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An Ayurvedic review of Shushkakshipaka W.S.R. to dry eye syndrome

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Abstract

Eyes are one of the most powerful tool that anyone can have hence all efforts should be made to protect the eyes. Shushkakshipaka a well-known disease of eye which comes under sarvagata netra roga causes by vitiated by vata dosha according to acharya sushruta and acharya vagbhata said that it is a vata pittaja type of vyadhi. As the name suggests it causes shushk means dry, Akshi mean eye i.e. dryness in eye. Hence in modern science it can be compared to dry eye syndrome a condition in which chronic lack of sufficient lubrication or moisture on the surface of the eye present. For many years, this disease was considered to be reduction of aqueous part of the tear film, but now a days, it is proven that this disease leads to qualitative & quantitative unstable tear film during the open eye status with gritty feeling & photophobia associated with other symptoms. As etiopathogenesis wise, shushkakshipaka is vata-pittaja vyadhi and decreased ashru & akshi sneha present the aim of treatment should be vatashamak and kapha vardhak which will further increase tear production & stabilized the tear film. For treatment modern practitioner generally given tear supplement such as cellulose derivatives.

Keywords: Ayurvedic, Shushkakshipaka W.S.R., dry eye syndrome

Introduction

Acharya sushruta described 76 types of netra rogas according to different adhisthanas this disease occurs among sarvagata vyadhi^[1]. Prognosis wise it is a asastrakruta ausadha sadhya vyadhi. Acharya sushruta said about it-

यत् कूणितंदारुण रूक्षवर्त्म विलोकनेचाविलदर्शनं यत्,
सुदारुणं यत् प्रतिबोधने च शुष्काक्षिपाकोपहतं तदक्षि ||^[2]

A condition in which person having contracted eye with hard and dry lid, blurred vision with difficulty in opening and closing eye.

Acharya vagbhata also said that this disease is occurs due to vitiated vata-pitta dosha with having foreign body sensation, pricking or tearing pain in eye with stickiness. Lids are dry and hard with difficulty in closing and opening. Person having contracted and dry eyes with desire of cold things with feeling of pain and putrefaction^[3].

From the above statement it is vataj curable disease according to acharya sushruta where as vata pittaja according to acharya vagbhata. This difference in doshic attribution as well as in symptoms reflects that probably acharyas have described different stage of similar disease. While the description of acharya sushruta describes early stage, symptoms of acharya vagbhata shows progressive stage of disease

According to modern science the dry eyes occurs when tears are not able to provide adequate moisture. The disease in current days scenario is a global issue due to advent of computer, smart screen mobile etc. These equipments are similar to addiction for general population because due to continuous viewing the screen. Along with these factors hormonal disorder, excessive use of contact lens, over uses of certain drugs also have increased causes of dry eyes in very huge population.

The Swedish ophthalmologist H.S.C. sjogren in year 1933 published his original work referring to triad of dry eye, dry mouth and joint pain and coined term dry eye.

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There were various terms being used for the dry eye disease like, K.C.S. (Kerato conjunctivitis sicca), Xerosis, Sjogren Syndrome etc. The one term Xerophthalmia is now kept reserved to dry eye caused by vitamin A deficiency.

For many year it is thought that this disease was appeared due to reduction in aqueous part of tear film. But now a days concept is that dry eye is a disease of the ocular surface attributed to pleomorphic factor distributing the natural function and protective mechanism of the external eye leading to qualitative and quantitative unstable tear film during the open eye. It is largely undiagnosed condition that can substantially affect the quality of life. It can occur at any age in people who are otherwise healthy. It is more common with older when the individual produces fewer tears, and it is characterized by the symptoms of irritation, grittiness, burning of eyes.

Etiology: [4, 5]

Patient has multifactorial etiology disturbing qualitatively and quantitatively all component of tear, and these are-

Congenital

1. Riley day syndrome (associated with other symptoms)
2. Congenital alacrimia
3. Congenital absence of meibomian gland

Acquired

Predisposing factor

- Environmental factor- Hot, dry and windy climate, high altitude
- Cigarette smoking
- Vocational factor
- Contact lens wearing
- Thyroid dysfunction
- Vitamin A deficiency
- Incomplete closure of lid as seen in lagophthalmos, Blepharitis

Causative factors

- **Aqueous tear deficiency:** Also known as keratoconjunctivitis sicca. It is seen in alacrimia, paralytic hyposecretion, Sjogrens syndrome.
- **Mucin deficiency dry eye:** It occurs when goblet cell are damaged as seen in hypovitaminosis-A [xerophthalmia] and conjunctival scarring diseases such as Stevens-johnson syndrome, Trachoma, radiation and chemical burns.
- **Lipid deficiency and abnormalities:** Lipid deficiency is extremely rare but this is quite common in patients with chronic blepharitis and chronic meibomitis.
- **Impaired eyelid function:** It is seen in patient with bells palsy, exposure keratitis, symblepharon, pterygium.

Etiopathogenesis:

Looking into pathogenesis of the sushkakshipaka it is a disease in which vitiated doshas i.e. vata and pitta affected rasa and rakta dhatu along with ashru and akshi sneha. This disease affects' all parts of the eye characterized by paka (Inflammation of akshi due to shushkta -dryness) caused by altered coherence of ashru with ocular surface or lack of ashru.

Tears are necessary for maintaining the health of the front surface of the eye and for proceeding clear vision. With

each blink of the eyelid, tear spreads across the front surface of eye and cornea. Dryness is occur when tear production and drainage is not in balance. The core mechanisms of dry eye are driven by the hyperosmolarity and tear film instability.

Current concept of dry eye pathology in practically all type of dry eye starts with lymphocytic infiltration of lacrimal gland causes the inflammatory cells to suppress the normal lacrimal gland, acinar cells, decreasing their functionality over the time. These lymphocytes secrete their cytokines recruit other inflammatory mediators & causes fibrosis of the lacrimal gland. Thus process of apoptosis occurs. Auto-immune reactions also take part in the process.

Clinical Feature: [6, 7]

Patients of dry eye syndrome having these sign and symptoms;

Symptoms- Patients who have dry eye often complain of eye irritation, gritty or foreign body sensation, dryness, nonspecific ocular discomfort, burning, tearing, (reflex tearing) photophobia, intermittent sharp pain, facing problem while driving at night.

Blurry vision that improves with blinking or instillation of nonviscous artificial tears. Dry eye patients may have all same or none of these symptoms. Symptoms worsens in air conditioned room. Recurrent sty, chalazion, irritation of lid margin also present.

Signs- signs of dry eye are as below

- **Tear film signs:** Presence of stringy mucous and particulate matter in the tear film, absent marginal tear strip. Froth in tears along the lid margin is a sign of meibomian gland dysfunction.
- **Conjunctival sign:** Lusterless ocular surface or conjunctiva with mild congestion. Conjunctival xerosis and keratinization may occur.
- **Corneal signs:** Slit lamp examination shows corneal changes in the term of punctate epithelial erosion, mucus plaques and filaments. Cornea may lose lustre.
- **Other signs:** Inadequate tear volume, early tear film break up time shows on slit lamp examination. Meibomian gland dysfunction also observed. Schirmer-I test shows less wetting of tear strip.

Diagnostic Techniques: [7, 8, 9]

First we should perform complete eye examination that includes a complete history taking of overall health and eye health, which can help to diagnose the causes of dry eye. With the help of examining general body health we can find out any associated anomaly as found in Sjogren syndrome, Vitamin-A deficiency etc.

Test and Procedure that should be used to determine the dry eye are-

1) Schirmer-1 test: It measures total volume of tear or tear production by using schirmer strip i.e. a 5x35mm strip of filter paper which is folded 5mm from one end and kept in lower fornix at the junction of lateral one third and medial two third. The patient is asked to look up and not to close the eyes. After 5 minute amount of strip soaked by tears should be measured.

>15mm. soaked strip - shows normal stage of eye

5-10mm soaked strip - mild form of dry eye

<5mm soaked strip – severe form of dry eye

2) Fluroscein staining: Fluroscein sodium can be used to identify corneal epithelial defects and a useful tool in evaluating dry eye. The corneal surface will stain whenever there is a disfunction of cell to cell junction. The staining can show corneal superficial punctate epithelial erosion in patterns that are consistence in certain causes in dry eye.

3) Tear film break up time: The tear break up time (TBUT) measures stability of the tear film. With Fluroscein instilled, TBUT is the time interval after a patient blinks to the first appearance of dryness in the tear film. It is noted after instilling a drop of Fluroscein and examining in a cobalt blue light of a slit lamp. A patient is asked not to blink after instilling of Fluroscein. It is an indicator of adequate of mucin component of tears. Its normal values range from 15-35 seconds. The patient has dry eye if a dry area appears before 10 seconds.

Treatment

सैन्धवं दारु शुण्ठी च मातुलुङ्गरसो घृतम्, स्तन्योदकाभ्यां कर्तव्यं
शुष्कपाके तदञ्जनम् ॥
पूजितं सर्पिषश्चात्र पानमक्षोश्च तर्पणम्, घृतेन जीवनीयेन नस्यं तैलेन
चाणुना ॥
परिषेके हितं चात्र पयः शीतं ससैन्धवम्, रजनीदारुसिद्धं वा सैन्धवेन
समायुतम् ॥
सर्पिर्युतं स्तन्यघृष्टमञ्जनं वा महौषधम्, वसा वाऽऽनूपजलजा सैन्धवेन
समायुता ॥
नागरोन्मिश्रिता किञ्चिच्छुष्कपाके तदञ्जनम् ॥^[10]

All Acharyas said that shuskakshipaak is ashastrakruta ausadha sadhya vyadhi. In this disease vitiated doshas i.e. vata and pitta affects rasa, rakta dhatu and ashru and akshi sneha hence aim of treatment should be vata pitta shamaka and rasa rakta dhatu prasadana along with sneha vardhana effect.

In Sarvagata netra roga chikitsa adhyaya in contest of treatment of shuskakshipaak, acharya sushruta suggested following treatment modalities.

- Anjana should be done, which is made up of powder of saindhav lavana, daruharidra, sunthi along with lemon juice and mixed with ghruta, it should be applied with stanya and small amount of water.
- Jivaniya ghruta paan and akshi tarpana with similar ghruta should also done preceded by anu taila nasya.
- Cold water parisheka mixed with saindhav lavana should be done.
- Rajanyadi ghruta can also use for anjana.

Acharya vagbhata also said almost similar yogas; as ghruta paana, jivaniya ghruta tarpana, anu taila nasya, netra parisheka. Besides these all remedies he also suggests application of keshanjana.^[11]

In modern medicine there is no sufficient treatment for dry eye, general measures should be taken for treatment of dry eye are;^[12, 13]

- First we should give psychosocial assurance.
- Supplementation of artificial tears or tear supplement: This is the main stay in treatment of dry eye. They are available in the form of drops and ointment. They are

generally cellulose derivatives such as methyl cellulose, hypromellose and poly vinyl alcohol.

- **Mucolytics:** 5% of acetylcystine used 4 times a day help by dispersing the mucus threads and decreasing tear viscosity.
- **Preservation of existing tears:** It can be achieved by reducing evaporation & decreasing drainage by following these modalities such as decreasing room temperature, use of moist climate & protection glass for reducing evaporation.

For decreasing the drainage of tears punctal occlusion can be carried out by collagen implants, cyanoacrylate tissue adhesives, electro cauterization and argon laser occlusion and surgical occlusion. But this is the last option and should be preserve for critical condition.

- **Preservation of moist surface:** By use of hydrophilic bandage & contact lens.
- **Systemic corticosteroids / NSAIDS drug:** They may help in low grade inflammation of lacrimal gland in some dry eye case.
- **Specific treatment:** Immunomodulators like cyclosporin A topical drops and Hormone replacement therapy can be given.
- Vitamin A supplements for deficiency.
- Treatment of lagophthalmous.

Conclusion

Causes, clinical features and treatment of Shushkaakshipaak described by our respected Acharyas are very similar to causes, clinical features, and treatment of dry eye described by modern doctors there for Shushkaakshipaak and dry eye can be correlated, which is a disorder of tear film due to tear deficiency or excess tear evaporation which causes damage to the interpalpebral ocular surface and is associated with symptoms of ocular discomfort as gritty and foreign body sensation in eyes.

Apart from these symptom dryness, burning, tearing, (reflex tearing) photophobia, intermittent sharp pain, facing problem while driving at night also present.

Hence on the basic of Shrotodusti Lakshana it can be concluded that Shushkaakshipaak is originated by *Sang* type of *Shrotodusti*.

Treatment wise it is a ashastrakruta ausadha sadhya vyadhi. In this disease vitiated doshas i.e. vata and pitta affects rasa, rakta dhatu and ashru and akshi sneha hence the treatment should be vata pitta shamaka and rasa rakta dhatu prasadana along with sneha vardhana effect.

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