

LOWER EYELID RECONSTRUCTION FOLLOWING A TRAUMATIC FULL THICKNESS LOSS

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INTRODUCTION

Face being the most exposed part of the body is vulnerable to traumatic injuries in about 50-70% of people who sustained road casualties. Eyelid lacerations may involve the lid margin, extramarginal or tissue loss. It may be accompanied with orbital rim or wall fractures. Visual functions are very important to be identified as it may lead to visual loss.

CASE REPORT

24 years old gentleman was involved in a motorbike accident. He sustained an extensive wound over the right cheek with full thickness right lower eyelid loss exposing the orbicularis oculi muscle. The medial and lateral canthus with the lacrimal punctum were intact. Clinically there were no facial bone fractures. There were neither eye ball injuries nor diplopia.

OPERATIVE TECHNIQUE

(A,B): Extensive wound over the right cheek with full thickness right lower eyelid loss.

(C): Outline of the cheek rotational and advancement flap (as anterior lamella). Raised at the superficial muscular aponeurotic system (SMAS) plane with the incision made laterally to the lateral canthal with an upward curve continuing along preauricular incision line extending behind the ear lobe.

(D): Nasal septal chondromucosal graft was harvested from the left side of the nasal septum (as posterior lamella). Cartilage layer (above) and mucosa layer (below)

(E,F): Harvested chondromucosal graft (marked by →) inset at defect. Cartilage layer was anchored to the remnant tarsal plate and mucosa layer was anchored to the remnant conjunctiva and proximally was folded over to be sutured with the skin flap

(G,H,I): Post-operative. Patient was able to close his eyes completely with mild ectropion



DISCUSSION

Eyelids act to protect the globe from local injury, regulate light that reaches the eye, maintaining the tear film over the cornea during blinking and allow the tear flow by their pumping action on the conjunctival sac and lacrimal sac. The upper eyelid plays a role in mobility and therefore it needs to be reconstructed with light weight and pliable tissue while the lower eyelid is for stability. In full thickness eyelid injuries, it will involve both anterior and posterior lamella. Complications such as ectropion, entropion and poor permanent lid support may arise if the reconstructed area of large defects do not have adequate support.

Anterior lamella reconstruction in this case was a combination of cheek rotational skin flap and advancement skin flap. Elevation of the cheek flap deep to the orbicularis oculi and superficial musculoaponeurotic systems (SMAS) will improve the random blood supply to the flap. Lateral canthoplasty is recommended in cheek rotational and advancement flaps to reduce the risk of lower lid malposition and to avoid postoperative lid retraction. If the defect is very large, the flap can be extended till the deep plane cervicofascial flap (DPCFF). The DPCFF is a musculo-fascio-cutaneous flap which includes the SMAS and an axial blood supply.¹ DPCFF has better advantages over the conventional cheek advancement-rotation flap as the later has a random blood supply and therefore may need a wider pedicle to maintain its vascularity.

Posterior lamellar reconstruction is needed to restore the inner lining to reduce friction with the globe and for support to the eyelids. Septal chondromucosal graft from the nasal septum is a composite graft consisting of the nasal cartilage and mucosa. It replaces both tarsal plate and conjunctiva. The height is to form the lower fornix and the width should be adequate to maintain the actual length of the eyelid. A caudal and dorsal strut of 1 cm is preserved for adequate nasal support. The cartilage will be trimmed to replace the lost tarsal plate and the mucosal layer was left to be larger than the cartilage so that it could form the eyelid margin and conjunctiva.^{2, 3} This composite flap provides both support and softer lining with less corneal irritation in the absence of a keratinized surface.

CONCLUSION

Eyelid reconstruction is challenging as it needs to restore the complex eyelid anatomy and recreating a natural aesthetic appearance. Best treatment options in eyelid reconstruction depend on the location, size, and anatomy of the eyelid involved and the shape of the defect.

REFERENCES

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