Aesthetic Aspects of Reconstructive Surgery of the Lower Lid

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Abstract. Aesthetic repair of the lower eyelid should use palpebral skin and restrict the cutaneous scars to the orbital area. Except in young patients or those having previously undergone a blepharoplasty, it is usually possible to raise a 10- or 12-mm-wide flap from the upper eyelid. The use of such a flap lined with an alar chondromucosal graft is advocated in a one-stage procedure. This graft ensures a good functional result and the stability of the new eyelid because the cartilage is as high in its bulk as the lid. In spite of histologic differences, where the tarsus is not a cartilage and the inner lining of the ala nasi is not actually a mucosa, the alar chondromucosal graft is very much like the tarsal conjunctival complex. When the alar defect is accurately repaired, no deformation of the nose results.

Key words: Lower eyelid reconstruction—Musculocutaneous flap from the upper lid—Alar chondromucosal graft from the ala nasi lining

Whatever the method, aesthetic reconstruction of the lower lid should use palpebral skin and restrict the cutaneous scars to the orbital area, where they are inconspicuous. For over 15 years, we have been using a one-stage procedure that meets these requirements when a full-thickness defect of the lower lid is too large to be closed by direct approximation. Reconstruction is carried out in two layers: (1) a musculocutaneous flap from the upper lid and (2) a chondromucosal graft from the inner lining of the ala nasi.

Anatomy of the Lower Lid

The lower lid is made of four main layers: skin, orbicularis oculi muscle, tarsoseptal layer, and conjunctiva. The palpebral conjunctiva has a height of less than 10 mm from the inferior fornix to the free border of the lid. The inferior tarsus has a vertical height of about 5 mm; it is closely adherent to the conjunctiva. On the cutaneous side, the inferior border of the lid, or palpebrojugal fold (in young people, only its inner part is visible), is below the level of the fornix.

The Lid Defect

A lid defect is a full-thickness one only on a height of 1 cm. Only this part needs to be repaired with a flap. If the defect extends beyond the palpebrojugal fold, a skin graft usually may be used.

Because the lid tends to loosen in elderly patients, we advocate the excision of a wedge on the cut edge of the defect in the skin (Fig. 1). This has the advantage of tightening the inferior border of the new lid and prevents ectropion (Fig. 2).

The Upper Lid Musculocutaneous Flap

Except in young patients or those who have previously undergone a blepharoplasty, it is always possible to raise a 10- to 12-mm-wide flap from the upper lid; such a flap ensures a good aesthetic result. The full thickness of the orbicularis muscle must be raised with the skin flap; this is mandatory for the viability of the flap.

The Alar Chondromucosal Graft

The inner lining of ala nasi is made of skin with hair, near the alar rim, and a vermilion-like mucosa in the posterior part, which is much larger.

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1 As pointed out by G. Noury-Duperrat, the inner lining of the ala nasi in its posterior part is very like the vermilion histologically: there is no stratum corneum and no skin appendages (no hair, no sweat, and sebaceous glands).
The concavity of the graft fits exactly to the convexity of the eyeball. The chondromucosal graft is revascularized through its edges, so that all the cartilage can be preserved, except 1 mm all around the graft for ease in suturing. Thus, the cartilage is higher than the tarsus, and the graft ensures definitive stability of the new lid. The donor site must be repaired with a skin graft. Provided that this is correctly achieved, no contraction of the ala nasi results (Figs. 3, 4), because a strip of cartilage is left in place.

**Surgical Technique**

Excision of the lid is usually made for a malignant tumor. The punctum and canaliculus lacrimalis are preserved whenever possible.

Excision of the conjunctiva and tarsus is restricted to what is necessary, but excision of skin should be extended to the topographical unit.

A wedge excision is made on the cut edge of the defect in the skin near the base of the upper lid flap, unless eradication of the tumor demands a more medial excision (Fig. 5).

To prevent a hematoma, we do not infiltrate the flap itself for local anesthesia, but its vicinity.

We use a unipedicled flap, which is easier to raise and put in place, with a lateral pedicle whenever possible (Fig. 6).

The lower edge of the flap is outlined 2 mm under the supratarsal fold, from the inner canthus to a point 12 to 15 mm outside the lateral canthus. This distance should be the same as the width of the flap at its base, otherwise the flap tends to roll around itself.

The upper edge is outlined 10 to 12 mm above. It extends outside a little less than the lower edge.

The posterior incision is made at the lower border of the lateral cartilage, taking care to maintain the same distance from the alar rim all along the incision.

The anterior incision is made just behind the hairline through mucosa and cartilage; a strip of alar cartilage is left in place.

The graft is undermined from the anterior to posterior incision. Then an incision is made at both extremities of the graft. The graft is carefully examined to make sure that no hair is left (Fig. 7).

After the borders of the graft are trimmed, the graft is sutured to the cut edge of the conjunctiva with interrupted resorbable sutures using inverted stitches (Fig. 8).

When putting the flap in place, one must take care that there is no twisting and no traction on the pedicle.

The upper lid defect is closed by approximation with a continuous intradermal suture (Fig. 9).

The alar donor site is repaired with a skin graft, which