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Correction of Postoperative Lower Eyelid Retraction by Buccal Mucosal Graft Combined with Retroauricular Skin Graft

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A 52-year-old man with lower eyelid retraction and infraciliary skin contracture of the left eye, occurring secondary to repair of an orbital wall fracture, was referred. He had considerable scleral show, lagophthalmos, and a very poor cosmetic appearance. A buccal mucosal graft combined with a periauricular skin graft was performed. The postoperative outcome was highly satisfactory, with complete eye closure and good cosmesis achieved. A buccal mucosal graft can be effectively used for the management of postoperative lower lid retraction.

Key Words: *Eyelids; Mouth mucosa; Skin grafting*

Introduction

Lower eyelid retraction can arise as a problematic complication of ophthalmic surgery and can be caused by contracture formation between the orbital septum and orbicularis oculi or periosteum. Persistent cases may require surgery, and one surgical option is a lengthening procedure using a spacer graft. Various materials have been proposed for use as a spacer graft, with a hard palate mucosal graft being commonly used.[1] However, the use of buccal mucosa for postoperative lower lid retraction has not been reported. We present a case in which an autogenous buccal mucosal graft combined with a periauricular skin graft was used to repair lower lid retraction caused by repair of orbital wall fracture.

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Case Report

A 52-year-old man with lower eyelid retraction and hyperglobus of the left eye resulting from orbital wall fracture repair was referred to our department. One year previously, he had undergone repair of an orbital wall fracture by a subciliary approach. Six months later, due to postoperative enophthalmos, the inferior orbital wall was augmented using Medpor through a conjunctival approach. Combined with pre-existing brow ptosis, the patient complained of poor cosmesis and function.

The examination showed retraction in the lower eyelid accompanied by subciliary skin contracture and hyperglobus in the left eye (Fig. 1). He also had incomplete eye closure and visible scleral show. Hertel exophthalmometer was 14 mm OD and 11 mm OS. The patient was advised to massage the lower lid, and he was given two injections of triamcinolone diacetate into the orbital septum, one month apart. Despite these

procedures, lower lid retraction was still evident 6 months postoperatively, and the patient opted for further surgery.

Two autogenous graft types were used: buccal mucosa for repair of the lower lid retraction and retroauricular skin for correction of the infraciliary skin contracture. During the operation, the conjunctiva was incised along the inferior border of the tarsal plate. Adhesions between the orbital septum and the orbicularis oculi were released. Full-thickness buccal mucosa was harvested and sutured between the recessed tissues and lower tarsal border with Vicryl 7-0 (Fig. 2A). After releasing the skin contracture through the subciliary incision, retroauricular skin was harvested and grafted onto this area with black silk 6-0 to replace the skin deficiency (Fig. 2B). A bolster dressing was applied over the skin graft and a frost suture was performed.

Six months postoperatively, the lower eyelid retraction was corrected and a satisfactory cosmetic result was achieved (Fig. 3).

Discussion

Lower eyelid retraction can develop secondary to surgery, trauma, and certain disease states. The associated scleral show and lagophthalmos can lead to dry eye syndrome and exposure keratitis, in addition to being cosmetically unacceptable to many patients. A frost suture can be applied after ophthalmic surgery as a prophylactic measure. Initial management involves massage of the eyelid and injections of steroid locally. In cases persisting for more than 6 months, surgical repair using spacer grafts is necessary. Many materials have been proposed for use as a spacer graft, including homologous sclera, ear cartilage, synthetic material, and

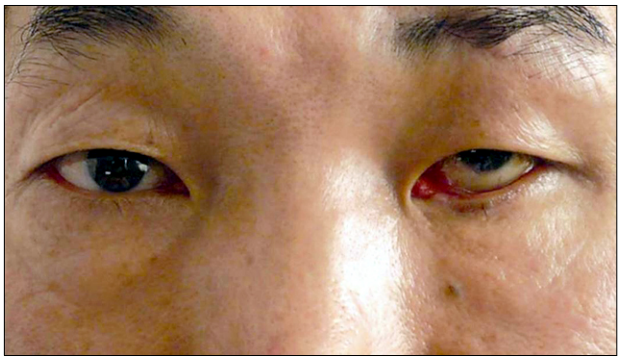

Fig. 1. Preoperative photograph demonstrating lower lid retraction, skin contracture, and hyperglobus in the left eye.

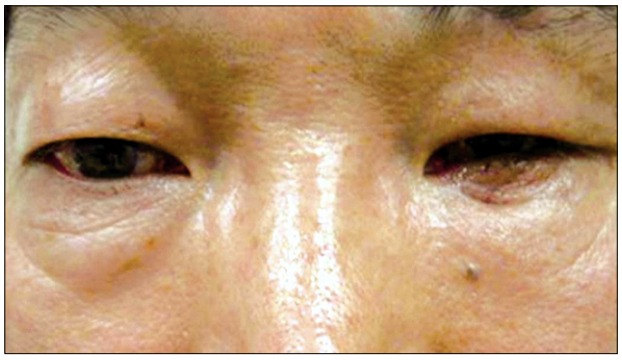

Fig. 3. Six months after surgery, lower lid retraction was improved.

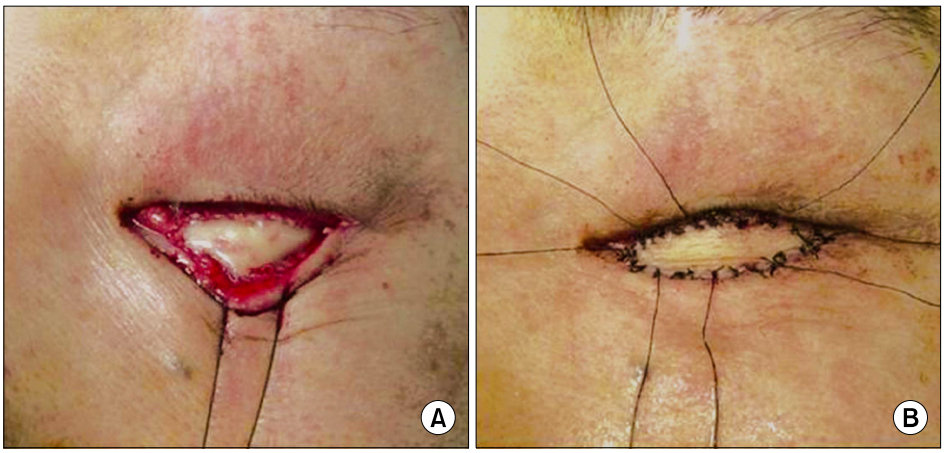

Fig. 2. Intraoperative photographs. (A) After the adhesion of the orbital septum was released, the buccal mucosa graft was sutured to the tarsal conjunctiva. (B) After releasing the skin contracture, the retroauricular skin was grafted.

hard palate mucosa. Homologous sclera is useful for lower lid lengthening, but tends to be associated with recurrent retraction because of graft absorption and fibrosis.[2] Ear cartilage is relatively easy to harvest, but is stiff, thus resulting in a relatively immobile lower eyelid. Synthetic materials have a significant risk of erosion and extrusion. Recently, a hard palate mucosal graft has been commonly used as a spacer graft because it approximates the lower lid tarsus in terms of contour, thickness, and stiffness and is well tolerated when grafted into the lower lid.[3]

Although buccal mucosa has been successfully used in ophthalmic surgery, such as for reconstruction of the fornix and the anophthalmic socket, its application for lower lid retractions has not been well described.[4,5] It has several advantages over hard palate mucosa. Harvesting of hard palate mucosa can be unreliable because of large variations in hard palate size between individuals, and grafts may be associated with considerable donor site morbidity.[3] The donor site complications associated with hard palate mucosa grafting include oronasal fistula formation, donor site candidiasis, granuloma formation, chronic mucoid discharge, and prolonged donor site hemorrhage.[3,6,7] In contrast, buccal mucosa is plentiful, making repeated harvesting possible; it is more easily accessible and results in minimal donor site morbidity.[8] Histologically, buccal mucosa grafts were found to retain their native morphology of a nonkeratinized, stratified squamous epithelium, whereas hard palate grafts were reported to be orthokeratotic or parakeratotic.[9] Therefore, buccal mucosa grafts may be less likely to cause ocular surface complications.

Our case demonstrates the successful outcome of buccal mucosa graft use in a patient with lower lid retraction after blow out fracture operation. Coexisting infraciliary skin contracture was successfully corrected by combined retroauricular skin graft. Given its advantages, we suggest that a buccal mucosa graft can be used effectively for the treatment of postoperative lower lid retraction.

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