

Surgical Treatment of Limbal Vernal Keratoconjunctivitis by Resection of a Limbal Lesion

Akira Kobayashi*, Atsushi Nagata*,
Yutaka Shirao*, Kazuo Kawasaki*, Taeko Ohta[†],
Yohko Amaya-Ohkura[†] and Akitaka Nonomura[‡]

**Department of Ophthalmology, Kanazawa University
Graduate School of Medical Science, Kanazawa; [†]Department of Ophthalmology,
Tonami General Hospital, Tonami; and [‡]Pathology Section,
Kanazawa University Graduate School of Medical Science, Kanazawa, Japan*

Purpose: To report our experience managing a limbal mass associated with limbal vernal keratoconjunctivitis (VKC) by surgical excision.

Methods: A 16-year-old girl was referred to our hospital with the chief complaints of itching and photophobia in both eyes. She had a 2-year history of gradually enlarging limbal gelatinous masses on the temporal limbus in both eyes, which were diagnosed as limbal papillae of VKC. As the symptoms in her left eye were more severe, surgical resection of the limbal mass in her left eye was performed to relieve mechanical stress on the eyelid, followed by a free conjunctival autograft taken from the supranasal bulbar conjunctiva.

Results: After excision of the mass, ocular inflammation and other symptoms gradually disappeared. At 12-month follow-up, there was no recurrence of the mass. Findings in a histological examination of the excised limbal lesion were consistent with those of limbal papilla of VKC.

Conclusion: In recalcitrant cases of limbal VKC, in which the symptoms are apparently caused by an elevated limbal mass, surgical excision of the limbal mass can be one of the therapeutic modalities, and it may facilitate resolution of the symptoms caused by chronic limbal VKC. **Jpn J Ophthalmol 2002;46:679–681** © 2002 Japanese Ophthalmological Society

Key Words: Surgical treatment, vernal keratoconjunctivitis.

Introduction

Vernal keratoconjunctivitis (VKC) is a seasonally recurrent bilateral inflammation of the conjunctiva, producing itching, tearing, photophobia, and foreign body sensation. Herein, we present our experience managing a limbal mass associated with limbal VKC in a young woman, which was not cured by conventional therapy, but was cured by surgical excision.

Case Report

A 16-year-old Japanese girl was referred to our hospital with the chief complaints of itching and photophobia in both eyes. She had a 2-year history of gradually enlarging limbal gelatinous masses on the temporal limbus in both eyes, which were diagnosed as limbal papillae of VKC. Prior to her visit to our clinic, she had been treated occasionally with artificial tears and corticosteroid at another hospital, with no improvement. Slit-lamp microscopic examination revealed diffuse superficial punctate keratopathy in both eyes and a limbal mass (3 × 4 mm) on the temporal side of each eye (Figures 1A, B). Mild pap-

Received: December 26, 2001

Correspondence and reprint requests to: Akira KOBAYASHI, MD, PhD, Department of Ophthalmology, Kanazawa University Graduate School of Medical Science, 13-1 Takara-machi, Kanazawa, Ishikawa Prefecture 920-8641, Japan

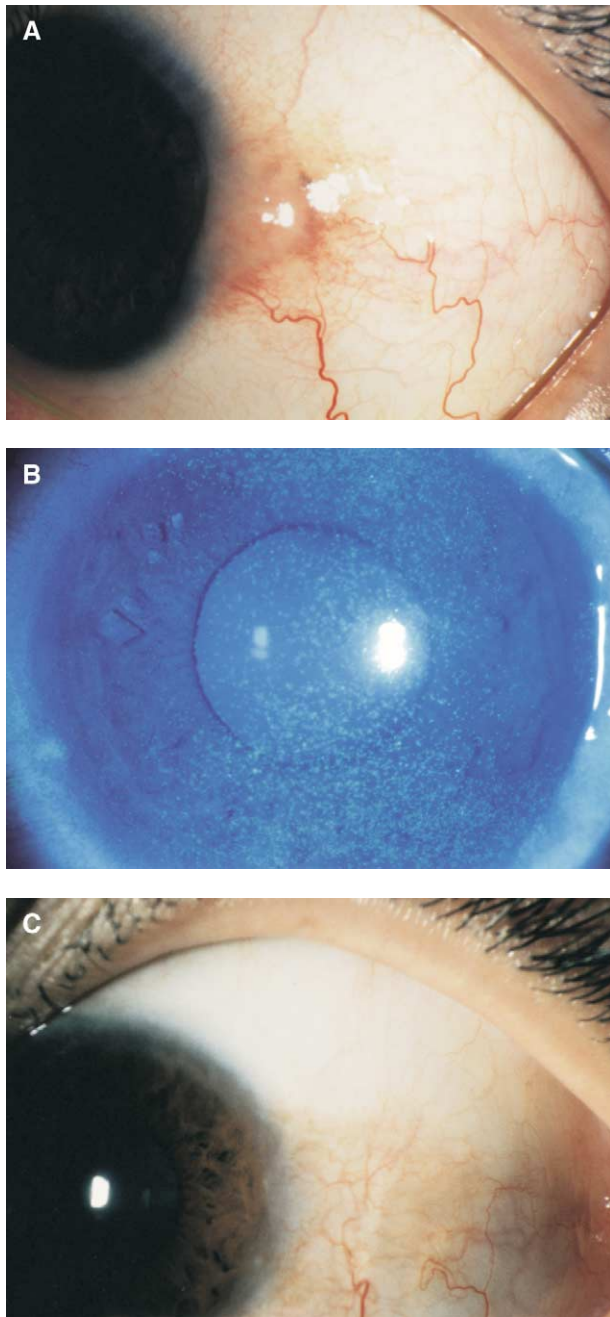


Figure 1. (A) Anterior segment photograph of the left eye of a 16-year-old girl with complaints of itching and photophobia at her initial visit. A gelatinous limbal mass, which is common in vernal keratoconjunctivitis, was observed. (B) Anterior segment photograph of the left eye after fluorescein staining. Diffuse superficial punctate keratopathy was seen. (C) Six months after surgical resection of the limbal mass in the left eye. No recurrence was observed.

illary proliferation was observed bilaterally on the superior tarsal conjunctiva. Schirmer's test showed no evidence of dry eye. Her best-corrected visual acuity was 20/20 in the right eye and 20/30 in the left eye. Her past medical history was marked by chronic thyroiditis, which had been followed-up without medication. Her family history was remarkable only for juvenile rheumatoid arthritis in her mother. There was no personal or family history of atopic dermatitis or asthma. Serum antibody tests to environmental allergens such as house dust and mites were positive.

Her bilateral diffuse superficial punctate keratopathy was slightly reduced by our initial therapy, which included topical 0.1% betamethasone and Tranilast four times daily, and topical hyaluronate sodium every 2 hours. However, the patient's discomfort during blink persisted, probably due to the pedunculated limbal papilla and superficial punctate keratopathy. As the symptoms in her left eye were more severe, resection of the limbal mass in her left eye was performed to relieve mechanical stress on the eyelid. Written informed consent was obtained from the patient and her parents. Anesthesia was achieved by applying 2% lidocaine topically. The limbal mass, along with the surrounding conjunctiva (approximately 5 × 5 mm in size), was excised, and the bare sclera was covered by a free conjunctival autograft taken from the supranasal bulbar conjunctiva. The graft was secured by interrupted 10-0 nylon. Postoperatively, 0.3% ofloxacin and 0.1% betamethasone were applied four times daily for 1 month. After excision of the mass, ocular inflammation and other symptoms disappeared gradually. Mild papillary proliferation of the superior tarsal conjunctiva was reduced slightly. At 12 month follow-up, there was no recurrence of the mass (Figure 1C). Postoperatively, corrected visual acuity in the left eye improved from 20/30 to 20/20, with complete resolution of superficial punctate keratopathy. To avoid recurrence of inflammation, 0.1% betamethasone and Tranilast eyedrops three times daily were prescribed. Similar surgical excision of the limbal mass in her right eye is under consideration, as the patient and parents were satisfied with the outcome of surgery in her left eye and will agree to a similar procedure for the right eye.

Histological examination of the excised limbal lesion revealed nodular stromal infiltration of inflammatory cells, including plasma cells, lymphocytes, macrophages, and numerous eosinophils (Figure 2). Many eosinophils and plasma cells were also seen among the conjunctival epithelial cells. Collectively,

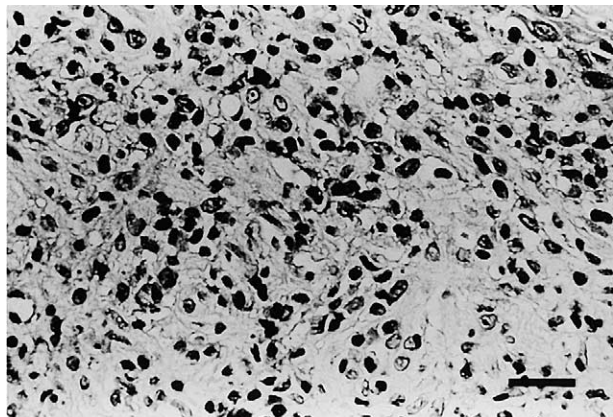


Figure 2. Microscopic photograph of the massive lesion. Numerous eosinophils, plasma cells, and fibroblastic proliferation are observed, which is consistent with findings in limbal vernal keratoconjunctivitis papilla (hematoxylin and eosin, bar = 10 μ m).

these findings confirmed that the limbal mass was consistent with a limbal papilla of VKC.

Discussion

Most cases of limbal gelatinous mass in VKC resolve spontaneously following topical treatment with corticosteroids or cyclosporine A.¹ In recalcitrant cases of VKC, cryosurgery of the bulbar conjunctival² or excision of the tarsal conjunctival papillae³ have been reported to be effective in reducing the morbidity. In this report, we demonstrated a case of VKC with limbal papilla, which was not cured by conventional ther-

apy including topical corticosteroids, but was cured by surgical excision of the lesion. Complete resolution of superficial punctate keratopathy was achieved probably due to the resection of the limbal lesion and slightly reduced mild papillary proliferation. Free conjunctival autografting was performed in this case to avoid bared sclera, which might induce additional inflammation, but this procedure might not always be necessary.

Systemic use of corticosteroid was initially considered, however, the patient's parents opposed its use for fear of possible side effects. Also, topical cyclosporin A could not be used because of its unavailability in our hospital. Aggressive surgical intervention should not be indicated in most patients with VKC because resolution of VKC may be observed following treatment with various therapeutic modalities. However, in recalcitrant cases with limbal VKC, in which the symptoms are apparently caused by an elevated limbal mass, surgical excision of the limbal mass can be one of the therapeutic options. As shown in this report, surgical excision of the limbal mass of VKC may facilitate the resolution of symptoms caused by chronic limbal VKC.

References

1. Bleik JH, Tabbara KF. Topical cyclosporine in vernal keratoconjunctivitis. *Ophthalmology* 1991;98:1679-1684.
2. Abiose A, Merz M. Cryosurgery in the management of vernal keratoconjunctivitis. *Ann Ophthalmol* 1983;15:744-747.
3. Fujishima H, Fukagawa K, Satake Y, et al. Combined medical and surgical treatment of severe vernal keratoconjunctivitis. *Jpn J Ophthalmol* 2000;44:511-515.