

Cicatricial Ectropion Correction using Autologous Skin Graft after Surgery for Blowout Fracture

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Purpose: Cicatricial ectropion is caused by shortening of the anterior lamella, which is comprised of the skin and orbicularis muscle. There is a much higher incidence of ectropion after blowout fracture surgery that applies subciliary incisions than the transconjunctival approach. We report a case of lower lid cicatricial ectropion following blowout fracture reconstruction that was performed through subciliary incision and was successfully repaired by an autologous skin graft.

Case summary: A 27-year-old man presented with right lower eyelid ectropion following surgery for a blowout fracture on the right inferior wall. The blow-out fracture had been reconstructed via a subciliary incision one year ago, by a plastic surgeon. His cicatricial ectropion was corrected through autologous skin graft from his left upper eyelid with a lateral tarsal strip procedure. The autologous skin graft successfully replenished the lower lid tissue defect, and the patient did not experience lid retraction or ectropion at 9 months after surgery. There were no postoperative complications on his left upper eyelid, which was the donor site for the autologous skin graft.

Conclusions: Surgical repair with an autologous skin graft from the contralateral upper eyelid is an effective procedure for managing cicatricial ectropion following surgery or trauma in young patients.

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Key Words: Cicatricial ectropion; Skin graft; Subciliary incision

Cicatricial ectropion is caused by shortening of the anterior lamella, which is comprised of the skin and orbicularis muscle. Postoperative or posttraumatic scarring and tarsus deformity or a combination of the two can cause cicatricial ectropion.¹ Previous studies have reported that lower blepharoplasty or surgery for facial trauma is a common cause of cicatricial ectropion.² In cases of cicatricial ectropion following surgery for a blowout fracture, there is a much higher incidence of postoperative ectropion after subciliary

incisions compared to transconjunctival incisions. This is thought to be due to vertical shortening of the lower lid caused by abnormal adherence between the orbital septum and periosteum of the infra-orbital rim.³ Cicatricial ectropion of the lower eyelid is surgically treated in a three-step procedure. The anterior lamella lengthening procedure, via a full-thickness skin graft or midface lift, is required for vertical reconstruction, in addition to a vertical cicatricial scar release and horizontal tightening.⁴ Here, we report a case of successful lower lid cicatricial ectropion repair with an autologous skin graft; the cicatricial ectropion was a complication after blow-out fracture reconstruction through subciliary incision.

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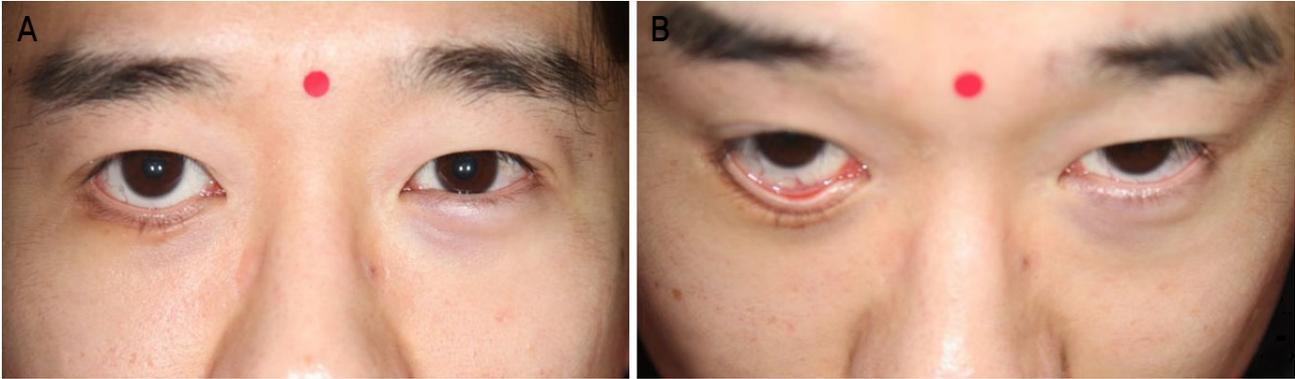


Figure 1. (A) External photo demonstrates right lower lid ectropion with lid retraction, with inferior sclera shown in the primary gaze photo. (B) Photo was taken 45° from the primary position, with the patient looking upward. The right lower lid ectropion is more prominent in this view.

CASE REPORT

A 27-year-old man presented with a 4-month history of right lower lid retraction and ectropion. One year previously, he had undergone surgery for a blow-out fracture of the right inferior wall, through subciliary incision by a plastic surgeon. His right lower limbus margin and inferior sclera were shown in the primary position (Fig. 1). We performed scar revision with an autologous skin graft from the contralateral upper lid and the lateral tarsal strip procedure (Fig. 2). First, fibrotic scar release was done in the mid lamella to correct lower lid retraction. Then, full thickness skin graft was performed to replenish skin and soft tissue defects, and the lateral tarsal strip procedure to shorten and elevate the lower eyelid. The patient recovered and was tracked via follow-up visits showing successful correction of lid retraction and ectropion. There were no postoperative complications in the left upper lid, the donor site of the autologous skin graft (Fig. 3).

DISCUSSION

Cicatricial lower eyelid ectropion is caused by a shortening of the anterior lamella, which results in eversion of the eyelid away from the globe. In early cases, amniotic membrane transplantation can be considered as an early surgical procedure to prevent scarring-induced sequelae in the chronic stage.⁵ However, the treatment of lower lid cicatricial ectropion is often difficult and requires surgical intervention. Techniques include skin grafts, skin muscle flaps, and cheek lifts to recruit inadequate anterior lamella,



Figure 2. Intra-operative photo of scar revision on the right lower lid with autologous skin graft from the contralateral upper lid.

often in combination with spacer grafts, such as palatal mucoperiosteal graft, or using the palmaris longus tendon.^{6,7} Our case study reports successful correction of cicatricial ectropion following surgery for a blowout fracture, with a full thickness autologous skin graft from the contralateral upper eyelid, but without using a spacer graft. It is assumed that traumatic ectropion requires the use of a spacer graft more often than those that occur due to iatrogenic causes.

In this case, we used the contralateral upper eyelid as the donor site for the skin graft. This approach was used because the young patient did not have redundant skin near the ectropion lesion. We performed blepharoplasty on the left upper eyelid to harvest the skin graft. Although the blepharoplasty was performed unilaterally, asymmetry is not expected to be problematic because the patient had his own double fold line (Fig. 3). However, if the patient had not had a double fold line, upper blepharoplasty would have

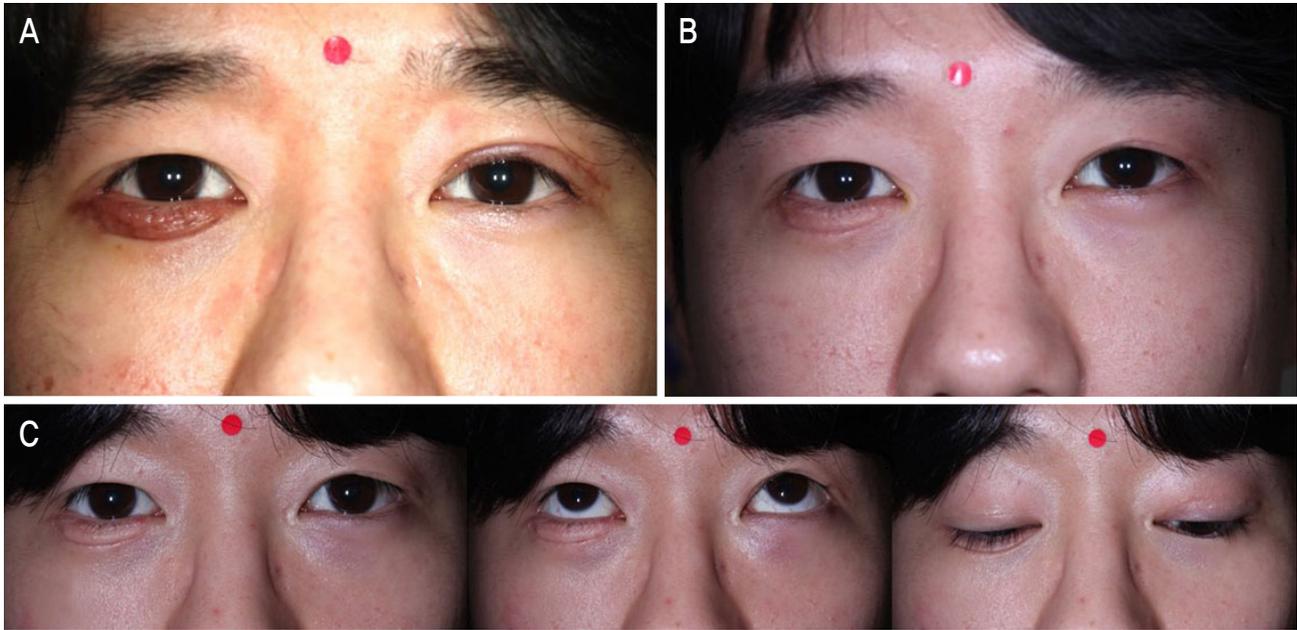


Figure 3. Post-operative photographs show successfully corrected retraction and ectropion. There were no postoperative complications in the left upper lid, the donor site of the autologous skin graft. (A) Postoperative 1 month. (B) Postoperative 4 months. (C) Postoperative 9 months, primary, upgaze, downgaze photos, respectively.

been performed on both eyes for symmetry.

The contralateral upper eyelid as the full thickness skin graft donor is beneficial both intraoperatively and postoperatively. The upper eyelid is easier to manipulate, and the surgeon can complete the graft step relatively easily. In addition, the upper eyelid has the same skin color and texture, so it allows for better surgical outcomes in appearance and aesthetics.⁸ Furthermore, some younger Asians may consider a collateral double fold created during repair surgery as an aesthetic benefit.

Along with scar release and a full thickness skin graft, we also performed the lateral tarsal strip procedure. Ozgur et al⁹ has reported that an additional lateral tarsal strip procedure after skin grafts or flaps to reconstruct cicatricial ectropion can help maintain a better lid margin apposition. We tried to shorten and elevate the lower eyelid, with the lateral tarsal strip procedure, and the result was satisfactory.

In blowout fracture repair surgery, the occurrence of cicatricial ectropion related to the incision must be considered, especially in the subciliary approach. A skin graft with the lateral tarsal strip procedure is an effective surgical approach for managing cicatricial ectropion that can occur after surgery. The contralateral upper lid skin can be used as the graft donor site because it is easy to manipulate and

gives a natural appearance, even in younger patients.

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