

Ayurvedic Approach on Computer Vision Syndrome

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Abstract

Computer vision syndrome (CVS) is one among the lifestyle disorder in present era. CVS is a complex of ocular and visual problem due to near work which is experienced during the use of computer and television. It leads to ocular and systemic discomfort. Computer users will often assume awkward postures in order to position their eyes so that they can perform their work and develop musculoskeletal symptoms such as neck, back, and shoulder pain, eyestrain, blurred vision and dry eyes. Modern medicines do not have a definite treatment for this problem except lubricating eye drops whereas *Ayurvedic Kriakalpas* (i.e. *Ayurvedic* local ocular therapies) could suggest definite treatment to cure the CVS. *Aksitarpan* is one of ocular therapies which is done in CVS as it is a local refreshing and nourishing therapy. *Anjana* is also one of *Ayurvedic kriyakalpas* which helps in improving the condition of CVS. *Yoga* and *Pranayama* has a crucial role in CVS. Regular eye exercise is advised in patients of CVS. *Tratak* is a method of meditation which involves Concentrating on a single point such as a small object, black dot or a candle flame. Therefore, an *Ayurvedic* approach in understanding the *samprapti* and management thereafter is hypothesized for CVS.

Keywords

Computer Vision Syndrome, Aksitarpan, Anjana



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INTRODUCTION

Computer has become common in today society and is causing some serious health hazards, among which Computer Vision Syndrome (CVS) is one. CVS is defined as a complex of ocular or visual problems which are experienced during computer use. Symptoms of Computer Vision Syndrome (CVS) are dry eye, eye strain, and blurred vision, red eye, burning sensation, double vision and headache.

Computer Vision Syndrome has no direct reference in *Ayurvedic* classics; it can be correlated to symptoms of *Shushkakshipaka* of *Sarvaksiroga*. An *Ayurvedic* approach can be given on the basis of fundamentals of *Ayurveda*. *Nidana* and *Samprapti* can be understood by *trividha hetu's* (*astamya indriyartha samyoga, prajnapradha, parinama*) related to *chakshurendriya* (eye). The symptoms of CVS are related to *vata-pitta pradhana tri-dosa* vitiation at *chakshurendriya* leading to the *sthanasamshraya* (lodged) in *netra* (eyes).

OBJECTIVES

Review of references directly related to *Shalakya tantra* in *Sushruta Samhita uttara tantra* and *Astanga Hridhyam uttara sthana*.

PATHOPHYSIOLOGY OF VISION SYNDROME

Computer Vision Syndrome (CVS) describes a group of eye and vision-related problems that result from prolonged computer use. CVS affects 90% of people who spend three hours or more a day at a computer. Blink rate decreases to as low as 6–8 blinks/minute focusing on the computer screen. The normal blink rate is 16–20 per minute. Symptoms may still experience reduced productivity and accuracy. It leads to early evaporation of tear film due to decreased blinking rate.

Lipid layer which is formed from secretions of Meibomian, Zeis, and moll glands. Aqueous layer is formed by the secretions of lacrimal glands. Mucus layer consist of mucin secreted by conjunctival goblet cell & glands of manz. Three factors required for effective resurfacing of tear film are normal blink reflex, Contact between external ocular surface and lid & third is normal corneal epithelium. Function of Lipid layer is to prevent evaporation of aqueous layer & act as surfactant. Function of Aqueous layer is to supply oxygen to corneal epithelium & wash out debris & noxious irritants. Function of Mucus layer is to help in lubrication.

DISCUSSION

The symptoms of CVS are irritated eyes, eye

strain, blurred vision, red eyes, burning eyes, double vision and headache¹. So these symptoms are related to *vata-pitta pradhana vyadhi* of *Shushkakshipaka*. *Shushkakshipaka* is one among “*Sarvagata Netra Rogas*” mentioned by *Sushruta* as well as *Vagbhata* under *Sadhya Vyadhis*, caused by *Vata* and *Pitta Doshas* having symptoms of *Gharshna* (gritting sensation), *Toda* (pricking pain), *Bheda* (pain), *Upadeha* (coating), *Krichronmeelan* (difficulty in opening and closing of eye lid), *Vishushkata* (dryness), *Rooksha Daruna Vartma* (dryness of eyelids)². These symptoms can be correlated with the symptoms of CVS in modern system of medicine³.

Shushkakshipaka is a disorder of the eye characterized by difficulty while closing the lids because of *Daruna Rooksha Vartma Yat Kunitam* (Hardness and Roughness of the Eye Lid), *Avila Darshana* (Patient cannot see the Objects Clearly), *Sudarunam Yat Pratibhodanam* (Difficulty in Opening/Closing the Eye).

According to *Vagbhata* it is characterized by *Gharshna* (Foreign Body Sensation), *Toda* (Pricking Pain), *Upadeha* (Loss of Clear Vision), *Rooksha Daruna Vartma* (Hardness and Roughness of the Eye Lids), *Krichra Unmeela Nimeela* (Difficulty in

Closing and Opening of Eye Lids), *Sushkata* (Dryness), *Shoola* (Pain), and desire for cold⁴.

The vitiated *Vata and Pitta Doshas* passing through *Sira's* gets accumulated in the parts of the eye like *Vartma*, *Sandhis*, *Shukla Mandala*, *Krishna Mandala*, *Drusti Mandala* and manifests the disease *Shushkakshipaka*.

Dosha – Vata and Pitta, *Dushya – Rasa*, *Rakta*, *Mamsa*, *Medha*, *Srotas – Ra-savaha Srotas*, *Srotodruti Prakara – Sanga*, *Rogamarga – Madhyama*, *Adhistana – Shiras*, *Vyakta Stana – Nethra* (all the *Netra Mandalas*). Hence looking into the *Ayurvedic* treatment modalities, the drug should have *vata-pitta* property⁵. So, internally administration of medicated ghee of *jeevainya gana drugs* (*jivaka*, *rsabhaka*, *meda*, *maha-meda*, *kekoli*, *mudaparni*, *masparni*, *jivanti*) which has plays a major role. So, externally *pariseka* (eye wash) with warm milk added with *saindhava* are treatment for the eyes of CVS⁶. *Saindhava*, *devadaru*, *sunthi*, *juice of matulunga* boiled with ghee and added with breast milk should use as *anjana* (collyrium)⁷. Internally administration of *draksha*, *patola*, *candana*, *guduchi* in the form of *kashyam* is ideal to cure CVS^{8,9}. *Ascyotana* (eye drops) with

darvi, manjista kwatha can be administrated^{10,11}.

According to Sushruta

Ghrita Pana Oral administration of Ghee, *Tarpana* (nourishment of eyes) with *Gritha* which is prepared by *Jeevaniya Gana Dravyas.*, *Nasya* (nasal administration of medicated oil and ghee) with *Anutaila* or any *Brumhana Taila.*, *Parisheka* with *Saindhavalavana* + Cold Milk. *Saindhava Lavana* + *Devadara* + *Shunti* + *Matulunga Swarasa* + *Ghrita*.

According to Vagbhata

Anjana (collyrium) with - *Shunti* + *Stanya* + *Ghrita*, *Anupa Mamsa* + *Shunti* or *Saindhava Lavana Saindhava Lavana* + *Devadaru* + *Shunti*

MODE OF ACTION OF TARPAN

Tarpana is generally done with *Ghrita* which is *Madhur-Madhur-Sheeta* so; it is best for *Vatapitta* vitiated diseases. Also *Netrendriya* is *Majja Dhatu* predominant organ and *Ghrita* nourishes *Majja Dhatu*, so it is *Balya* for eye. According to modern pharmacology, various drugs used in the form of eye drops or eye ointments enter the eyeball by passing through the cornea. This penetration depends upon the permeability of various layers of cornea. The epithelium and endothelium is highly permeable for

lipid content as compare to Stromal layer. Fat soluble drugs readily penetrates these layers. Water soluble drugs can penetrate the Stromal layer. Thus for complete penetration of drugs it should be lipophilic and hydrophilic. Eg. *Triphala Ghrita* and *Triphala Kwath*. The *Triphala Ghrita* used for *Tarpana* is saturated with decoction of various drugs. *Tarpana* with *Ghrita* leads to maintain the lipid layer of tear film which reduces the evaporation of aqueous layer of tear film. So it keeps the tear film in normal state, maintaining nutrition of eyes

Yogic practices:

Yogic practices help to reduce eyestrain and also build up the stamina of eye muscles. The preparatory eye practices of sideward, diagonal, circular, upward and downwards viewing are helpful.

These included left and right gazing, upwards and downwards gazing, nose tip gazing and eyebrow centre gazing. Participants have asked to blink frequently and intentionally during the practices to provide a good tear film for healthy eyes. Gazing at distant objects has to practice intermittently during the practices to provide relief to eyeball muscles. Splashing the eyes with water was taught and the participants were advised to carry out the practices at

their place of work.

The *Asanas* included *vajrasana*, *shashankasana*, *pawanmuktasana I and II*, *utthitadwipadasana*, , *bhujangasana*, & *hastapadasan* . The *pranayamas* that practice included *bhramari*, *sheetali* and *sheetkari*. The participants also took part in singing devotional songs and meditation sessions.

TRATAKA

Trataka is practiced in two stages. In the first stage, the practitioner fixes attention on a symbol or *Yantra*, such as the “Om” symbol, a black dot, or the image of some deity, and stares at it, paying attention to each thought and feeling as it arises, and letting them go, so that the mind is completely absorbed with the symbol. The practice continues until the eyes begin to water, at which point they are closed, and relaxed. The focusing exercises and *Trataka* improve the ability to make visual adjustments, the accommodation reflex and concentration, and help to stimulate as well as relax the eye muscles. The palming, blinking and splashing exercises relax the eye muscles.

The second stage is staring at a candle flame. The practice is the same up until the eyes begin to water, after which the eyes are

closed, and the patient tries to concentrate on the after image, and hold it for as long as possible. At first, it will be a real after image, but later, it will exist only in the mind's eye, and the exercise in concentration comes from trying to hold it there for a long period of time.

Prevention of Computer Vision Syndrome:

When working at a computer, there are certain preventive measures that can reduce eyestrain. Good tips to keep in mind are position the monitor 20 to 26 inches away from the eyes, arrange light sources in a position that will minimize glare and reflections on the screen blink frequently to moisture the eyes and take vision breaks from your computer. Make sure your computer screen is 20 to 24 inches from your eyes at about 20° below eye level. If you use a document holder, keep it close to the screen. Dim overhead lights and keep desk lamps low and properly adjusted, so that the light doesn't enter your eyes or fall on screen. Every 15 minutes, focus on distant objects to relax your muscles. If needed, use an anti-reflective filter on the screen.

CONCLUSION

Computer has become an integral part of office equipments. Because of the high use of computer there has been a considerable increase in visual problems, leading to the risk of developing CVS. So, the application of *seka* and *aksitarpana* with *vatapittahara dravyas* constitutes the basic therapeutic approach in the management of CVS. . The focusing exercises and *Trataka* improve the ability to make visual adjustments, the accommodation reflex and help to stimulate as well as relax the eye muscles. All the yogic practices had a definite purpose. The palming, blinking and splashing exercises relax the eye muscles. Hence, it can be implemented in all places of computer utility.

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