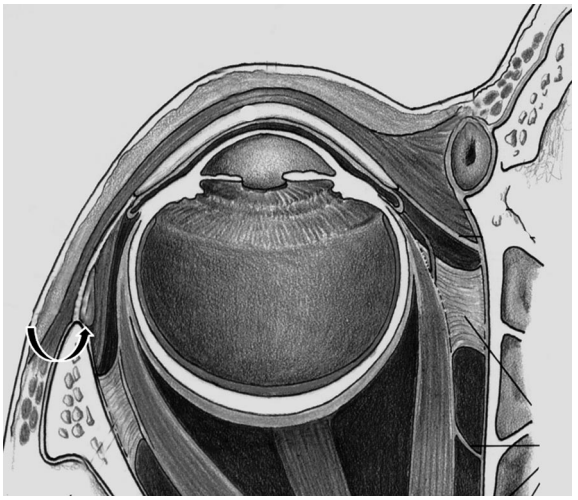

Fig. 4. Schematic diagram of the relationship between the lateral canthal tendon and Eisler's fat pad (*arrow*). Note that the lower eyelid lateral fat pocket is distinct from Eisler's fat pad.

and mild to moderate lateral canthal laxity that needed to be addressed as well. These patients tended to be male and older. They underwent standard upper eyelid blepharoplasty. To correct the lateral canthal laxity, they underwent minimal

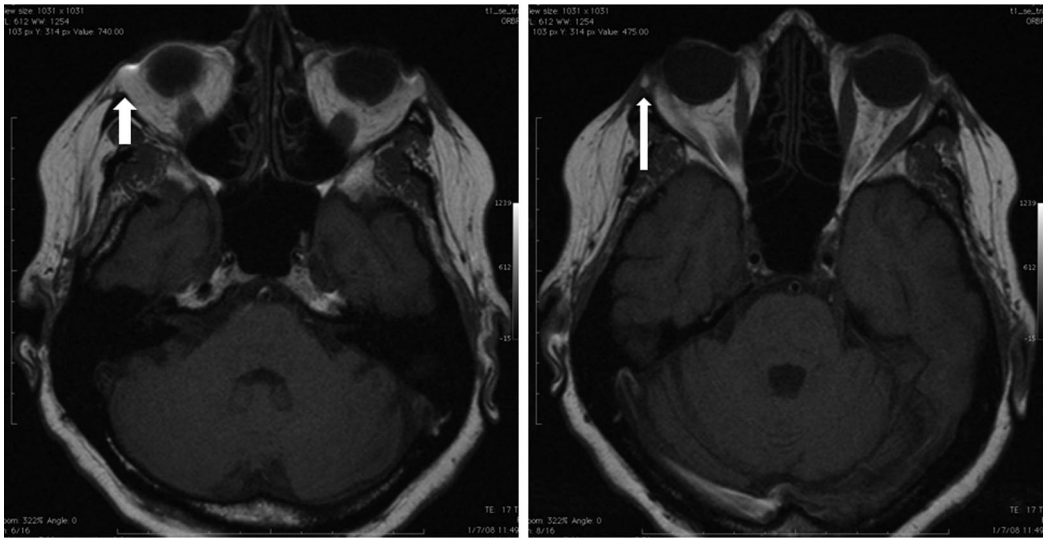

Fig. 5. High-resolution magnetic resonance imaging illustrates Eisler's fat pad and the lower eyelid lateral fat pocket, which are distinct from each other. (*Left*) Lower eyelid lateral fat pocket (*short arrow*). (*Right*) Eisler's fat pad (*long arrow*).

incision canthoplasty through the upper eyelid incision using a percutaneous approach,[6] which is different but analogous to that described by Jelks et al.[5]

The inferior lateral canthal tendon fibers may have to be released in our technique to better expose the lateral fat pocket (Fig. 1, *center, left*). Most of our patients were older with lateral canthal laxity; therefore, they benefited from this step along with lateral canthal tightening after completion of the fat debulking (Fig. 3). It is important to note that the lateral lower eyelid fat pocket is distinct from the Eisler's fat pad, which is distinct from the lateral extension of the preaponeurotic fat pocket of upper eyelid (Figs. 4 and 5).[7] Eisler's fat pad is a small fat situated between the orbital septum anteriorly and superiorly, the lateral canthal tendon posteriorly and nasally; the lateral orbital rim temporally, and the zygoma inferiorly (Figs. 4 and 5).[6] It does not require removal during blepharoplasty.

In summary, debulking of lower eyelid lateral fat pocket through an upper eyelid approach can safely and effectively address this often hidden fat pocket. It may be ideal for those patients (usually older men) with only prominent lower eyelid lateral fat pocket and upper eyelid dermatochalasis. It can, however, also be utilized along with the transconjunctival approach to address the often hidden and difficult to access lateral fat pocket. It is also useful for patients with a prior history of failed lower eyelid blepharoplasty with a remaining prominent lower eyelid lateral fat pocket. This technique can be combined with lateral canthal tightening through the same surgical incision. Knowledge of the anatomic relationship between the upper eyelid, lower eyelid, lateral canthus, and orbit is important to avoid unnecessary damage when using this technique. The Eisler's fat pad should be preserved if possible.

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