Ayurvedic Approach on Computer Vision Syndrome

Nitesh Meghwani\textsuperscript{1,*} and A.B. Deshmukh\textsuperscript{2}

\textsuperscript{1,2} Shalakya Tantra Netrarog Dept. GACH, Nanded, Maharashtra, India

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
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 Shushakshipaka 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 indriyarththa 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 headache. So these symptoms are related to vata-pitta pradhana vyadhi of Shushakshipaka. Shushakshipaka 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), Krirchonmeelan (difficulty in opening and closing of eye lid), Vishushkata (dryness), Rooksha Daruna Vartma (dryness of eyelids). These symptoms can be correlated with the symptoms of CVS in modern system of medicine.

Shushakshipaka 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 character-ized by Gharshna (Foreign Body Sensation), Toda (Pricking Pain), Upadeha (Loss of Clear Vision), Rooksha Daruna Vartma (Hardness and Roughness of the Eye Lids), Krirchra Unmeela Nimeela (Difficulty in Closing and Opening of Eye Lids), Sushkata (Dryness), Shoola (Pain), and desire for cold.

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 Shushakshipaka.

Dosha – Vata and Pitta, Dushya – Rasa, Rakta, Mamsa, Medha, Srotas – Ra-savaha Srotas, Srotodrusti 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 property. So, internally administration of medicated ghee of jeevainya gana drugs (jivaka, rsabhaka, meda, maha-meda, kakoli, 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 CVS. Saindhava, devadaru, sunthi, juice of matulunga boiled with ghee and added with breast milk should use as anjana (colly-rium). Internally administration of draksha,patola, candana, guduchi in the form of kashyam is ideal to cure CVS. 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 *Anu Taila* 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 + Devadar + 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 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.
REFERENCES


