

COMPUTER VISION SYNDROME - AN AYURVEDIC PROSPECTIVE.

Abstract:

In Ayurveda eye is one of the *Gyanendriya* (sense organ) which has dominance of *Tej Mahabhuta*. Vision is one of the most important sensory functions, enabling humans to perceive and interpret their surroundings. With the rapid advancement of technology, computers have become an essential part of daily life. Many professions now require prolonged computer use, often exceeding eight hours per day. Extended exposure to digital screens has led to an increase in visual and ocular problems collectively known as Computer Vision Syndrome (CVS). Computer Vision Syndrome refers to a group of eye and vision-related symptoms that result from prolonged screen use. Common symptoms include eye strain, dryness, irritation, blurred vision, and discomfort in the surrounding ocular muscles. These symptoms are primarily associated with reduced blink rate, prolonged focusing effort, and exposure to monitor light, which contribute to tear film instability and dry eye conditions.

As CVS is a disorder associated with modern technological use, it is not described directly in classical medical literature. Nevertheless, its clinical features can be correlated with *Shushkakshipaka*, a type of *Sarvagata Netraroga* described in Ayurveda. Ayurveda offers a systemic pathophysiological framework rooted in *ChakshurindriyaAtiyoga*, *Vata-Pitta Dushti*, and *Netra Roga Siddhanta*. The present article critically integrates classical Ayurvedic principles with modern understanding to construct a coherent conceptual model for the etiopathogenesis and management of Computer Vision Syndrome.

Keywords: Computer Vision Syndrome, *ChakshurindriyaAtiyoga*, *Vata Dushti*, *Netra Roga*, Digital Eye Strain, *Shushkakshipaka*

Introduction

Computer Vision Syndrome (CVS) is not explicitly described in the classical Ayurvedic texts; however, it can be correlated with *Shushkakshipaka*, which is categorized under *Sarvagata Netraroga* in Ayurveda. CVS developed in the late twentieth century with the rapid expansion of computer and digital device usage. Therefore, its understanding and management from an Ayurvedic perspective should be established based on the fundamental principles of Ayurveda before formulating a line of treatment.

The Nidana (etiological factors) and *Samprapti* (pathogenesis) of CVS can be explained through the concept of *Trividha Hetu*, namely *Asatmyaindriyarthasamyoga* (improper or excessive use of the sense organs), *Pragyapradha* (intellectual error leading to unhealthy behavioral practices), and *Parinama* (time-related and environmental influences). In CVS, excessive and inappropriate use of *Chakshurendriya* (visual apparatus) plays a central role in disease development.

Clinically, the signs and symptoms of *Shushkakshipaka*, which resemble those of CVS, are associated with *Vata-Pitta Pradhan Tridosha* vitiation at the level of *Chakshurendriya*. This results in *Sthaansamshreya* (localization) of aggravated Doshas in the *Netra*, leading to

ocular dryness, irritation, burning sensation, visual fatigue, and discomfort. According to the American Optometric Association (AOA), Computer Vision Syndrome is defined as “a complex of eye and vision problems related to near work that are experienced during or associated with computer use.”

Aim and Objectives

The main aim behind working in this article was to create an Ayurvedic understanding of computer vision syndrome to know about the *Dosha Dushya Samurcharna & Samprapti Ghatak*. Computer Vision Syndrome has no direct reference in Ayurvedic texts; it could be correlated to the signs and symptoms of Shushkakshipaka of Sarvakshiroga described by acharya Sushruta under Saadhya Vyadhi.

Disease Review

An ayurvedic approach can be given on the idea of basics of Ayurveda. *Nidana* and *Samprapti* can be understood by *Trividha Hetu* (*Asatmya indriyarthasamyoga, Pragyapradha, Parinama*) associated to *Chakshurendriya* (eye). The signs and symptoms of CVS are associated with *Vata - Pitta pradhana Tridosha* vitiation at *Chakshurendriya* leading to *Shushkakshipaka*.

Nidana

Acharyas have described Hetu of all Netra Rogas in general.

¹ उष्णाभितप्तस्यजलप्रवेशाद्दूरेक्षणात्स्वप्नविपर्ययाच्चक्षुप्रसक्तसंरोदनकोपशोकक्लेशाभिघातादतिमैथुनाच्च॥26॥

शुक्तरनालाम्लकुलत्थमाषनिषेवणाद्वेगविनिग्रहाच्च॥

स्वेदादथोर्ध्वमनिषेवणाच्चछर्देर्विघाताद्वमनातियोगात्॥

बाष्पग्रहात्सूक्ष्मनिरीक्षणाच्चनेत्रे विकाराज्जनयन्ति दोषाः दृष्ट्वा॥27॥ (Su.utr. 1\26-27)

When a person heated by the sun suddenly enters cold water, looks excessively at distant objects, stays awake at night, and continuously experiences laughter, anger, grief, sorrow, injury, and excessive sexual activity; excessive intake of substances like alkalis (*kshara*), sour items, horse gram (*kulthi*), and black gram (*urad*); suppression of natural urges such as flatus and urine; excessive sweating, excessive smoking, obstruction of tears, and constantly observing minute objects (like fine needlework etc) these aggravate *Vata* and other *doshas* and produce diseases of the eyes.

Vishesha Nidana²

1. Chakshurindriya Atiyoga :- Prolonged screen fixation directly corresponds to *Atiyoga* (over-utilization) of *Chakshurindriya*. Classical texts describe *Atiyoga* as a principal etiological factor in *Indriyaj Vikara*. Continuous accommodative effort and reduced blinking mirror this pathological overuse.

2. Dosha Involvement

Vata Dosha: Primary involvement due to *ruksha* (dryness), *chala* (instability), and overactivity.

Pitta Dosha: Secondary aggravation due to exposure to intense light and glare. Dryness, foreign body sensation, and ocular fatigue signify Vata predominance, whereas burning sensation and redness indicate *Pitta* association.

Causes of Computer Vision Syndrome

- 1.Distance and angle from computer screen
- 2.Less lightening in room
- 3.Glare at the display screen
- 4.Reduced blink rate
- 5.Increased tear evaporation

Symptoms of Computer Vision Syndrome These arise because the visual needs of the task exceed the visual ability of the individual to comfortably do that task. At greater risk for developing computer vision syndrome are those people who spent eight or more hours daily at computer. Common symptoms include: Eyestrain, headaches, blurred vision, difficulty in changing focuses between far and near, dryness of eyes, irritated eyes, tired eyes, redness, contact lens discomfort

Purvarupa³

Purvarupa are prodromal symptoms prior to disease felt by the patient.

Samanya Purvarupa of *Netrarogas*-

तत्राविलंसंरम्भमश्रुकण्डूपदेहवत्।गुरूषातोदागाद्यैर्जुष्टञ्चाव्यक्तलक्षणैः॥२१॥

सशूलंवर्मकोषेषुशूकपूर्णभिमेवच॥२२॥

विहन्यमानंरूपेवाक्रियास्वक्षियथापुरा।दृष्ट्वैवधीमान्बुध्येतदोषेणाधिष्ठितंतुतत्॥२३॥

- *Avilata* (Blurred vision)
- *Sa Samrambham*(Angry look)
- *Ashru* (Watering)
- *Kandu* (Itching)
- *Upadeha* (Coating)
- *Guruta* (Heaviness)
- *Usha* (Burning sensation)
- *Toda* (Pricking pain)
- *Raga* (Reddish discoloration)

- 109 • *Vartmakosha Sula* (Painful lids)
- 110 • *VartmakoshaSukapurnabha* (Foreign body sensation in lids)
- 111 • *Kriyaswakshiyathapura* (Reduced movements like blinking)

112 Few of the above *Purvarupas* are also present in prodromal symptoms of
113 *Shushkaakshipaakalike: Avilata* (Eye strain and asthenopia), *Sasamrambha* (Foreign body
114 sensations or atypical discomfort in eye), *Kandu* (Itching as a symptom because of eye
115 strain), *Guru* (Eye fatigue), *Usha* (Burning sensation), *Toda* (Pain in eyes),
116 *Sashulamvartmakoshaishu* (Pain in eye lids), *Sukapurnabham* (Foreign body sensation) can
117 be considered as *Purvarupa* of *Shushkaakshipaaka*.

118 3.Lakshana⁴

119 *Shushkaakshipaaka* is characterized by excessive closure and roughness in eye lids,
120 associated with difficulty in lid movements, blurred vision, burning sensation.

121 यत्कूणितंदारुणरूक्षवर्त्मविलोकेचाविलदर्शनंयत्।

122 सुदारुणंयत्प्रतिबोधनेचशुष्काक्षिपाकोपहतंतदक्षि॥२६॥(सु.उ.6/26)

- 123 • *Rukshta* (Feeling of Dryness)
- 124 • *Avila darshana* (Blurred vision)
- 125 • *Gharshan* (Gritty sensation)
- 126 • *DarunaVartmakshi* (Hardness of eyelids)
- 127 • *Krichrounmilana*(difficulty in opening and closing of eye)
- 128 • *Daha* (Burning sensation)
- 129 • Intolerance to light

130

131 According to Acharya Vagbhatta⁵

132 is characterized by

- 133 • *Gharshna* (foreign body sensation)
- 134 • *Toda*(pricking pain)
- 135 • *Upadeha* (loss of clear vision due to waste deposition)
- 136 • *Rooksha DarunaVartma* (hardness and roughness of the eye lids)
- 137 • *KrichraUnmeela Nimeela*(difficulty in closing and opening of lids)

138 • Shushkata(dryness)

139 • Shoola(pain)

140 Symptoms of Computer Vision Syndrome

141 These arise because the visual needs of the task exceed the visual ability of the individual to
142 comfortably do that task. At greater risk for developing computer vision syndrome are those
143 people who spent eight or more hours daily at computer. Common symptoms include:
144 Eyestrain, headaches, blurred vision, difficulty in changing focuses between far and near,
145 dryness of eyes, irritated eyes, tired eyes, redness, contact lens discomfort.

146 **Upashaya⁶**

147 Signifies medicines, food items and activities which give feelings of well-being to the patient.
148 Sheethechha – Likeness for cold, it can be considered as the patient might feel better while
149 washing the eyes with cold water.

150 Anupashaya

151 All the Nidanas can be considered as Anupashaya for Shushkaakshipaaka.

152

153 Sadhyasadyata⁷

154 Sarvagata Aushadha Sadhya Vyadhi.

155

156 Samprapti

157 Samanya Samprapti: Samanya Samprapti of Netraroga can be considered.

158

159 Vishesha Samprapti:

160 Due to the Nidana Sevana, VataPitta gets vitiated and passes through Urdhwa Sira's and gets
161 accumulated in the parts of the eye like Vartma, Sandhi, Shukla Mandala, Krishna Mandala,
162 Drushti Mandala (Sarvagata) and manifests the disease as Shushkaakshipaaka.

163

164 The Samprapti of Computer Vision Syndrome may be constructed as:

165 Nidana (Prolonged screen exposure, Ratri Jagarana, psychological stress)

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Chakshurindriya Atiyoga

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Vata Prakopa (Rukshata + Chala Guna Vriddhi)

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Rasa Kshaya and impaired ocular lubrication

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Associated Pitta Dushti (due to light exposure)

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175 Manifestation of Netra Shosha, Shushkakshipaka-like features



177 Clinical presentation of CVS

178
179 Samprapti Ghataka

Dosha	Vata-Pitta and Rakta
Dushya	Rasa-Rakta
Agni	Mandagni
Srotas	Rasa-Raktavaha
SrotasSrotodushti	Sanga
Rogamarga	Madhyama
Adhistana	All Netramandalas

180
181 **Clinical Correlation**

Modern Symptom	Ayurveda Correlation
Dryness	Netra Shosha
Burning	Pittaja Netra Lakshana
Blurred vision	Vata-induced functional disturbance
Headache	Urdhvajatrugata Vata
Eye strain	ChakshurindriyaKlama

182 The reduced blink rate documented in digital device users parallels disturbance in Nimesha-
183 Unmesha Kriya described in Ayurveda.

184 **Management Principles in Ayurveda⁸**

185 सैन्धवंदारुशुण्ठीचमातुलुङ्गरसोघृतम्॥२०॥

186 स्तन्योदकाभ्यां कर्तव्यं शुष्कपाके तदञ्जनम्। पूजितं सर्पिषश्चात्र पानमक्ष्णोश्च तर्पणम्॥२१॥

187 घृतेन जीवनीयेन नस्यं तैलेन चाणुना। परिषेके हितञ्चात्र पयः शीतं ससैन्धवम्॥२२॥

188 रजनीदारुसिद्धं वा सैन्धवेन समायुतम्। सपिर्युतं स्तन्यघृष्टमञ्जनं वामहौषधम्॥२३॥

189 (सु. उ. 9/20-23)

Powder of saindhavalavana (rock salt), daruharidra, and shunthi (dry ginger) should be prepared and triturated with lemon juice. This should be mixed with ghee and applied to the eyes; later it can be used as an añjana (collyrium) after mixing with a little milk and water. In addition, application of ghee to the eyes and eye-tarpana (retention of medicated ghee over the eyes) are beneficial.

Nasya (nasal therapy) should be performed with jivaniyaghrita or with anu taila⁹. For cooling the eyes, washing with decoctions of durva or kasheruka mixed with ghee is recommended. Collyrium prepared from these drugs with ghee should be applied, or anjana prepared by triturating them with milk may be used. Similarly, fine paste of saindhava with ghee may be applied, or powdered shunthi mixed with ghee may be used as a paste over the eyes to relieve dryness and inflammation. Aschotana can be performed with Darvi, Prapaundarika Kwatha, Manjishta Kwatha, Mridweeka Kwatha or Chandanadi Kwatha.¹⁰ Anjana can be performed with Masi should be obtained by burning the hair dipped in ghee in Antardhuma Karma.¹¹ Basti Karma with Ghrita Manda, Madhuka and Shatavari are specially indicated in the treatment of Shushkaakshipaaka.¹²

1. Nidana Parivarjana

Primary intervention includes regulation of screen exposure and restoration of physiological blinking rhythm.

2. Shamana Therapy

- Triphala Ghrita (internal and topical)
- Snehana for Vata pacification
- Chakshushya Dravya administration

3. Netra Kriya Kalpa

- Tarpana
- Putapaka
- Aschyotana
- Anjana

These procedures provide local oleation, improve tear stability, and nourish ocular tissues.

4. Rasayana Approach

Use of Chakshushya Rasayana to enhance ocular resilience and delay degenerative changes induced by chronic visual strain.

5. Lifestyle Integration

- Adequate sleep
- Periodic visual breaks

- Ergonomic correction
- Eye relaxation techniques such as Trataka

Discussion

Computer Vision Syndrome exemplifies a modern lifestyle disorder whose pathogenesis aligns strongly with classical principles of Ayurveda. The concept of Atiyoga of Indriya provides a direct theoretical bridge between ancient doctrine and digital-age pathology. The Vata-dominant nature of the disease explains the predominance of dryness, fatigue, and instability, while Pitta association accounts for inflammatory symptoms. Ayurveda does not restrict management to symptomatic lubrication but emphasizes systemic correction, Dosha pacification, Dhatu nourishment, and preventive discipline. Integrative application of Netra Kriya Kalpa along with digital hygiene strategies may provide superior long-term outcomes compared to symptomatic artificial tear therapy alone.

Conclusion

Computer Vision Syndrome represents a functional yet progressively impactful ocular disorder of the digital era. Through the lens of Ayurveda, it can be systematically understood as ChakshurindriyaAtiyoga leading to Vata-predominant Netra Vikara with Pitta involvement. A comprehensive management approach incorporating Nidana Parivarjana, Dosha pacification, ocular nourishment, and lifestyle regulation offers a rational and holistic strategy for prevention and management.

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