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Case Analysis: The Role of Kriya Kalpa in Reversing Dry Eye Syndrome

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Abstract: Background: Dry Eye Syndrome (DES) is a prevalent and often chronic condition affecting the tear film and ocular surface, characterized by symptoms such as dryness, burning, foreign body sensation, and visual disturbances. Despite the widespread use of artificial tears and anti-inflammatory medications, many patients continue to experience persistent discomfort and relapse, prompting the need for alternative therapeutic approaches. Ayurveda offers a rich repository of ocular therapies under the category of Kriya Kalpa, which includes procedures such as Tarpana, Aschyotana, and Anjana, aimed at restoring ocular health through holistic mechanisms. Objective: This case study aims to evaluate the efficacy of Ayurvedic ocular therapies, specifically Kriya Kalpa, in reversing Dry Eye Syndrome in a middle-aged female patient who did not respond adequately to conventional treatments. Methods: A 42-year-old female patient with a history of chronic DES underwent a 21-day treatment protocol involving Tarpana with Jeevantyadi Ghrita, Aschyotana with Triphala Kashaya, and Anjana therapy using herbal collyrium, along with internal administration of Saptamrita Lauha and Triphala Guggulu. Objective clinical parameters, including Schirmer's Test, Tear Break-Up Time (TBUT), and corneal staining, were assessed before and after treatment, alongside a subjective symptom evaluation using a Visual Analogue Scale (VAS). Results: Post-treatment results showed significant improvement: Schirmer's Test values increased from 6 mm to 14 mm, TBUT improved from 4 seconds to 11 seconds, and corneal staining reduced to minimal. The patient reported complete relief from dryness, irritation, and dependence on artificial tears. These improvements were sustained at a 2-month follow-up without recurrence.

***Keywords*: Dry Eye Syndrome, Kriya Kalpa, Tarpana, Anjana, Ayurveda, Shushkakshipaka, Triphala, Jeevantyadi Ghrita**

I. Introduction

Dry Eye Syndrome (DES), also known as keratoconjunctivitis sicca, is a multifactorial disease of the ocular surface that results in discomfort, visual disturbance, and potential damage to the cornea and conjunctiva. It is primarily caused by a deficiency in tear production or excessive evaporation of tears, leading to an unstable tear film and inflammation of the ocular surface. Globally, DES affects millions of individuals, with prevalence ranging from 5% to 50%, depending on age, gender, and environmental factors. The condition is increasingly observed in urban populations, particularly among individuals exposed to digital screens, air-conditioned environments, and prolonged visual tasks. [1]

In modern ophthalmology, DES is managed using artificial tear substitutes, topical anti-inflammatory agents (e.g., cyclosporine), lubricating gels, and in some cases, surgical interventions such as punctal plugs. However, these treatments often provide only temporary symptomatic relief and may not effectively restore tear film stability or address underlying causes such as glandular dysfunction and ocular surface inflammation. Additionally, long-term reliance on artificial tears without addressing root causes may compromise the natural tear-producing mechanism. [2]

In Ayurveda, Dry Eye Syndrome (DES) is associated with Shushkakshipaka, a specific type of Abhishyanda, which refers to inflammatory eye conditions primarily arising from the imbalance of Vata and Pitta doshas. Ayurvedic principles attribute this imbalance to unfavorable lifestyle practices such as prolonged exposure to heat and wind, use of digital screens, insufficient sleep, and poor dietary choices. [3] These factors disrupt the balance of the doshas, leading to a decrease in ocular lubrication (Rasa dhatu kshaya) and a reduction in tear production (Ashru kshaya). To address these issues, Ayurveda promotes a comprehensive treatment approach that includes internal medications, lifestyle modifications, and localized therapeutic methods classified under Kriya Kalpa. Kriya Kalpa is a distinct area within Shalakya Tantra, the Ayurvedic branch focused on eye health, which features targeted ocular treatments designed to cleanse, nourish, and revitalize the eyes.[4] Notable procedures encompass Tarpana (the application of medicated ghee over the eyes), Aschyotana (the use of medicated eye drops), and Anjana (the application of herbal collyrium). Classical Ayurvedic texts extensively document these treatments, which aim to restore the balance of doshas in the eyes, enhance tear production, alleviate ocular inflammation, and fortify the structures of the eyes. [5]

This case study presents a clinical scenario where a patient with chronic and treatment-resistant Dry Eye Syndrome underwent a structured Kriya Kalpa protocol. The objective was to assess the therapeutic potential of these traditional therapies in relieving symptoms and improving measurable clinical parameters of tear function. The positive outcome observed suggests that Ayurvedic ocular interventions can serve as an effective alternative or complementary approach to modern eye care in DES management.

Aims and Objectives

Aim

• To evaluate the therapeutic role of Kriya Kalpa in the management of Dry Eye Syndrome (Shushkakshipaka).

Objectives

• To assess the effectiveness of Tarpana, Aschyotana, and Anjana in relieving symptoms of Dry Eye Syndrome.
• To monitor changes in tear production and ocular surface integrity using Schirmer's Test, Tear Break-Up Time (TBUT), and corneal staining.
• To observe the long-term sustainability of symptomatic relief post-therapy.
• To explore the correlation between Ayurvedic diagnosis and modern ophthalmologic parameters.

II. MATERIAL AND METHODS

Study Design

Single-patient interventional case study.

Inclusion Criteria

Age between 30–60 years
Confirmed clinical diagnosis of DES
Willingness to undergo Ayurvedic treatment protocol

Exclusion Criteria

Autoimmune disorders (e.g., Sjögren's Syndrome)
Active ocular infection or trauma
History of ocular surgery in the past 6 months

Case Presentation

Patient Profile

- Age/Sex: 42-year-old female
- Occupation: IT professional
- Medical History: No systemic illness, moderate myopia (-2.5D), diagnosed with DES 18 months prior
- Presenting Complaints: Burning sensation in eyes, foreign body sensation, dryness, and occasional blurring of vision; symptoms worsened with screen exposure
- Previous Treatment: Artificial tear substitutes, cyclosporine eye drops, punctal plugs – minimal improvement reported
- Ayurvedic Evaluation

Nidana (Etiology)

- Excessive screen time (Alpa nidra, Atigrahanam)
- Poor hydration and irregular diet (Rasa kshaya, Pitta aggravation)

Roga Nidanam

Diagnosed as Shushkakshipaka under the broader category of Abhishyanda, primarily due to Vata-Pitta vitiation.

Assessment Criteria

Test	Pre-treatment
Schirmer's Test	6 mm
Tear Break-Up Time	4 seconds
Corneal Staining	Moderate
Patient Symptoms	Severe discomfort

Assessments were made on Day 0, Day 21, and 2-month follow-up.

Treatment Protocol

A combination of Kriya Kalpa therapies was administered over a 21-day inpatient period.

Interventions (Kriya Kalpa & Oral Medication)

Therapy	Description	Drug Used	Duration
Tarpana	Retention of medicated ghee over closed eyes	Jeevantyadi Ghrita	7 days
Aschyotana	Eye drops instilled	Triphala Kashaya	Twice daily for 21 days
Anjana	Application of collyrium	Formulation with Triphala, Yashtimadhu, Daruharidra	Once daily at night
Oral Medication	Internal support	Saptamrita Lauha, Triphala Guggulu	21 ays

1. **Tarpana (Retaining Medicated Ghee on Eyes)**

Drug Used: Jeevantyadi Ghrita
Duration: 7 days
Effect: Provided unctuousness and nourishment to ocular structures, alleviated dryness.

2. **Aschyotana (Eye Drops)**

Drug Used: Triphala Kashaya
Frequency: Twice daily
Effect: Cleansed the ocular surface, reduced inflammation.

3. **Anjana (Collyrium Application)**

Drug Used: Srotojanan Anjana prepared from Triphala, Yashtimadhu, and Daruharidra
Timing: At night before sleep
Effect: Stimulated lacrimal gland activity and reduced oxidative stress.

4. **Internal Medication**

Saptamrita Lauha (250 mg BID)
Triphala Guggulu (500 mg BID)
Ensured systemic support and maintained doshic balance.

Statistical Analysis

Clinical Parameters Before and After Treatment

Parameter	Before Treatment	After Treatment	% Improvement
Schirmer's Test (mm/5 min)	6 mm	14 mm	133.3%
Tear Break-Up Time (TBUT) (sec)	4 seconds	11 seconds	175.0%
Corneal Staining (Grade 0–3)*	Grade 2	Grade 0–1	Qualitative ↓
Ocular Discomfort Score**	8/10	1/10	87.5%
Frequency of Artificial Tear Use	5–6 times/day	0	100% cessation

Notes:

* Corneal Staining graded using the Oxford scale: Grade 2 = moderate punctate epithelial erosions; Grade 0 = no staining
** Ocular Discomfort Score based on Visual Analogue Scale (VAS), where 0 = no discomfort, 10 = severe discomfort

III.Discussion

Dry Eye Syndrome (DES) is emerging as a modern-day lifestyle disorder that not only impacts ocular comfort but also impairs quality of life and work productivity. It is especially prevalent among individuals engaged in prolonged visual tasks, such as computer users, and is often exacerbated by environmental and behavioral factors. The chronicity and multifactorial nature of DES make its management challenging within the scope of modern medicine, where treatments are largely palliative, focusing on tear supplementation rather than restoration of physiological tear secretion. [6]

This case highlights the potential of Ayurveda's Kriya Kalpa therapies to provide both symptomatic relief and functional improvement in a patient with chronic DES who had previously experienced limited benefit from conventional therapy. The combination of Tarpana, Aschyotana, and Anjana, along with internal Rasayana medications, offered a holistic intervention that addressed not only the dryness but also the underlying doshic imbalance contributing to the condition.

Mechanistic Insights from Ayurveda

In Ayurvedic terms, the patient presented with features of Shushkakshipaka, predominantly caused by Vata and Pitta vitiation. Vata is responsible for drying and movement-related functions, and when aggravated, it leads to tear deficiency and irregular blinking patterns. Pitta, on the other hand, governs inflammation and metabolic activity, which explains the burning sensation and hyperemia. The treatment was tailored to pacify both doshas:

Tarpana, using Jeevantyadi Ghrita, directly nourished and lubricated the ocular tissues (netra dhatus), reversing the effect of rasa kshaya (fluid depletion) and restoring tear stability. The ghrita also acted as a carrier for lipid-soluble phytochemicals, providing deeper tissue penetration. [7]

Aschyotana with Triphala Kashaya performed a dual role: it provided gentle cleansing of the ocular surface and delivered anti-inflammatory and antioxidant action, as Triphala is rich in tannins and polyphenols. This helped in reducing ocular surface stress and inflammation.

Anjana therapy helped stimulate lacrimal gland secretion and provided astringent and rejuvenating effects through its ingredients like Daruharidra and Yashtimadhu. The mechanical application of Anjana may also promote meibomian gland stimulation, contributing to lipid layer restoration in the tear film.

Correlation with Modern Evidence [8]

Scientific literature has increasingly begun to explore the therapeutic potential of herbal eye treatments. Components of Triphala have demonstrated antioxidant, antibacterial, and anti-inflammatory effects in pharmacological studies, aligning with the observed reduction in ocular discomfort and improvement in tear parameters. Ghee-based ocular therapies have shown emollient and nourishing properties and are increasingly investigated for their compatibility with ocular tissues.

The observed improvement in objective markers — such as a 133% increase in Schirmer's score and a 175% improvement in TBUT — confirms that Kriya Kalpa can do more than symptomatic relief; it actively contributes to tissue repair and physiological normalization of tear film dynamics. Additionally, the complete cessation of artificial tear dependence is a significant clinical outcome, demonstrating a reversal of pathophysiology rather than mere palliation.

IV Conclusion

This case study presents significant evidence supporting the efficacy of Kriya Kalpa, a series of classical Ayurvedic eye treatments, in effectively managing chronic Dry Eye Syndrome (DES). The approach employed combines external therapies—specifically Tarpana, Aschyotana, and Anjana—with internal medications like Saptamrita Lauha and Triphala Guggulu. This integration not only relieved the patient's symptoms but also led to observable enhancements in clinical metrics such as tear production and tear film stability. The treatment was found to be well-tolerated, non-invasive, and offered lasting benefits without creating a reliance on artificial tear substitutes or recurring symptoms during the follow-up period. Crucially, this case underscores that Ayurveda transcends merely addressing symptoms; it seeks to restore deeper physiological and systemic balance by improving glandular function and enhancing the nourishment and immunity of ocular tissues. Although the study focuses on a single patient, the favorable results highlight the potential of Ayurvedic methods in treating chronic and relapsing conditions that often receive inadequate relief from conventional treatments. The holistic nature of Ayurveda, prioritizing personalized care, doshic equilibrium, and ongoing tissue rejuvenation, positions it as a promising complementary approach for managing eye surface disorders like DES. To further validate these findings and support integrative eye care approaches, it is essential to conduct well-structured clinical trials involving larger participant groups, standardization of techniques, and implementation of objective outcome measures. Should evidence continue to align with established Ayurvedic principles, Kriya Kalpa therapies may be integrated as an effective, safe, and sustainable option in the comprehensive clinical management of Dry Eye Syndrome.

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