
The External Browpexy: A Minimally Invasive Brow Lifting or Stabilization Procedure

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Guy G. Massry

Background

The external browpexy (Massry 2012) is a transcutaneous variant of the internal brow suspension initially described by Mc Cord in 1990 (McCord and Doxanas 1990). Since then, the internal approach has been modified in various ways (release of brow-retaining ligaments, suspension to deep temporal fascia, use of endotine fixation device) to improve outcome (Burroughs et al. 2006; Tyers 2006; Georgescu et al. 2011; Cohen et al. 2011). Like its internal counterpart, its purpose is to minimally lift or stabilize the temporal brow as an adjunct to upper blepharoplasty surgery. These browpexy procedures cannot be compared to formal brow lifting surgery which typically involves large or multiple incisions behind or at the hairline, within forehead rhytids or directly above the brow. The ideal candidate for browpexy is the patient with minimal temporal brow descent who does not desire the downtime, costs, or intricacy of more involved brow lifts. With this in mind, patients must be realistic in their surgical expectations as a browpexy will yield subtle results.

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

The author initially pursued the external browpexy as he did attain consistent results with the internal procedure. He has now performed over 100 external suspensions with an average 1-year follow-up and has found the procedure to be more reliable than the internal browpexy in minimally lifting and/or stabilizing the temporal brow. While a relatively straightforward technique, the procedure does carry a learning curve but can be performed in 10–15 min under local anesthesia without significant postoperative rehabilitation.

Comparison to Internal Browpexy

In the internal procedure, the brow is accessed through a standard blepharoplasty incision. Dissection is carried between the brow fat pad and the frontal bone periosteum. The brow fat can be sculpted as necessary (care is taken to avoid skeletonization), and the fat pad and/or orbicularis muscle is engaged and secured to the frontal periosteum with 2–3 interrupted sutures (the author prefers 5-0 Prolene on a P3 needle). The internal location of brow suspension can be identified by placing a full-thickness guiding suture from the skin to the wound at the inferior brow to identify suture placement in the brow tissue. Suture placement through the periosteum is estimated by surgeon experience. In this procedure, the brow is fixated internally and from below.

In the external fixation, the height of brow fixation is determined preoperatively (see surgical procedure below). A small skin incision (8 mm) is made at the superior brow hairs or within the brow cilia. Subcutaneous dissection to the periosteum continues nasally and laterally for approximately an inch (25 mm) so that the internal cicatrix formed is 3X the size of the skin incision. Both the orbicularis muscle and brow fat are engaged, elevated, and fixated to the periosteum. When the fixation suture is tied, the brow not only elevates but also anteriorly rotates (as brow fat is repositioned over the orbital rim), potentially augmenting subcutaneous brow volume. In this procedure, the brow is suspended externally and from above.

The Procedure

1. In the preoperative area, the location of brow entrance for suspension is determined. This is typically in a line drawn diagonally from the nasal ala through the pupil or outer limbus (whichever provides the best lift and contour). At this point, an 8 mm arc is drawn circumferential with the upper brow hairs or within the brow cilia (Fig. 105.1).
2. This point is elevated to the desired level of brow elevation, a marking pen is placed over this point, the brow is released to its native position, and a mark is made with a marking pen over the skin (Fig. 105.1). This point

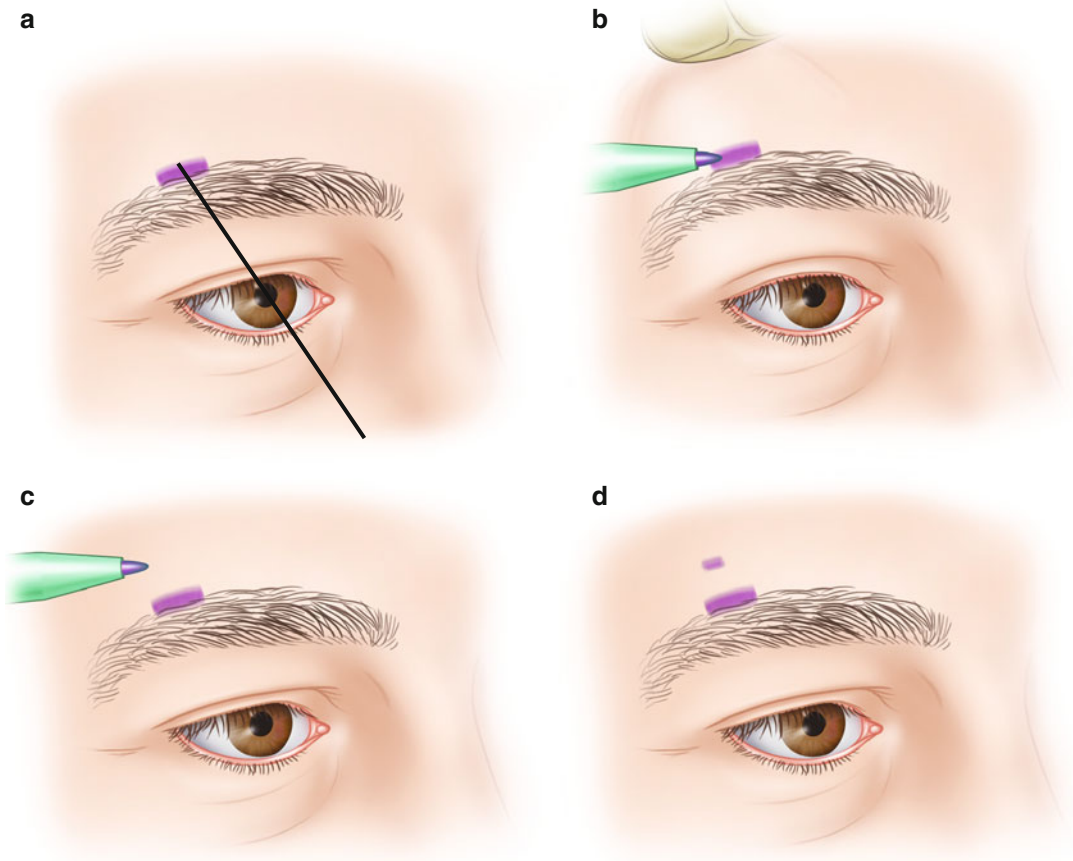


Fig. 105.1 (a) Location of brow incision is determined by drawing a diagonal line from the nasal ala through the pupil or outer limbus depending on patient desires. An 8 mm mark is made at this location in line with the superior brow hairs. To determine the amount of brow eleva-

tion, the brow is (b) manually lifted to the desired position and a marking pen is placed at this level at the incision site. (c) The brow is released to its native location; and (d) a mark is made below the new position of the marking pen. This is the desired amount of elevation

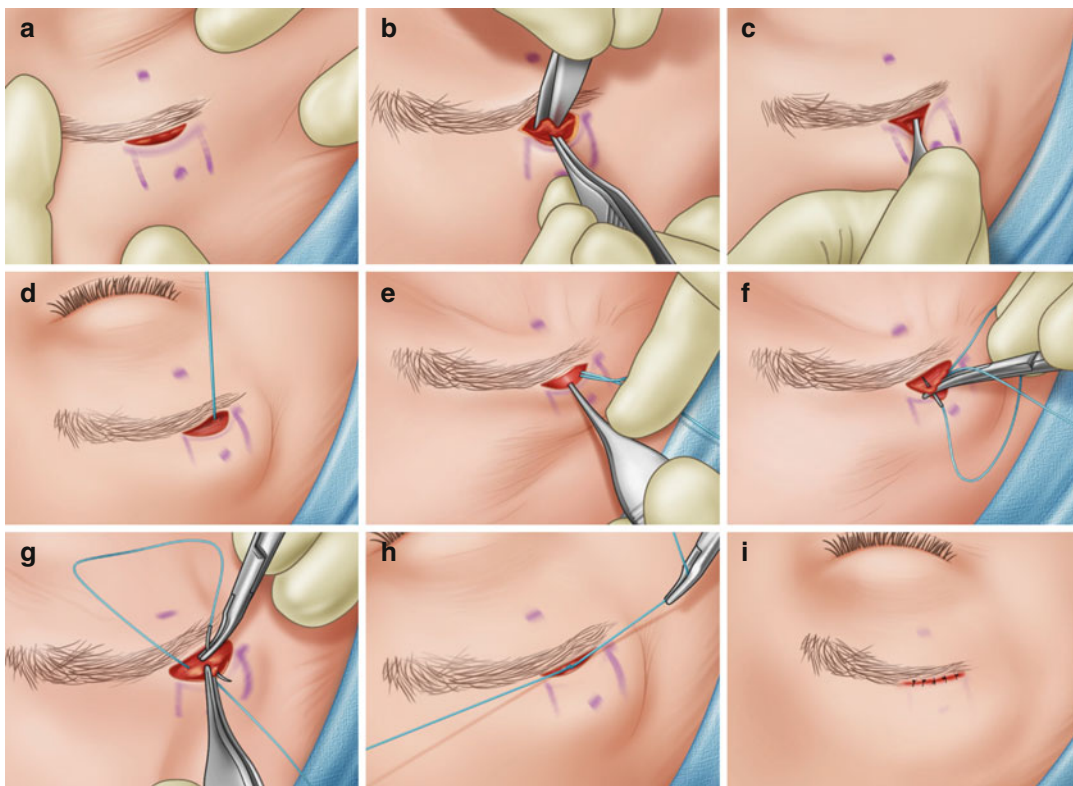


Fig. 105.2 (a) Skin incision above the brow, (b) orbicularis incision, (c) forceps grasping the periosteum or adjacent fixed tissue used to anchor the brow, (d) Prolene suture pulled with tension to assure fixation to the periosteum, and (e) forceps engaging the orbicularis muscle and

underlying brow fat pad. Note elevation and arching of brow, (f, g) Horizontal mattress bite through orbicularis and brow fat, (h) Prolene suture tied to fixate the brow, and (i) final closure

3. Refer to Figs. 105.2 and 105.3 and points 4–13 below for surgical series.
4. An incision is made through the skin.
5. Dissection is carried through the orbicularis/frontalis muscle interdigitation to the periosteum.
6. Subcutaneous dissection proceeds nasally and temporally for a total of 1 in. (25 mm) so that internal wound is 3X larger than external incision (provides larger cicatrix to form).
7. A toothed forceps engages the periosteum or tissue directly fixed to the periosteum.
8. As the wound is small, this can be difficult. The wooden end of a cotton-tipped applicator can elevate the superior wound tissue to aid in engaging the periosteum.
9. Pull on suture to assure a good capture of the periosteum.
10. The brow fat pad and orbicularis muscle are secured to the periosteum in a horizontal mattress-type bite, and the suture is tied. The brow will elevate and anteriorly rotate.
11. A small amount of subcutaneous dissection may be needed to prevent skin pucker.
12. Subcutaneous closure is with 5-0 Vicryl inverted suture.
13. The skin is closed with interrupted 6-0 nylon suture.

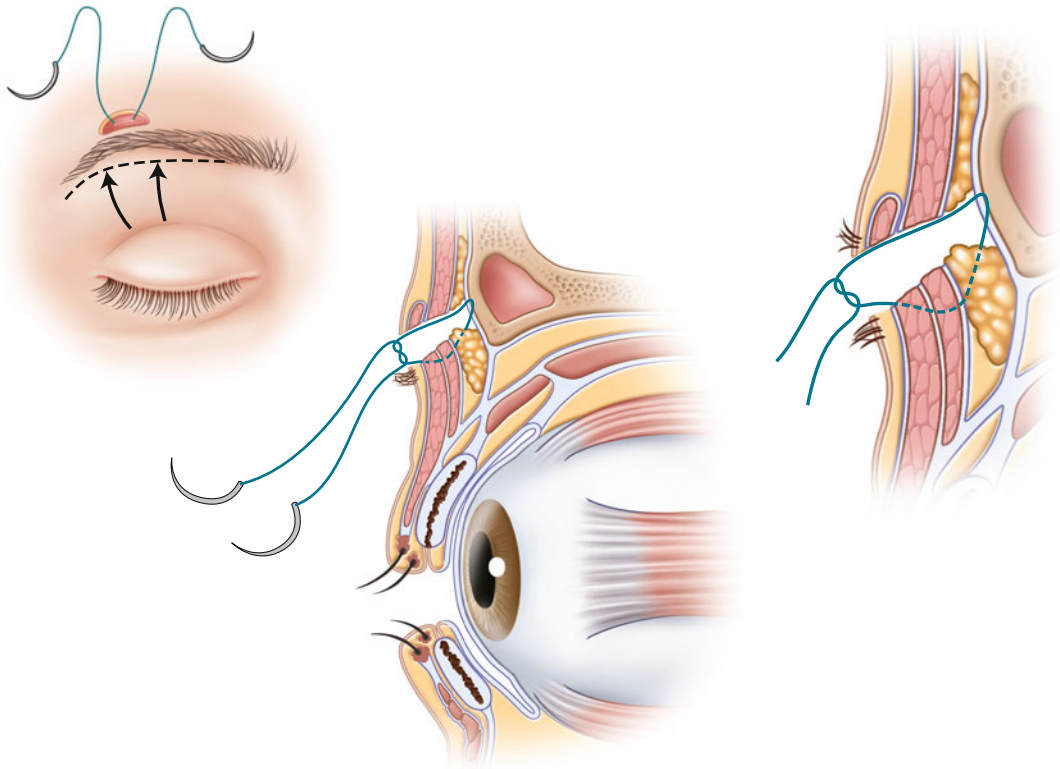


Fig. 105.3 An artist's drawing of the external browpepsy procedure. *Top left* – frontal view of suprabrow incision with suture fixation. *Arrows* demonstrate direction of lift from *dotted lines* to new brow position. *Center* – sagittal view showing suture placement through the periosteum,

brow fat, and frontalis/orbicularis muscle interdigitation. Note superior to inferior vector of suture placement which will lead to brow elevation when the suture is tied. *Right* – magnified view of suture placement. Note brow incision can be at superior brow (*center*) or within brow cilia (*right*)

Postoperative Course

There is a degree of swelling and induration above fixation point for 1–4 weeks depending on the amount of lift. This resolves over time. The induration and wound healing can be modulated with 5FU injections.

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