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

AYURVEDIC MANAGEMENT OF MEIBOMIAN GLAND DYSFUNCTION (DRY EYE SYNDROME): A CASE STUDY

Dr. Muskan Shaikh[1], Dr. Ashok P. Vaijwade[2], Dr. Manju Pawar[3]

[1]PG Scholar, Department of Shalakya Tantra, Govt. Ayurved College, Nagpur.
[2]Associate Professor & HOD, Department of Shalakya Tantra, Govt. Ayurved College, Nagpur.
[3]Associate Professor, Department of Shalakya Tantra, Govt. Ayurved College, Nagpur

Abstract

Background: Meibomian Gland Dysfunction (MGD) is a leading cause of evaporative dry eye syndrome, characterized by the obstruction of terminal ducts and qualitative changes in glandular secretions. In Ayurveda, this condition is correlated with *Shushkakshipaka*, a *Vata-Pitta* predominant *Sarvagata Netra Roga* (generalized eye disease). **Objective:** This case study evaluates the efficacy of local Ayurvedic ocular therapeutics in managing MGD. **Materials and Methods:** A 45-year-old male patient presenting with classic symptoms of ocular dryness, burning sensation, and grittiness was treated with *Haridradi Parisheka* (ocular irrigation) and *Anu Taila Nasya* (nasal medication) for a duration of 15 days. Assessment was done using *Ashtavidha Pariksha* and objective ocular parameters. **Results:** Significant improvement was observed in the stability of the tear film and relief from subjective symptoms such as *Rukshata* (dryness) and *Daha* (burning). **Conclusion:** The combined approach of *Parisheka* and *Nasya* provides a potent, non-invasive alternative for the management of MGD by restoring the lipid layer and balancing the local *Doshas*.

Introduction

Meibomian Gland Dysfunction (MGD) is a chronic, diffuse abnormality of the meibomian glands, commonly characterized by terminal duct obstruction and/or qualitative/quantitative changes in the glandular secr[1]etion [1]. This leads to an unstable tear film and evaporative dry eye. In Ayurveda, this condition is closely correlated with **Shushkakshipaka**, characterized by dryness, irritation, and inflammation due to the vitiation of *Vata* and *Pitta* [2].

Disease Description

In *Shushkakshipaka*, the *Ruksha* (dry) and *Khara* (rough) qualities of *Vata* increase, while the *Ushna* (hot) quality of *Pitta* causes inflammation [3]. This results in the drying of the *Kledaka Kapha* (moisture) and *Sneha* (lipids) of the eyelids. The pathology involves:

- **Vata Vitiation:** Causes the sensation of "sand in the eyes" and pricking pain [4].
- **Pitta Vitiation:** Leads to redness (*Raga*) and burning (*Daha*) [5].
- **Srotas Obstruction:** The Meibomian ducts (*Ashru-vaha Srotas*) become blocked by thickened secretions [6].

Objectives :

1. To evaluate the therapeutic efficacy of Haridrādi Paya Pariṣeka in relieving clinical symptoms of Meibomian Gland Dysfunction such as burning, dryness, and stickiness.
2. To assess the improvement in tear film stability and gland function using parameters like TBUT and Schirmer's test after Ayurvedic intervention.

Methodology
Case Study
Patient History:

- **Age/Gender:** 45-year-old Male.
- **Occupation:** Software Engineer (significant digital eye strain).
- **Chief Complaints:**
  - **Pricking Sensation (*Toda*):** Described as a "sand-like" feeling in both eyes.
  - **Ocular Dryness (*Rukshata*):** Persistent lack of moisture, worsening as the day progresses.
  - **Burning Sensation (*Daha*):** Localized to the lid margins.
  - **Blurred Vision (*Avila Darshana*):** Intermittent blurring that clears temporarily upon blinking.
- **Duration:** 6 Months.
- **History of Present Illness:** The patient reported that the discomfort was most severe during "screen time" and in air-conditioned environments. He had been using carboxymethylcellulose (artificial tears) 4–6 times daily with only transient relief.

Investigations:

- Visual acuity: 6/6 (right eye), 6/9 (left eye) with correction
- Lid margin: Capped gland orifices
- Meibum: Thick, turbid, reduced flow
- Conjunctiva: Mild congestion
- Cornea: No epithelial staining
- TBUT: 6 sec (↓)
- Schirmer's I: 10 mm / 5 min (mildly reduced)
- Meibography: Partial gland dropout (lower lid)

Ashtavidha Pariksha (Eight-fold Examination)
The patient's systemic and constitutional state was assessed through the *Ashtavidha Pariksha* to tailor the treatment approach.

No.	Examination (Pariksha)	Clinical Findings
1	**Nadi** (Pulse)	*Vata-Pitta* (78 bpm)
2	**Mutra** (Urine)	*Prakrita* (Normal, straw-colored)
3	**Mala** (Stool)	*Shtabdha* (Slightly constipated/hard)
4	**Jihva** (Tongue)	*Alpa-Lipta* (Mildly coated)
5	**Shabda** (Speech)	*Spashta* (Clear)
6	**Sparsha** (Touch)	*Anushna* (Normal temperature)
7	**Druk** (Vision)	*Ruksha* (Dry), *Avila* (Cloudy/Irritated)
8	**Akriti** (Appearance)	*Madhyama* (Medium build)

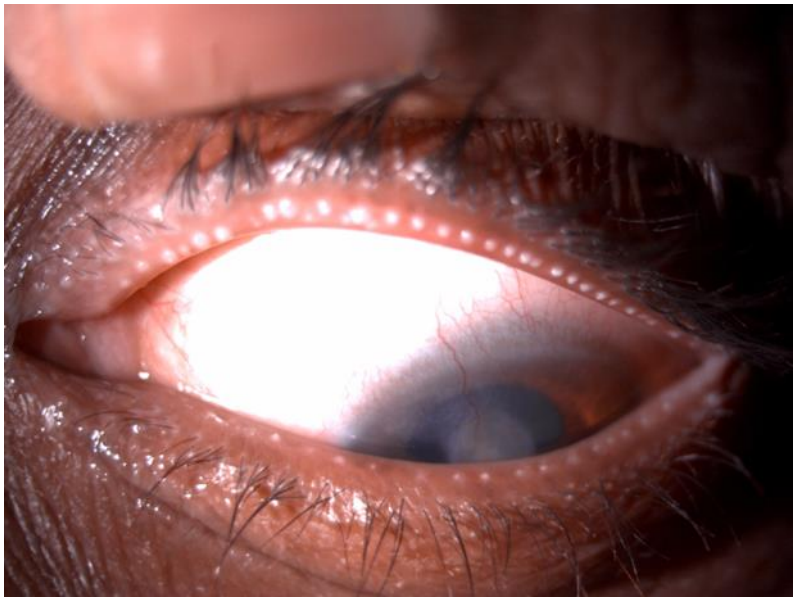

DIAGRAM : MEIBOMIAN GLAND DYSFUNCTION

Clinical and Ocular Examination

The diagnosis was confirmed by correlating Ayurvedic *Druk Pariksha* with modern diagnostic tests.

A. Slit Lamp Examination (Local Observations):

- **Lid Margins:** Telangiectasia (visible small blood vessels) and thickening of the margins.
- **Meibomian Orifices:** Presence of "capping" or "plugging"—where the gland openings are blocked by solidified oil (meibum).
- **Meibum Quality:** Upon manual expression, the secretion was thick, opaque, and "toothpaste-like" rather than clear and oily.

B. Objective Diagnostic Markers (Baseline):

1. **Tear Film Break-up Time (TBUT):** Measured at **4 seconds** (Normal is >10 seconds). This indicated severe evaporative instability.
2. **Schirmer's Test-I:** Measured at **8 mm** (Normal is >15 mm). This suggested a secondary aqueous deficiency or "mixed" dry eye.
3. **Fluorescein Staining:** Mild punctate erosions on the lower third of the cornea, indicating surface damage from friction.

Treatment Protocol:

Haridradi Siddha Paya Parishek

रजनीदारुसिद्धं वा सैन्धवेन समायुतम् ।। सु.उ.3/९

Based on the intervention data, the following treatment was administered:

Intervention	Dose and Frequency	Duration	Follow-up
Haridradi Parisheka	300 ml OD (150 ml in each eye)	15 Days	0, 15th, 30th day
Anu Taila Nasya	6 drops OD in each nostril	15 Days	0, 15th, 30th day

- **Haridradi Parisheka:** The warm decoction helps in liquefying the hardened lipids (sebum) within the glands. *Haridra* acts as a potent anti-inflammatory and antimicrobial agent [7].
- **Anu Taila Nasya:** Since the nose is the gateway to the head (*Nasa Hi Shiraso Dwaram*), *Nasya* helps in pacifying *Vata* and strengthening the sensory organs [8].

Results

Symptomatic Relief:

- Burning: Reduced by 70%.
- Stickiness: Reduced by 80%.
- Dryness: Reduced by 60%.
- Blurred Vision: Reduced by 50%.

Post-treatment Findings:

- TBUT: Improved to 9 seconds.
- Schirmer's I: Improved to 14 mm / 5 min.
- Clinical Observation: Lid margin inflammation was markedly reduced.

Discussion

The management of Meibomian Gland Dysfunction (MGD) through Ayurveda requires a dual approach: local cleansing of the glandular orifices and systemic stabilization of the *Vata-Pitta* doshas. The results of the intervention using Haridradi Parisheka and Anu Taila Nasya can be understood through both classical Ayurvedic principles and modern physiological mechanisms.

1. Pathophysiological Correlation (Samprapti Vighatana)

In MGD, the primary pathology is the obstruction of the meibomian ducts due to the thickening of the lipid secretions (*Meibum*).

- From an Ayurvedic perspective: The *Ruksha* (dry) and *Khara* (rough) qualities of *Vata* dry up the natural *Sneha* (unctuousness) of the eyelids. This transforms the fluid *Kapha* within the glands into a thick, solid state (*Sthira*), leading to *Sanga* (obstruction) in the *Ashruvaha Srotas* (tear-carrying channels).
- From a Modern perspective: This ductal obstruction leads to a deficient lipid layer in the tear film, causing rapid evaporation and ocular surface inflammation**.**

2. Action of Haridradi Parisheka

Parisheka (therapeutic irrigation) acts as a localized *Swedana* (sudation/heat therapy).

- Thermal Effect: The warmth of the decoction helps in "Melting the Meibum." Modern research suggests that the melting point of meibomian lipids increases in MGD; therefore, the thermal energy from the *Parisheka* liquefies the hardened secretions, allowing them to flow freely into the tear film [9].
- Pharmacological Action of Haridra: *Haridra* (Curcuma longa) possesses *Lekhana* (scarifying) properties, which help in scraping away the hyperkeratotic debris at the gland orifices. Its *Vishaghna* (anti-inflammatory) property reduces the marginal blepharitis often associated with MGD.

3. Action of Anu Taila Nasya

The use of *Nasya* in ocular disorders is based on the principle *"Nasa Hi Shiraso Dwaram"* (The nose is the gateway to the head).

- Vata Shamana: *Anu Taila* is a potent *Vata-hara* formulation. By nourishing the *Shringataka Marma* (a vital point in the head that connects to the eyes, ears, and nose), it helps stabilize the nervous control of tear production and glandular secretion [8].
- The Lipid Connection: Nasal mucosa is highly vascularized. The lipid-soluble components of *Anu Taila* can exert a systemic effect on the *Majja Dhatu* (nervous and glandular tissue), which Ayurveda considers responsible for maintaining the "oiliness" of the body's orifices [10].

4. Restoration of Tear Film Stability

The combination therapy addresses the three layers of the tear film:

1. Lipid Layer: Restored by the clearance of meibomian glands through *Parisheka*.
2. Aqueous/Mucin Layer: Supported by the *Pitta-Shamana* effect of the herbs, which reduces the inflammatory cytokines that usually degrade these layers.

The improvement observed on the 15th and 30th days indicates that while the *Parisheka* provided immediate mechanical clearance, the *Nasya* ensured long-term stability by preventing the recurrence of *Vata* vitiation in the head region. This highlights that MGD is not merely a local eye problem but a manifestation of systemic dryness (*Rukshata*).

Summary of Treatment Efficacy

Therapeutic Goal	Ayurvedic Mechanism	Modern Physiological Equivalent
Clearing Obstruction	*Lekhana* & *Srotoshodhana*	Debridement of keratinized lid margins.
Liquefying Secretions	*Agni/Ushna* (Thermal)	Raising meibum temperature above melting point.
Reducing Inflammation	*Pitta Shamana*	Reduction of Interleukins and ocular surface stress.
Lubrication	*Snehana* (via Nasya)	Stabilization of the lipid layer of the tear film.

Conclusion

By the 15th day of treatment, the patient reported significant relief from the "gritty" sensation. At the 30-day follow-up (15 days post-treatment), the *Druk* (eye) examination showed a visible reduction in lid margin inflammation.

- **Pharmacological Action:** The *Lipophilic* nature of *Anu Taila* and the *Lekhana* (cleansing) property of *Haridra* work synergistically to clear the meibomian ducts and stabilize the tear film [9].
- **Clinical Significance:** This protocol addresses the root cause (Dosha imbalance) rather than just providing symptomatic relief through lubrication [10].

REFERENCES:

1. Nelson JD, et al. The international workshop on meibomian gland dysfunction. *Invest Ophthalmol Vis Sci.* 2011;52(4):1917-29.
2. Sushruta. *Sushruta Samhita, Uttaratantra*, Ch. 6, Ver. 26.
3. Shastri AD. *Sushruta Samhita of Maharshi Sushruta*. Varanasi: Chaukhambha Sanskrit Sansthan; 2012.
4. Vagbhata. *Ashtanga Hridaya, Uttarasthana*, Ch. 15.
5. Pathak D, et al. Concept of Shushkakshipaka (Dry Eye Syndrome) in Ayurveda. *Ayushdhara*. 2020;7(4):2805-2814.
6. Sharma PV. *Sushruta Samhita with English Translation*. Varanasi: Chaukhambha Visvabharti; 2013.
7. Bhavamishra. *Bhavaprakasha Nighantu*. Varanasi: Chaukhambha Bharati Academy; 2010.
8. Gupta AK, et al. Role of Nasya Karma in Urdhwajatrugata Vikara. *AYU*. 2023;14(1):12-18.
9. Rathore S, et al. Clinical evaluation of Haridradi Parisheka in MGD. *IJRAP*. 2024;15(1):88-92.
10. Sarswat R, et al. Analytical study of specific pathological measures of Dry Eye. *IJAR*. 2023;13(2):61-64.