

Case report

A successful secondary upper lid reconstruction with glabella rotatory flap

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Introduction

The eyelids have essential functions to the face and the eyes. Lids provide mechanical protection to cornea and the globe. To full fill its function the upper lid must move down to cover the cornea during blinking and should be able to elevate to clear the visual axis.

The eyelid defects may be distressing to the patient due to the cosmesis and functional roles of the upper lids. There is a psychological impact which requires more attention from the health staff.

Lid reconstructions used to correct eyelid defects following trauma, surgical resection of tumors or congenital anomalies. Reconstruction of upper eyelid defects are much more complicated than the lower lid defects.

The aim is to provide adequate eye closure, preservation of tear film, maintenance of an clear visual field, provide a smooth epithelialized tarsal conjunctival surface and to recreate an eye, which is aesthetically appealing.

The reconstruction method must be carefully studied and assessed on an individual basis and should discuss with the patient to evaluate their preferences. There is no fixed protocol and it is dependent on the involved structures, length of the defect, availability and the integrity of the surrounding tissue.

History

70 years old male patient presented to the Eye Clinic, DGH Ampara on 2020 November, with ulcerated right cornea and necrosed skin graft over the the upper lid. (Figure 1). He had 6/60 vision in the right eye and NPL in the left eye. In his past ocular history, he had right upper lid malignant tumor resection and two lid reconstruction surgeries with lateral forehead rotatory flap and a skin graft done in another institution. Left eye was blind with past history of pseudophakic bullous keratopathy.



Figure 1.

Initially managed with surgical removal of necrosed tissue and conjunctival rotatory flap. (Figure 2). Until complete cure the exposed area was temporarily covered by two tarsorrhaphies and a frost suture (Figure 3 and 4). Antibiotics and lubricating eye drops also applied frequently



Figure 2.

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Figure 3.



Figure 4.

This patient was conservatively managed nearly 11 months to get a healthy ocular surface (Figure 5).



Figure 5.

To reconstruct his upper lid defect first option was Cutler Beared method but the patient refused.

Then planned for the Glabella Rotatory flap method to reconstruct his upper lid defect.

Surgical technique

The surgery was performed under general anaesthesia. His remaining lateral eyelid was fibrosed and adhered to the globe firmly. Those fibrous tissues were resected and closed, the conjunctival defect with an amniotic membrane (Figure 6).



Figure 6.

Required soft tissue length for the eye lid correction was measured from the root of the nose (Figure 7) and it was marked on the median forehead using a sterile paper (Figure 8 and 9).



Figure 7.



Figure 8.

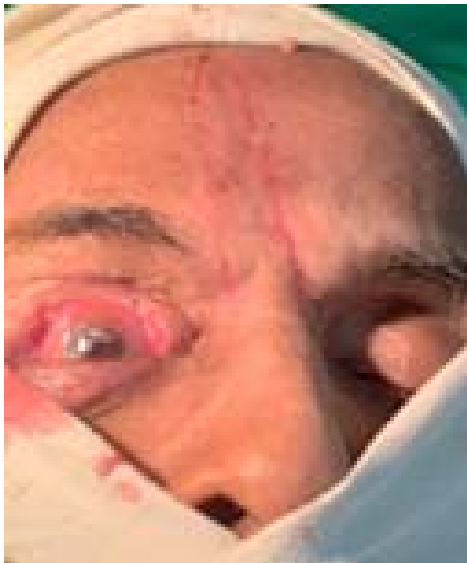


Figure 9.

Inverted V incision on the glabella was placed and the flap was harvested above the periosteum by with undermining to permit good arc of rotation (Figure 10). Left side Supra-trochlear vascular pedicle was carefully preserved, separated and included to the root of the flap. A small part of the skin just above the medial canthus was resected in order to clear the defect.



Figure 10.

Then a conjunctival auto-graft was taken from the contralateral NPL eye (Figure 11) and it was grafted to the inner side of the harvested glabellar flap and secured with sutures (Figure 12).



Figure 11.



Figure 12.

The recipient site skin and conjunctiva were resected, refashioned and undermined in order to anchor the glabellar flap.

The flap was positioned to the eye lid defect and tension free closure was done (Figure 13), (harvested conjunctiva to the recipient conjunctiva and skin to skin). Equal tissue texture, skin colour and the thickness were nicely matched to obtain a near normal soft tissue reconstruction of the eyelid defect.

Finally, the glabellar donor site was primarily closed with extensive undermining on either side (Figure 14).



Figure 13.



Figure 14.

Discussion

The glabellar flap is a rotation advancement regional flap which was first described by Carl von Graefe in 1818 for nasal defect reconstruction. This is harvest with an inverted V incision in the median forehead area between and above the eyebrows. It is predominantly used for medial canthal and lateral nasal wall soft tissue defects and priceless for the reconstruction of facial clefts and central mid face soft tissue deficiencies in the maxillofacial surgery. The flap can be rotated 90-120 degrees into the tissue defect and the donor site could be primarily closed in V-Y fashion. The glabellar flap has a random axial blood supply.

But it can be based on the supratrochlear or angular artery by careful subperiosteal soft tissue dissection to ensure a reliable vascular pedicle. We incorporated left supratrochlear and angular arteries for a reliable outcome of the procedure. Similar colour and texture of the medial forehead loose glabellar tissue was effectively used in this secondary upper eye lid surgical reconstruction.

Reference

Medial canthal reconstruction with glabellar combined Rintala flaps. Onishi K, Maruyama Y, Okada E, Ogino A. *Plast Reconstr Surg.* 2007; **119**: 537-41.