International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Ayurvedic Management of Unilateral Vernal Keratoconjunctivitis: A Case Report

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ABSTRACT

Background: Vernal Keratoconjunctivitis is a chronic allergic eye disorder commonly seen in children, particularly in warm and dry climatic regions. In Ayurveda, its clinical features resemble those of *Kaphaja Abhishyanda*, which occurs due to the vitiation of *Kapha* and *Pitta* Dosha. This imbalance leads to ocular inflammation, redness, irritation, and excessive discharge.

Case: A 13-year-old female patient presented with unilateral Vernal Keratoconjunctivitis involving the left eye, with recurrent episodes despite previous treatment with topical corticosteroids. Initial examination revealed conjunctival congestion and superficial corneal vascularization, while the left-eye visual acuity (LE VA) was recorded as LogMAR 1.30.

Interventions/Outcomes: A comprehensive Ayurvedic treatment protocol was administered through three inpatient treatment courses over a period of 15 months, including internal medications, topical ocular preparations, and specialized ophthalmic procedures. Marked improvement was observed in symptoms such as redness, itching, and photophobia, along with regression of corneal vascularization. The left-eye visual acuity improved from LogMAR 1.30 to 0.47, and the patient remained free from steroid therapy during the 6-month follow-up period. No adverse effects were reported.

Conclusion: This case signifies that Ayurvedic interventions can address VKC symptoms along with minimizing corticosteroid dependency. Further clinical trials are necessary to establish Ayurvedic treatments as standard therapy for allergic conjunctivitis.

KEYWORDS: *Abhishyanda*, Vernal Keratoconjunctivitis, *Kriyakalpa*, Spring catarrh, Case report

1. INTRODUCTION

Vernal keratoconjunctivitis (VKC) is an external atopic eye disease that peaks in summer and spring but may occur year-round;[i] it shows a male predominance (2.2:1) with nearly half of cases in children aged 5–10 years.[ii] If untreated, VKC can lead to keratoconus, corneal ulcers, corneal neovascularization, and scarring,[iii] while steroid-based symptomatic therapy risks cataract and glaucoma.[iv] Core manifestations include ocular hyperemia, intense itching, foreign-body sensation, photophobia, lacrimation, and pain due to corneal involvement or shield ulcers.[v] Although type 1 hypersensitivity with IgE and Th2 responses is implicated, ~50% of patients lack allergic sensitization.[vi] In Ayurveda, VKC correlates with *Kaphaja Abhishyanda* (*Kapha–Pitta* vitiation); childhood and *Vasanta Ritu* (spring season) are *Kapha*-predominant and favor exacerbations.[vii] This report presents a steroid-sparing, multimodal Ayurvedic approach — *Kriyakalpa* (ocular therapy), *Nasya* (Nasal Installation), and *Jaloukavacharana* (Leech Therapy)—for unilateral pediatric VKC.

2. CASE PRESENTATION:

Patient information & history

A 13-year-old girl residing in Jamnagar presented with a four-year history of left-eye (LE) itching, redness, excessive tearing, photophobia, and intermittent blurring of vision, accompanied by light-sensitive throbbing headache. Symptoms began in 2020 as mild, untreated episodes of LE itching and redness and became more frequent and intense, particularly during hot, dry weather. In 2023, she was diagnosed elsewhere with chronic conjunctivitis and received loteprednol etabonate 0.5% in short courses (3–4 courses/year, tapered), with temporary relief and recurrent symptoms after cessation. Through early 2023, episodes recurred approximately every two weeks, with persistent tearing, photophobia, and foreign-body sensation. In 2025, she attended the Ayurveda outpatient department with progressive visual complaints, severe ocular discomfort, and photophobia in the LE.

Environmental, seasonal and behavioural context:

The patient resided in an urban environment with significant exposure to traffic-related dust, air pollution, and classroom chalk dust, along with frequent outdoor activities. Symptoms were aggravated during hot, dry summer conditions and improved during cooler, less dusty periods. Caregivers also noted habitual eye rubbing during symptomatic episodes, while no exposure to household pets was reported.

Atopic and medical history:

The family history was notable for paternal dust allergy. The patient denied asthma, allergic rhinitis, eczema/atopic dermatitis, systemic illnesses, prior ocular trauma, and contact lens use. Prior non-Ayurvedic ophthalmic therapy included loteprednol; use of antihistamine/mast-cell stabilizer drops or lubricants was not documented in available records. No steroid-related adverse events were recorded.

Clinical Examination

The patient had no systemic illnesses on examination. Her vital parameters were Blood Pressure of 120/80 mmHg and a body temperature of 97.4°F. IgE serum levels are (34.20UI/ml). The Differential Leucocyte Count showed Neutrophils (54%) Lymphocytes (38%), Eosinophil (2%) Basophils (0%), and Monocyte (0%). A comprehensive ophthalmic evaluation revealed normal findings in the right eye (RE) and corneal neovascularization, corneal opacity and subconjunctival congestion in palpebral and bulbar conjunctiva with continuous watery discharge in LE. Visual acuity assessment demonstrated an unaided distant visual acuity (DVA) LogMAR 0 in the RE and LogMAR 1.30 in the LE. Best Corrected Visual Acuity (BCVA) and pinhole examination showed no improvement in the LE.

Ayurvedic Clinical Assessment *Dasavidha Pareeksha* (tenfold Ayurvedic examination), revealed the patient was *Vata-Kapha Prakriti* (body constitution), *Pitta-Kapha Vikriti* (pathological involvement). Predominant *Dosha* (bodily humor) involvement was *Rakta* (blood) and *Mamsa Dhathu* (muscular tissue). *Kaphaja Abhishyanda* (Vernal Keratoconjunctivits), an ocular condition described in Ayurveda with symptoms of excessive secretions, itching, redness, and heaviness of the eyes. *Kapha* related disorders are more prevalent in *Vasanta Ritu* and childhood, explains the patient's seasonal exacerbation of symptoms. Chronicity and progressive symptoms like *Akshi Raga* (congestion), *Kandu* (itching), *Sroto-Muhurmuhur* (excessive discharge), and *Shopha* (conjunctival swelling in eye suggests *Kapha* and *Pitta Dosha* involvement. Based on which Ayurvedic treatment protocol *Deepana* (metabolic stimulation), *Amapachana* (detoxification), *Rakta Shodhana* (blood purification), and *Virechana* (purgation) were planned. Timeline of Events The progression of symptoms and treatment interventions documented in Table 1:

Table 1: Consolidated dates, stay, dosing and clinical measurements

Date	Internal Medicine	External Medicine (Dose /Session details)	Clinical measurements
12- 03-2025	Baseline intervention: *Guduchyadi kashayam*/15 mL PO BD (warm water); *Patolakaturohinyadi kashayam*/15 mL PO BD (warm water); *Vilwadi gulika*/1 tab PO BD;	*Netramrutam* 1 drop (FN)	VA (LE) LogMAR 1.30; IOP 13 mmHg; severe congestion, itching, redness, photophobia, watering, superficial vascularization
15-03-2025 – 28-03-2025	baseline; + *Virechanam*: *Nimbamruthadi eranḍatailam*/15 mL (hot water)	*Netramrutam* 1 *drop* (FN); *Nasyam (Anu tailam*) 2 drops (FN); *Netraseka* (*kashyam)*50 mL (AN); *Jaloukavacharana* 1 leech (AN)	VA (LE) LogMAR 1.17; IOP 14 mmHg; congestion/redness persisted; watering/itching reduced
10-04-2025 – 18-04-2025	baseline; + *Virechanam*: *Nimbamruthadi eranḍatailam*/15 mL (hot water)	same-(*Nasya*/*Netraseka* /*Jaloukavacharana*; *Netramrutam*)	VA (LE) LogMAR 1.07; IOP 15 mmHg; photophobia/watering/itching reduced
07-10-2025-13-10-2025	baseline;-+ *Nimbamruthadi eranḍatailam*; + *Avipathi chooram*/5g (hot water)	same-(*Nasya*/*Netraseka* /*Jaloukavacharana*; *Netramrutam*)	VA (LE) LogMAR 0.47; IOP 14 mmHg; redness persisted; other symptoms reduced
14-10-2025	___	___	VA (LE) LogMAR 0.47; IOP 16 mmHg; “no remission”

Diagnostic Assessment

VKC in the LE was diagnosed based on age, symptom pattern (itching, tearing, photophobia), and slit-lamp findings (conjunctival congestion, superficial corneal vascularization, corneal haze/opacity) with reduced visual acuity; severity was documented using the[viii] Bonini VKC severity scale—baseline Grade 3 (severe)→Grade 0 after the third visit, and LE visual acuity changed from LogMAR 1.30→0.47. Given prior loteprednol exposure, IOP was measured and monitored. Baseline (BT): RE 19 mmHg; LE 13 mmHg (method: *Goldmann/non-contact+). Follow-up (AT): IOP was checked at subsequent visits and found to be with in normal limits. No steroid-induced ocular hypertension/glaucoma was recorded in the note reviewed. Differential diagnosis is given in Table 2.

Table 2: with conditions, primary reasons and opposing diagnosis

Condition	Primary reason(s) for conclusion	Findings Opposing the diagnosis
Atopic keratoconjunctivitis (AKC)	Chronic allergic conjunctivitis phenotype; unilateral symptoms prompted consideration.	Age 13 (AKC typically later teens/adulthood); unilateral presentation; no periocular eczema or blepharitis.
Seasonal/Perennial allergic conjunctivitis (SAC/PAC)	Allergic symptoms and seasonality overlap with VKC	Corneal involvement present (documented neovascularization and staining), atypical for uncomplicated SAC/PAC.
Herpetic keratopathy	Classically unilateral; can mimic allergic symptoms.	No history suggestive of HSV in available records.

Treatment plan and rationale

Treatment designed to address acute inflammation and underlying *Dosha* imbalance. With *KaphaPitta* predominance, the primary therapeutic goals were: *Amapachana* and *Deepana* to eliminate accumulated inflammatory metabolites. Followed by *Sroto-Shodhana* (clearing of obstructed channels) to restore tear film stability *Rakta Shodhana* to reduce congestion and improve circulation. Then *Virechana*, to regulate *Pitta* and *Kapha*. *Kriyakalpa* provides ocular detoxification and rejuvenation. The patient underwent three inpatient treatment courses with internal medications, external and ophthalmic therapies, over 15 months. The oral medications included *Guduchyadi Kashayam*, *Patolakaturohinyadi Kashayam, Vilwadi Gulika,* and *Avipathi Choornam* possess anti-inflammatory, immunomodulatory, and detoxifying properties. The external therapies included *Netraseka* (ophthalmic wash), *Aschyotana* (eye J*aloukavacharana*, and *Nasyam.*

Treatments

Formulations with documented anti-inflammatory, immunomodulatory, and detoxifying properties were selected. Internal medicines and external therapies are in Table 3 and 4.

Table 3: Internal medications on three visits

Courses of Treatments	Medication/Batch	Dose/Duration (Days)
1st course	*Guduchyadi Kashayam*/Freshly prepared	**40 ml/10**
	Patolakaturohinyadi Kashayam/Freshly prepared	40 ml/10
	Vilwadi Gulika	1 tablet/10
	Nimbamruthadi erandatailam	15ml/1
2nd course	*Guduchyadi Kashayam*/Freshly prepared	40 ml/10
	Patolakaturohinyadi Kashayam/Freshly prepared	40 ml/10

	Vilwadi Gulika	1 tablet/10
	Nimbamruthadi erandatailam	15ml/1
3rd course	*Guduchyadi Kashayam*/Freshly prepared	40 ml/10
	Patolakaturohinyadi Kashayam/Freshly prepared	40 ml/10
	Vilwadi Gulika	1 tablet/10
	Avipathi Choornam	1 teaspoon/5

Table 4: External Therapies on three visits

Courses of Treatments	Treatment	Batch /Dose/Frequency/Technique	Duration (Days)
1st course	*Netraseka*	Fresh decoction 50 mL; poured from ~2 *angula* at *kaneenika sandhi;* collected at 12 *apanga sandhi;* ×7 reps; AM	12
	Nasyam	*Anu tailam* (ANXS-3) 2 drops, both nostrils; AM	5
	Jaloukavacharana	Active freshwater leech; bite left upper eyelid; blood draw 35 min; honey smear + 5 1 bandage	1
	Aschyotana	*Netramritam* (NUXS-10) 2 drops at *kaneenika sandhi* (~2 *angula*); AM	12
2nd course	*Netraseka*	Fresh decoction 50 mL; ~2 angula at *kaneenika*; collect at *apanga*; ×7; AM	6
	Nasyam	*Anu tailam* (ANXS-3) 2 drops, both nostrils; AM	5
	Jaloukavacharana	Freshwater leech; left upper eyelid; 30 min; honey smear + bandage	1
	Aschyotana	*Netramrutam* (NUYS-6) 2 drops at *kaneenika* (~2 *angula*); AM	6
3rd course	*Netraseka*	Fresh decoction 50 mL; ~2 *angula* at *kaneenika;* collect at *apanga*; ×7; AM	5
	Nasyam	*Anu tailam* (ANXS-4) 2 drops, both nostrils; AM	3
	Jaloukavacharana	Freshwater leech; left upper eyelid; 25 min; honey smear + bandage	1
	Aschyotana	*Netramrutam* (NUXS-8) 2 drops at *kaneenika* (~2 *angula*); AM	6

At each visit, the patient underwent *Deepana*, *Pachana*, *Srotoshodhana*, and *Virechana*. Given her *rooksha* (dry) state and need for strong purgation, *Nimbamruthadi Eranḍathailam* was used for *snehavirechana*.

At the third visit, although symptoms had subsided, left-eye redness persisted; to mitigate *pitta, Avipathi choornam* was administered.

3. OUTCOME AND FOLLOW-UP

The patient was very cooperative and adherent to medication and procedures. During the daily close supervision of treatments, no adverse drug reactions or eye irritations were noticed. After *Jaloukavacharana* bleeding was very minimal and no pain or itching was observed. She exhibited progressive and sustained ocular health with no rise in IOP 13 mmHg→16 mmHg. LE VA LogMAR 1.30→0.477. Bonini el classification of VKC was observed to be reduced from grade 3 to grade 0 by the end of treatment. Clinical symptoms, (Table 5) including itching, redness, photophobia, and ocular congestion, were appropriately addressed. (Figure 1) During the six-month follow-up period, the patient remained symptom-free and steroid independent and was advised to continue periodic *Kriyakalpa* therapies and adhere to *Kaphapittahara* diet and regimen for ocular health and prevent recurrence.

Time Point	VA LogMAR	IOP mmHg	Corneal neovascularisation	Redness (0-5)	Itching (0-5)	Bonini Grade of VKC
22-03-2025	1.30	13	4	4	4	3
15-13-2025	1.17	14	3	4	2	2a
10-04-2025	1.07	15	1	2	1	2a
07-10-2025	0.47	14	0	2	0	1
14-03-2025	0.47	16	0	0	0	0

*0 – Nill, 1-very mild, 2- mild, 3-moderete, 4-severe, 5- very severe

4. DISCUSSION:

VKC corresponded to *Kaphaja Abhishyanda*, a *Vartmagata Netra Roga* described by *acharya Susruta*.[ix] In this framework, *Kapha–Pitta* vitiation involving *Rasa, Rakta*, and *Mamsa dhatu* manifested as itching, redness, discharge, and swelling; management was therefore oriented to *Amapachana, Deepana, Rakta*

shodhana, Sroto-shodhana, and *Virechana*. Internal medicines were selected for d*oshahara,* immunomodulatory, and *chakshushya* (wholesome for eyes) actions: *Guduchyadi kashayam* supported *amapachana/kaphapittahara* and anti-inflammatory antioxidant effects; *Patolakaturohinyadi kashayam* provided *deepana, shophahara,* and *virechana* attributes;[x] *Vilwadi gulika* addressed *Kapha-Vata* with *deepana, pachana, grahi, sroto-shodhana,* and *lekhana* properties;[xi] *Avipatti churnam* functioned as *deepana, pachana, vata-anulomaka, pittahara,* and *nitya-virechana*.[xii] External therapies complemented systemic care: *Netraseka*[xiii] with *Darvi, Yashti*, and *Lodhra* targeted itching and lid congestion; *Nasyakarma* with *Anutailam* addressed *Jaloukavacarana urdhvajatruvangadosha*; delivered inflammatory/vasodilatory salivary factors;[xiv] anti *Aschyotana*[xv] facilitated drug contact across tear-film layers;[xvi] *Netramrutam* (Table 6) provided antimicrobial and *tridosha-shamana* support, with alum showing anti-biofilm action.[xvii] Collectively, this integrative, course-based protocol improved visual acuity and resolved ocular symptoms while maintaining steroid-free follow-up.

As a single-patient experience, natural disease variation could have contributed; therefore, generalizability was limited, and larger controlled studies were warranted to validate the role of Ayurveda in VKC and related allergic conjunctival disorders. Mode of action: The combined interventions—*deepana/pachana, rakta shodhana, virechana*, and *kriyakalpa* (*netraseka, aschyotana, nasya, jaloukavacarana*) were hypothesized to support ocular-surface homeostasis in VKC by improving tear-film quality, reducing conjunctival hyperemia and mucus threads, and modulating pruritus/photophobia. These mechanistic links were exploratory, derived from a single case, and require confirmation in controlled studies.

Table 6: Netramrutham Each 10 ml prepared out of

Ingredients	Botanical name	Quantity
Samudra Lavana	Normal saline	10 ml
Pithakhari	Potash alum	1.36%
Saindhava lavana	Sodium chloride	0.44%

5. CONCLUSION:

Early and accurate diagnosis of VKC is crucial to prevent complications like corneal deterioration and vision impairment. Educating patients and their caregivers about the chronic nature of VKC and the necessity of ophthalmic care is essential.

In this case, the patient experienced significant relief from symptoms including itching, ocular congestion, and photophobia. Notably, the DVA in the LE improved from LogMAR 1.30→0.477. Follow-up evaluations indicated effective control of symptom recurrence. These findings suggest that Ayurvedic therapies *Netradhara, Nasya, Jaloukavacharana,* and *Aschyotana* may provide beneficial effects in VKC.

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