

Fornix and Conjunctiva Reconstruction by Amniotic Membrane in a Patient with Conjunctival Mucosa-Associated Lymphoid Tissue Lymphoma

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Background: Conjunctival mucosa-associated lymphoid tissue (MALT) lymphoma is a rare, low-grade, non-Hodgkin's B-cell lymphoma. Herein, we report our successful management of the large conjunctival defect caused by resection of conjunctival MALT lymphoma by covering it with transplanted amniotic membrane.

Case: A 28-year-old Japanese man, who had been diagnosed histologically as having conjunctival MALT lymphoma in his left eye, was referred to us for treatment. The tumor was located on the lower bulbar and palpebral conjunctiva, and involved the fornix. Extensive resection of the conjunctival lesion was performed. Two pieces of amniotic membrane were used to reconstruct the fornix, bulbar, and palpebral conjunctival defect.

Observations: Epithelialization over the transplantation was completed within 3 weeks when all sutures were removed. During the 6 months of follow-up, there was no recurrence or any postoperative complication, such as graft rejection, symblepharon, or chronic inflammation.

Conclusions: We demonstrated for the first time that amniotic membrane can be used to cover a large defect on both bulbar and palpebral conjunctiva when such a low-grade malignancy as MALT lymphoma is extensively excised. Amniotic membrane transplantation was quite effective for the fornix and conjunctival reconstruction. **Jpn J Ophthalmol 2002;46:346–348** © 2002 Japanese Ophthalmological Society

Key Words: Amniotic membrane transplantation, conjunctival mucosa-associated lymphoid tissue lymphoma.

Introduction

Conjunctival mucosa-associated lymphoid tissue (MALT) lymphoma is a rare, low-grade, non-Hodgkin's B-cell lymphoma.¹ Traditionally, it has been treated

by radiation, chemotherapy, simple surgical excision, cryotherapy, and even observation only. However, simple surgical excision might result in symblepharon when bulbar, fornix, and palpebral conjunctiva are largely involved in the tumor.² Herein, we report our successful management of the large conjunctival defect caused by resection of conjunctival MALT lymphoma. To the best of our knowledge, this is the first report of using amniotic membrane for recon-

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structing the bulbar, fornix, and palpebral conjunctiva in a patient with conjunctival MALT lymphoma.

Case Report

A 28-year-old man, otherwise healthy, presented with redness of the lower conjunctiva of his left eye. A slit-lamp microscopy examination revealed salmon pink tumors on the lower bulbar and palpebral conjunctiva involving the fornix (Figure 1A). While being treated with topical antibiotics and steroids for more than 6 months, the lesion progressively enlarged.

A biopsy of the bulbar conjunctival lesion was performed. Histologically, the lesion was characterized by monomorphous proliferation of small, centrocyte-like cells. Partial plasma cell differentiation was observed. Centrocyte-like tumor cells invaded the ductal epithelium of the adnexal gland and formed a characteristic lymphoepithelial lesion (Figure 1B). In immunohistochemical analysis, tumor cells were

positive for CD20, CD79a, and bcl-2, but negative for CD3, CD5, and cyclin D1. Pathologic diagnosis of low-grade B cell lymphoma of MALT type (non-Hodgkin's lymphoma, marginal zone B-cell lymphoma) was made.

Uncorrected visual acuity was 20/20 OU, and the results of the remainder of the ocular examination were unremarkable. Computed tomographic scans and radiographs of his orbita, brain, chest, abdomen, and pelvis showed no abnormality. The laboratory data were also all negative.

After an informed consent was obtained, extensive resection of the bulbar, palpebral, and fornix conjunctival lesion (1.5 × 1.5 cm ca.) was performed. Human amniotic membrane was processed and preserved as described by Prabhasawat et al³ in Kanazawa University Hospital. The preparation and clinical use of human amniotic membrane was approved by the ethics committee of Kanazawa University Graduate School of Medical Science. The first piece of amniotic

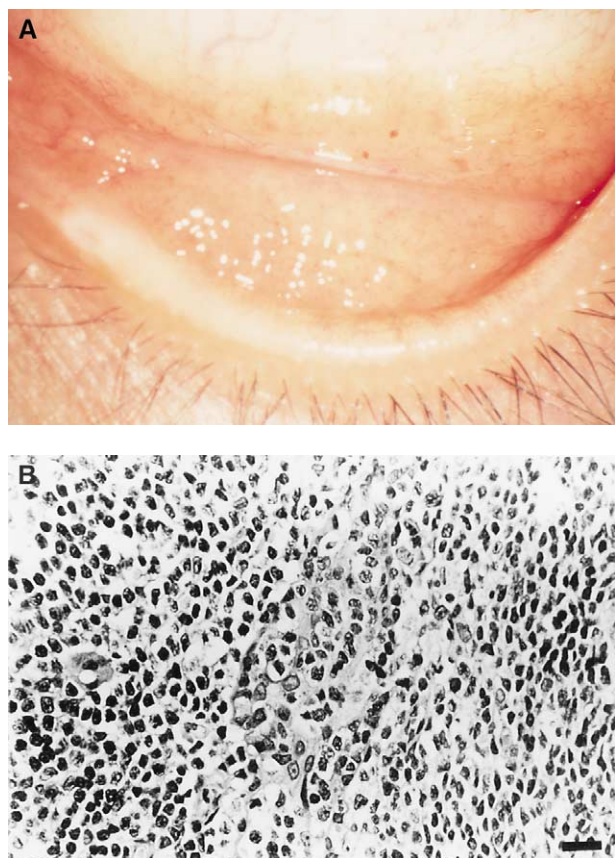


Figure 1. (A) Mucosa-associated lymphoid tissue (MALT) lymphoma in the conjunctiva of the left eye of a 28-year-old Japanese man before surgery. (B) Heavy infiltration of conjunctiva by small lymphoid cells. Lymphoepithelial lesion was observed. Hematoxylin-eosin stain. Bar = 20 μ m.

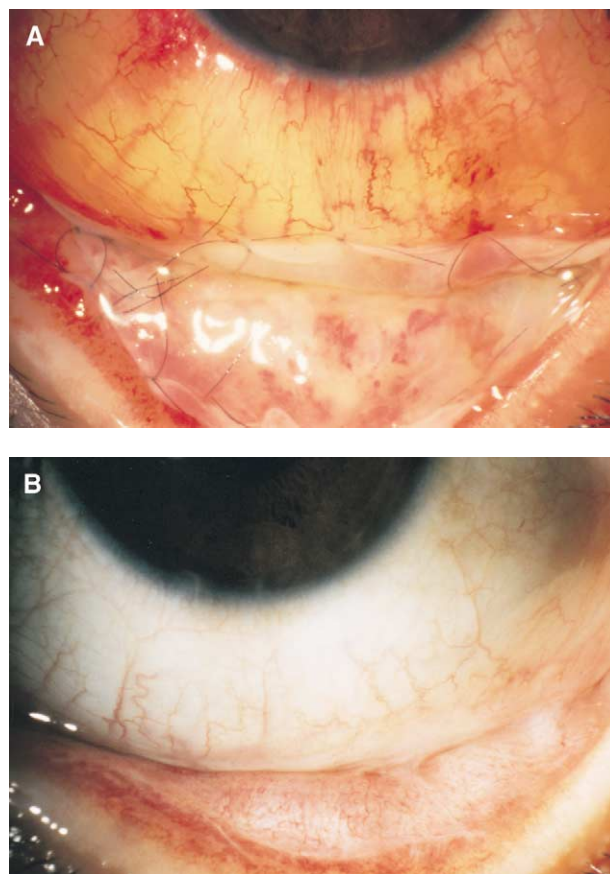


Figure 2. (A) Three days after surgery. Transplanted amniotic membrane covers the conjunctival defect. (B) Three months after surgery. Conjunctiva was completely epithelialized and no recurrence has been noted.

membrane with the stromal side down was secured by interrupted 10-0 nylon to cover the defect of the bulbar conjunctiva. This was followed by suturing the second piece of amniotic membrane with the stromal side down to cover the lower palpebral conjunctival defect in the same manner (Figure 2A). A therapeutic soft contact lens was inserted. Postoperatively, eye-drops of 0.3% ofloxacin and 0.1% betamethasone were applied 4 times daily for 1 month. The margin of the removed tissue was confirmed to be tumor-free postoperatively. Epithelialization over the amniotic membrane was completed within 3 weeks when all sutures were removed. As a result, the redness of the eye disappeared. During the 6 months of follow-up, there was no recurrence nor any postoperative complication, such as graft rejection, symblepharon, or chronic inflammation (Figure 2B). Fluorescein staining was negative and the presence of normal conjunctival phenotype (Goblet cells) was confirmed by impression cytology on the reconstructed conjunctiva.

Discussion

Amniotic membrane transplantation has recently been performed successfully for reconstructing the damaged corneal or conjunctival surfaces.² One procedure is to cover a large conjunctival defect created during the removal of tumors, scar and symblepharon,² and conjunctivochalasis.⁴ Bared sclera and tarsus left by the extensive removal of the conjunc-

tival tumor predisposes symblepharon formation, which can be avoided by using amniotic membrane as a substitute for conjunctival autograft. Amniotic membrane is also known to possess anti-inflammatory and anti-scarring effects, which are desirable for restoring a healthy conjunctival surface.⁵

Herein we demonstrate for the first time that amniotic membrane can be used to cover the large defect on both bulbar and palpebral conjunctiva when such a low-grade malignancy as MALT lymphoma is extensively excised. Long-term follow-up of this patient is needed to establish the efficacy of this procedure. For more malignant tumors, other therapies, including radiation, should be considered as a choice of treatment despite vision-threatening side effects such as cataract and retinopathy.

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