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Research Article

Reconstruction of anterior lamella of lower lid by double reciprocal flaps

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Background

Eyelid reconstruction relays on different variables which among them, one of the most important factors is width of eyelid defect. But when more vertical components are involved, especially in lower lid, structural reconstruction becomes more challenging [1]. So, it is important to consider combined or complex procedures to overcome postoperative sequels like ectropion which can be devastating [2].

Three key points of lid reconstruction- anatomical integrity, functional appliance, and cosmetics- should be concisely looked for. Thus, every surgeon should be familiar with trilamellar structure of lids to deal with. Anterior lamellar defects include the most common cases need different types of reconstruction such as grafts or flaps.

There are various loco-regional flaps to provide substitutions for skin defects. This cannot be achieved unless the surgeons have enough knowledge about advantages and disadvantages of each technique. Check, temple, forehead, and upper lid are suitable donor sites of flaps to reconstruct lower lid.

Sometimes combined flaps are good to reconstruct bigger lower lid defects, because sufficient tissues may be available and surgeon can select better choices and mold as he needs. On the other hand, more scars around orbital units may result in sequels mentioned above. So, it is wise to manage the all process concisely and systematically.
This is a presentation of lower lid tumor excision resulted in significant vertically and horizontally defect, managed by double local flaps, which left an acceptable aesthetic and functional lower lid, maybe as a recommendation in especial conditions.

Case presentation

A 57 years old man admitted for his lower lid non healing wound from 3 years ago. Another surgeon did a lesion biopsy that was Basal Cell Carcinoma (figure 1). This neglected lesion involved lower lid superficially, which extended beyond lid. Since excision of this tumor with satisfactory margin, would resulted in significant defect, we decided to use two combined flaps simultaneously. First, a Tripier flap from the upper lid with lateral pivot point including orbicularis oculi muscle, and then a medially based transposition cheek flap were designed to compensate available defects (figure 2).

Figure 1: A 57 years old man with lower lid BCC.

Figure 2: Preoperative marking.

After excising the tumor by sufficient margin, the posterior lamella was intact and we had to reconstruct only anterior lamella which horizontally involved lower lid sub-totally and vertically extended to malar area. So, accordingly two reciprocal flaps were marked, incised, and transposed to the resulted defect, exactly as we expected, and finally sutured (figure 3). Designing reciprocally oriented flaps reduced final twitching of pivot points and saved aesthetic characteristics of peri-orbital. Postoperative functional and cosmetic results were encouraging (figure 4,5).

Discussion

Absolutely eyes and their supporting system have unassailable effects of facial aesthetics. Every intervention in orbital unit without considering these points cannot be successful. Instances such as tumors, burn scars, traumas, infections, and iatrogenic events may disturb normal tissues and cause lid deformities.

As previously mentioned, peripheral units are suitable sources of flaps to reconstruct lids- and
here lower lids. For example cheek provides nutritious tissues to be reposition in the defects of lower lid. Older patients have loose cutaneous structure and cheek tightening is a special cosmetic advantage of transposition flap, beside suitable reconstruction of lid. Moreover, Fogagnolo (2012) emphasized the importance of cheek flap limbs’ orientation to minimize secondary retraction of lower lid [3], and we show that selection of proper limb design, not only minimizes complication, but also, has less surgery stigmata.

Figure 3: Flap transposition to the defect.

Figure 4: A few days after operation.

Figure 5: Maya demonstrated Mustarde’s lid switch flap is a good choice to cover lid defect but, lack of supporting tissue suggested as the weakness of it predisposing to entropion [5], we considered our switch flap, there was not such complication, maybe due to proper muscle involvement in the flap. It is clear that both upper and lower lids have similar contours and colors and can substitute each other, especially when enough muscular tissues included in the flap, that remain incredible results.

Zeynep et al (2018) recently illustrated their lower eyelid anterior lamellar reconstruction according to defects extension regarding to orbit and presented a classification in an algorithmic approach. They presented double flap (cheek flap + forehead flap) to cover totally defects of lower lid [4]. Forehead is a good choice as donor site of flaps and usually provide robust tissues. But visible scars are considerable and mostly needs secondary operation and some patients are not satisfied with forehead scars. We gathered all possible choices and discussed the patient their benefits and disadvantages and complications may be encountered, and eventually decided to do what happened. When the combined flaps are reciprocally based, that means one is based medially and the other is based laterally, healed scar is smoother and slight deformities are not concentrated in a point to mimic real operation mark.
Conclusion

Lower lid defects following trauma or tumor ablations, especially when they are horizontally and vertically significant, become challenging and need more concise techniques. We presented double reciprocal flaps from the upper lid and cheek based laterally and medially, respectively to have the least postoperative deformities.

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