

## A rare case of asymmetrical vernal keratoconjunctivitis

Shikha Pawaiya<sup>1</sup>, Rashmeet Kaur Arora<sup>2\*</sup>, Akshita Chawala<sup>3</sup>, Darshani Marya<sup>4</sup>, Neel Shah<sup>5</sup>, Sarita Agarwal<sup>6</sup>

<sup>1</sup>Assistant Professor, <sup>2-5</sup>Postgraduate Residents, <sup>6</sup>Professor and HOD, Dept. of Ophthalmology, Santosh Medical College and Hospital, Ghaziabad, Uttar Pradesh, India

**\*Corresponding Author: Rashmeet Kaur Arora**

Email: rashmeet.0702@gmail.com

### Abstract

A 12 years old boy presented in our OPD complaints of itching and redness in right eye since 2 months. There was associated history of copious mucous discharge in both eyes. On slit-lamp bio microscopic examination, right eye revealed two giant cobblestone papillae along with multiple small papillae while in the left eye small papillae were present. Right eye also showed Punctuate epithelial keratitis with no signs of corneal involvement in left eye. There was no history of use of contact lenses or suturing to the eye, hence, deviating from the diagnosis of giant papillary conjunctivitis. He was treated with oral and topical anti allergic medications. Cobblestone papillae persisted even after maximal tolerated dose. Two doses of Supratarsal injection of 20 mg Triamcetonolone Acetonide (Corticosteroid) were given in right eye one month apart. We observed complete recovery from allergic symptoms. Cobblestone papillae and punctuate epithelial erosions regressed completely. Patient was asymptomatic after two months, i.e. no recurrence. In this case, we indicate the use of Supratarsal corticosteroid injection in recalcitrant vernal kerato-conjunctivitis. Promising results were seen without adjuvant topical or oral medications.

**Keywords:** Asymmetrical VKC, Supratarsal Triamcinolone Acetonide injection, Recalcitrant VKC, Cobblestone papillae.

### Introduction

Vernal kerato-conjunctivitis (VKC) is a chronic inflammatory conjunctival condition with high predisposition to atopy. Usually, involvement is bilateral and symmetrical.<sup>1</sup> However, unilateral asymmetrical involvement have been reported rarely.<sup>1-3</sup>

The most common finding observed in cases of VKC are giant papillae also known as 'cobblestone' papillae at the upper tarsal conjunctiva. They are generally, of the same size and uniformly spread over palpebral conjunctiva. As a first line of treatment, topical medications (i.e. antihistamines, mast cell stabilisers, corticosteroids, cyclosporine A and tacrolimus) and / or oral medications (i.e. antihistamines and corticosteroids) are used to reduce papillae. Many cases have been reported with successful treatment with the use of immunotherapy for recalcitrant cases.<sup>1</sup> Failure to respond to the above mentioned medications, the need for newer and more effective treatment was felt. Supratarsal corticosteroid injection has been used with partial improvement but possible recurrence. We, hereby, report a case of paediatric patient with asymmetrical VKC. After failure of topical and oral medication, he was successfully treated with two doses of Supratarsal corticosteroid injection.

### Case Report

A 12 years old boy presented to Santosh Hospital in Ophthalmology OPD with history of itching, redness and foreign body sensation in right eye since two months. There was associated history of copious mucoid discharge in right eye. His best corrected visual acuity was 6/9 and 6/6 in the right eye and the left eye, respectively. Slit-lamp bio microscopy of the right eye revealed redness on bulbar conjunctival, mucous discharge and two giant (cobblestone) papillae at the upper tarsal conjunctiva with multiple small papillae. There was superficial punctate keratitis (Fig. 1). Left eye showed a mild papillary reaction without corneal

involvement. He had no history of wearing contact lenses, any previous ocular surgery or having an ocular prosthesis.



**Fig. 1:** Photograph of eyelids with eversion showing cobblestone papillae in the right eye.

### Investigation

Since the papillae were relatively large only two in number and recalcitrant to all medications, incisional biopsy of the tarsal conjunctiva was undertaken to rule out a conjunctival tumour. The pathological examination revealed fibro-vascular tissue with infiltration of eosinophils and other chronic inflammatory cells.

### Treatment

Both eyes were treated with eye drops four times a day (topical mast cell stabiliser - Sodium Cromoglycate) for two months with additional instillation of a potent topical corticosteroid (Prednisolone Acetate 1%) four times a day. The signs and symptoms improved markedly in left eye; however, the cobblestone papillae and punctate corneal erosion (including ocular itching in the right eye) persisted.

The frequency of topical prednisolone acetate was increased to six times a day. The symptoms, however, worsened.

An injection of Supratarasal Triamcinolone Acetonide 20 mg was given in the right eye. Supratarasal injections in small children are difficult to administer without sedation and thus the procedure was done under sedation and local anaesthesia in this patient. A significant reduction in the size of cobblestone papillae were seen after the injection was given.

### Outcome and Follow-Up

The patient was called for follow-up after two months. There was complete alleviation of cobblestone papillae and punctate epithelial erosion (including allergic symptoms). There was no further recurrence during two months of follow-up. The intraocular pressures—measured by Goldmann tonometry—was within normal range; and no other ocular side effects were noted. After the Supratarasal Corticosteroid injection, only antibiotics without any anti-allergic eye-drops were prescribed for next one week.

### Discussion

VKC is known to have bilateral and symmetrical involvement. Since, very few cases have been reported with asymmetrical involvement, giant papillary conjunctivitis (GPC) should be excluded as first differential.<sup>4</sup> GPC is not an allergic condition; it is more commonly a consequence of repetitive micro-trauma or irritative event(s) (i.e. from sutures, contact lenses or ocular prostheses).<sup>4,5</sup> VKC was the most common cause in our patient owing to the extremely large, giant (cobblestone-like) papillae and significant corneal involvement with no history of irritative stimuli.

Conjunctival tumours can present as allergic conjunctivitis. Giant papillae can be mis-diagnosed as conjunctival lymphoma.<sup>6,7</sup> Conjunctival tumour should be ruled out if the condition is unresponsive to anti-allergic drugs and papillae are relatively large. As the result of incisional biopsy was negative, allergic conjunctivitis was approved as the diagnosis.

Pharmacological therapy is the first line treatment of all types of allergic conjunctivitis. Recurrence has been commonly noticed when the medications are withdrawn.<sup>1,4</sup> Surgical management (Excision of the papilla or Cryotherapy) is considered in severe recalcitrant cases but, this often gives only a transient response,<sup>8-10</sup> When combined with amniotic membrane transplantation, better results have been reported.<sup>11</sup>

Supratarasal corticosteroid injection has been found to be an effective and relatively safe treatment for refractory VKC.<sup>12-15</sup> Low risk of increased IOP and equal effectiveness is observed with either short-acting dexamethasone or intermediate-acting Triamcinolone Acetonide.<sup>12,13</sup> Many studies supporting this approach have reported a  $\geq 50\%$  decrease in papillae size along with complete regression of a shield ulcer.<sup>12,15</sup> Repeated injections might be required when there is recurrence of disease.<sup>15</sup> In this patient, after two doses of injection, there was complete alleviation of papillae and the corneal erosion was totally healed. Most anti-allergic drugs were stopped after the two doses of injection in our

case. Furthermore, most studies proposed partial response and recurrence after injection.<sup>13-15</sup> Complete recovery was observed in present case.

To conclude, Supratarasal Corticosteroid injection has shown to be effective for refractory VKC. Significant improvement is observed without any long-term medications.

### Source of funding

None.

### Conflict of interest

None.

### References

1. Kumar S. Vernal keratoconjunctivitis: a major review. *Acta Ophthalmol* 2009;87:133–47.
2. Keklikci U, Soker SI, Soker Cakmak S et al. Unilateral vernal keratoconjunctivitis: a case report. *Eur J Ophthalmol* 2007;17:973–5.
3. Awwad ST, Najjar DM, Arlette A. Vernal keratoconjunctivitis presenting unilaterally. *J Pediatr Ophthalmol Strabismus* 2006;43:179–80.
4. Friedlaender MH. Ocular allergy. *Curr Opin Allergy Clin Immunol* 2011;11:477–82.
5. La Rosa M, Lionetti E, Reibaldi M et al. Allergic conjunctivitis: a comprehensive review of the literature. *Ital J Pediatr* 2013;39:18.
6. Lee DH, Sohn HW, Park SH et al. Bilateral conjunctival mucosa-associated lymphoid tissue lymphoma misdiagnosed as allergic conjunctivitis. *Cornea* 2001;20:427–9.
7. Strauss EC, Warren JF, Margolis TP. Diagnosis of conjunctival B-cell lymphoma by polymerase chain reaction heteroduplex analysis. *Am J Ophthalmol* 2003;136:207–9.
8. Diallo JS. Tropical endemic limboconjunctivitis. *Rev Int Trach Pathol Ocul Trop Subtrop* 1976;53:71–80.
9. Khan MD, Kundi N, Saeed N. A study of 530 cases of vernal conjunctivitis from the North Western Frontier Province of Pakistan. *Pak J Ophthalmol* 1986;2:111–14.
10. Resnikoff S, Cornand G, Filliard G. Limbal vernal keratoconjunctivitis in the tropics. *Rev Int Trach Pathol Ocul Trop Subtrop Sante Publique* 1988;65:21–72.
11. Guo P, Kheirkhah A, Zhou WW. Surgical resection and amniotic membrane transplantation for treatment of refractory giant papillae in vernal keratoconjunctivitis. *Cornea* 2013;32:816–20.
12. Saini JS, Gupta A, Pandey SK. Efficacy of supratarasal dexamethasone versus triamcinolone injection in recalcitrant vernal keratoconjunctivitis. *Acta Ophthalmol Scand* 1999;77:515–18.
13. Holsclaw DS, Whitcher JP, Wong IG. Supratarasal injection of corticosteroid in the treatment of refractory vernal keratoconjunctivitis. *Am J Ophthalmol* 1996;121:243–9.
14. Singh S, Pal V, Dhull CS. Supratarasal injection of corticosteroids in the treatment of refractory vernal keratoconjunctivitis. *Indian J Ophthalmol* 2001;49:241–5.
15. Zaouali S, Kahloun R, Attia S. Supratarasal injection of triamcinolone acetonide and childhood allergic keratoconjunctivitis. *Int Ophthalmol* 2012;32:99–106.