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SHORT COMMUNICATION

Unilateral vernal keratoconjunctivitis: A case report

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PURPOSE. *A rare case of unilateral vernal keratoconjunctivitis is presented.*
METHODS. *A 5-year-old boy had itching, foreign body sensation, redness, and ptosis in his left eye. Impression cytology specimens were taken from both upper eyelid tarsal conjunctiva.*
RESULTS. *On slit-lamp biomicroscopy, unilateral cobblestone papillae and a shield ulcer were found in the left eye. On impression cytology examination, there was a significant increase in inflammation, presence of a honeycomb pattern, plasma cells, and mucus strands in the upper tarsal conjunctiva of the specimens.*
CONCLUSIONS. *Giant papillary conjunctivitis must be considered in differential diagnosis of unilateral vernal conjunctivitis. Impression cytology method may be combined with the clinical findings in vernal keratoconjunctivitis diagnosis. (Eur J Ophthalmol 2007; 17: 973-5)*

KEY WORDS. *Impression cytology, Unilateral, Vernal keratoconjunctivitis*

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INTRODUCTION

Vernal keratoconjunctivitis (VKC) is an ocular disease affecting mainly boys in the first decade of life. Diagnosis is based on typical clinical signs and symptoms, including intense itching, photophobia, sticky mucous discharge, giant papillae on the upper tarsal conjunctiva or at the limbus, superficial keratopathy, and corneal shield ulcers (1). The disease is usually bilateral, but may occasionally be asymmetric (2). Although we report a case of unilateral VKC, it is rare.

Case report

A 5-year-old boy had itching, foreign body sensation, redness, and ptosis in his left eye for 1 year. Visual acuity in the right and left eyes were 20/20 and 20/20, respectively. Slit-lamp biomicroscopy revealed a moderately injected bulbar conjunctiva of the left eye with moderately thick ropy mucus and cobblestone papillae in the left upper palpebral conjunctiva. He was found to have a superior 3 × 2 mm shield corneal ulcer. No cells or flare were noted in the anterior chamber. A thorough examination, including double eversion of the left palpebral conjunctiva, failed to reveal any foreign body. A lid examination showed no signs of blepharitis. The boy did not wear contact lenses and had no history of atopy. The upper lid did not spontaneously evert on stretching. Findings were also normal on ocular examination of the right eye, and there was no evidence of any papillary reaction (Fig. 1).
Impression cytology specimens were taken from both upper eyelid tarsal conjunctiva. The contralateral eye in a patient was asymptomatic and had normal-appearing conjunctiva on slit-lamp examination. Impression cytology specimens were collected with topical proparacaine 0.5%. Cellulose acetate millipore filter paper was cut in

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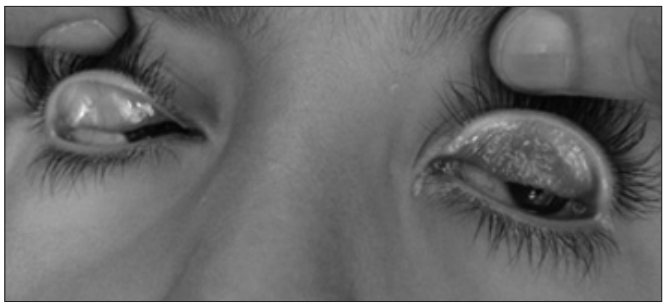

Fig. 1 - *Simultaneous eversion of the upper lids. The right eye palpebral conjunctiva is devoid of papillae and looks smooth with no thickening. In the superior palpebral conjunctiva of the left eye, note the giant papillae (cobblestones).*

pieces approximately 5 × 5 mm. The upper eyelid was everted, and the filter paper was placed on the middle of the tarsal conjunctiva with the use of forceps. Each filter paper specimen was then placed in separate sample wells containing fixative solution composed of glacial acetic acid, 37% formaldehyde, and 70% ethyl alcohol (1:1:20 volume ratio). Fixation of the specimens typically occurs in less than 10 minutes. The specimens were then stained described by Tseng (3).

The impression cytology specimens were evaluated by light microscopy for goblet cell density, changes in epithelial cell morphology, inflammation, the presence of a honeycomb pattern, and mucous strands. This suggests that the goblet cells and epithelial cells are minimally affected by the formation of VKC or the associated inflammation. There was a significant increase in inflammation, the presence of a honeycomb pattern, plasma cells, and mucous strands in the upper tarsal conjunctiva of the VKC specimens (Fig. 2, A and B). The other eye conjunctival impression cytology specimens were normal.

Topical antihistamines, mast cell stabilizers, mucolytic, and mild steroids were prescribed. When healing was not seen in a 1-month period, cyclosporine was added. The case has been followed for 3 months. The case report was performed according to the guidelines of the Declaration of Helsinki.

DISCUSSION

VKC is an allergic eye disease that especially affects young boys. The most common symptoms are itching, photophobia, burning, and tearing. The most common signs are giant papillae, superficial keratitis, and conjunctival hyperemia (4).

The disease is usually bilateral. However, unilateral VKC is rare. Bonini et al (5) reported that it was bilateral in 98% of 195 patients with VKC. Leonardi et al (6) stated that 96.7% of 406 cases of VKC were bilateral in their demographic and epidemiologic study.

The differential diagnosis of unilateral giant papillae includes giant papillary conjunctivitis due to retained foreign body and exposed sutures, contact lens wear, unilateral meibomian gland dysfunction, surgery, filtering blebs, band keratopathy, and floppy eyelid syndrome (2). None of those conditions was present in our patient, and appropriate imaging did not reveal any foreign body embedded in the lid.

VKC is diagnosed according to the clinical findings. Impression cytology, which is an easy, simple, and noninvasive method, can be applied on the cytologic investigation of ocular surface changes. The alterations in the conjunctival epithelium during the course of VKC were examined by conjunctival impression cytology (7). Aragona et al (8) using impression cytology demonstrated that all

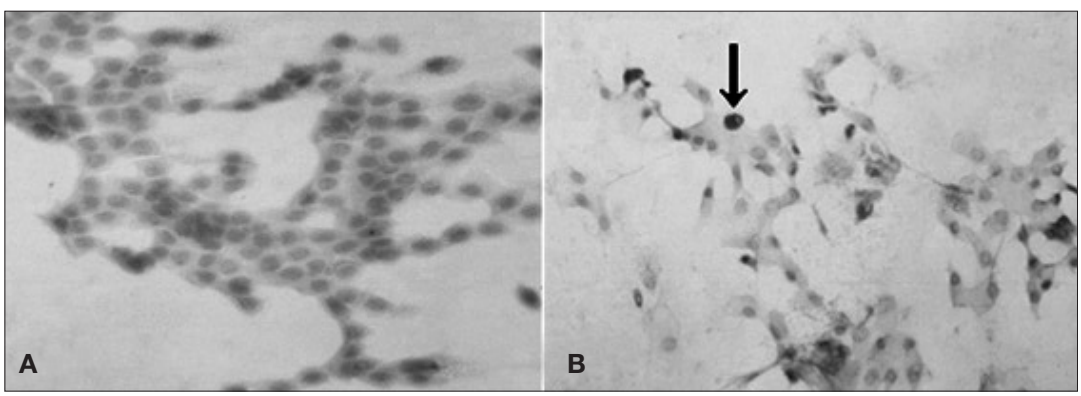

Fig. 2 - A) *Impression cytology specimen from a patient with vernal keratoconjunctivitis demonstrates honeycomb pattern (PAS-Hemalun, magnification ×164).* **B)** *Impression cytology specimen from a patient with vernal keratoconjunctivitis demonstrates mucous strands and plasma cell (PAS-Hemalun, magnification ×82).*

cytologic parameters were significantly modified in patients with VKC; the earliest alterations were found in the distribution of goblet cells, in the intercellular junctions, in the chromatin morphology, and in the degree of keratinization. The inflammatory cells included predominantly polymorphonuclear leukocytes with a few eosinophils and mast cells (9). In our case, there was unilateral itching, foreign body sensation, redness, ptosis, cobblestone papillae, and a shield ulcer. In impression cytology examination, there was a significant increase in inflammation, presence of a honeycomb pattern, plasma cells, and mucous strands in the upper tarsal conjunctiva of the specimens.

Topical antihistamines, mast cell stabilizers, mucolytic, cyclosporine, and mild steroids can be used in the treatment of vernal conjunctivitis. BenEzra et al (10) first used topical cyclosporine in the treatment of resistant VKC. Avunduk et al (7) reported that topical cyclosporine treatment is a very effective alternative in severe VKC cases on clinical grounds. In a different study, Bleik and Tabbara (11) randomly divided 20 patients with severe VKC into treatment and placebo groups. The symptoms improved significantly following therapy with topical cyclosporine during a 6-week treatment period. Topical antihistaminic, mast cell stabilizers, and mucolytic treatments were started in our case at an early period. When clinical healing was not seen, cyclosporine was added. Significant improvement in clinical findings was detected after that treatment.

In conclusion, VKC can occasionally present unilaterally. Giant papillary conjunctivitis must be considered in differential diagnosis of unilateral vernal conjunctivitis. Furthermore, impression cytology, which is an easy, simple, and noninvasive method, can be combined with the clinical findings in VKC diagnosis.

Proprietary interest: None.

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