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REVIEW ARTICLE

ROLE OF KRIYAKALPA IN THE MANAGEMENT OF EYE DISEASES

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ABSTRACT

Shalakyatantra is one of the branch of *Ayurveda*, which associates with conditions of eye, ear, nose throat and mouth and also called that disorder related to the *Urdhvajatru* i.e. above clavicle region. *Ayurvedic Acharya* has stated that the eye is one of the most important organ amongst all: “*SarvendriyanamNayamPradhanam*” in the *Samhita*. It is most importance to maintain the health of the eyes and cure diseases in an effective manner. *Acharya* have mentioned detailed local therapeutic procedures to administer and cure *urdhvajatrugata* diseases in simple and effective methods. *Acharya Sushruta* termed them as *Kriyakalpa*. *Kriyakalpa* is the procedures in which medications/ medicated drugs are applied in or around the eyeball. It is very necessary to keep the eyes healthy in their normal state. in this article we will expound various *Kriyakalpa* and various formulations mentioned in *Ayurveda*.

KEYWORDS: *Kriyakalpa, Netraroga, Aschyotana, Tarpana , Putpaka, Anjana, Seka, Pindi, Bidalaka*



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INTRODUCTION

Eye is the important part of *Shalakyatantra*, *Ayurveda* comprises use of various para surgical/surgical procedures in *Shalakyatantra* for the management of *NetraRoga* i.e. *Netrabhishyanda*, *Puyasrava*, *Adhimantha*, *Timir*, *Utsangini* etc.. *Yantra*, *Shastra*, *Anushastra* are mentioned by *Acharyas* for the various procedures for the diseases.

The word *Kriyakalpa* itself consists of two words which are *Kriya* and „*Kalpa*“. *Kriya* refers to the therapeutic procedures that are carried out to cure the disease and the word *Kalpa* refers to the formulation of medicated drugs that is selected for use in that particular disease. *Kriyakalpa* is mentioned for *Netra*, diseases related to *kaya/agni*, any systemic disorders, *acharyas* have mentioned *Panchkarma* for their first line of treatment. Also, diseases related to whole body, they mention *Samshodhana* and *SamshamanaChikitsa*. Eye is the only organ in which they mention local application of medicine which named as *kriyakalpa*. *AcharyaSharangdhara* attributed to the concept of *NetraChikitsa* and named *kriyakalpa* as a *NetraPrasadanakarma*. *AcharyaSushruta*, he has clearly mentioned 5 types of *Kriyakalpa* which are. 1. *Tarpana*, 2. *Putapaka*, 3. *Seka*, 4. *Anjana*, 5. *Aschyotana*. In addition to these five *Kriyakalpa*, *Acharya Sharangdhara*, added the following two to the list.

6. *Bidalaka*

7. *Pindi*

TARPANA

Medicated ghee is filled in a flour compartment constructed around the eyes and left in place for a fixed duration of time. This procedure nourishes and strengthens the eye and cure the eye diseases. Before doing *Tarpana*, *Kaya Shodhana* by *Vamana*, *Virechana*, *Basti*, *Raktamokshana* or *Shiro Shodhana* with *Nasya* should be done.

Tamyati – feeling of darkness in front of eyes (also due to irritation after exposure to light)

Ativishushkam – excessive dryness of the eyes

Atidaruna – eyes appear to have hardened

Sheernapakshma – eye lashes falling down

Aavilanetram – dirtiness of eyes

Jihmanetram – abnormal deviation of eye ball

Rogaklishtam – eyes which have been constantly and repeatedly afflicted and debilitated due to many diseases

According to Site of Lesion	Time
<i>Sandhigata Roga</i>	300 <i>Matra Kaal</i>
<i>Vartamagata Roga</i>	100 <i>Matra Kaal</i>
<i>Shuklagata Roga</i>	500 <i>Matra Kaal</i>
<i>Krishnagata Roga</i>	700 <i>Matra Kaal</i>
<i>Dristigata Roga</i>	800 or 1000 <i>Matra Kaal</i>
<i>Sarvagata Roga</i>	1000 <i>Matra Kaal</i>
According to Dosha	Time
<i>Vataj Roga</i>	1000 <i>Matra Kaal</i> for 1 day
<i>Pittaj Roga</i>	800 <i>Matra Kaal</i> for 3 days
<i>Kaphaj Roga</i>	500 <i>Matra Kaal</i> for 5 days
In Healthy person	Time
<i>Swastha</i>	500 <i>Matra Kaal</i>

PUTAPAKA

Procedure is same as *Tarpana* but medicine preparation is different as *Swarasa* is extracted by *PutpakaVidhi*, Due to this method of preparation its called *Putapaka*. indication is similar to *Tarpana* as it can be done in all conditions that is indicated for *Tarpana*. It is used for Nourishment of the eyes, after the eyes gets fatigued. Medicated Ghee or *Swarasa* (extracted by *PutapakaVidhi*) is kept over the eyes for a specified time.

<i>Putapaka</i> Types	Dosha	Duration / time period
<i>Snehana Putapaka</i>	<i>Vataj</i>	200 <i>Matra</i> l 3 days
<i>Lekhaniya Putapaka</i>	<i>Kaphaj</i>	100 <i>Matra</i> l 1 day
<i>Ropaneeya Putapaka</i>	<i>Pittaj-</i>	300 <i>Matra</i> l 2 days

SEKA/ PARISEKA

NetraSeka, *Netra Pariseka* or *NetraDhara* is an *Ayurvedic* treatment procedure of pouring medication fluids in the form of streams (*Sukshmadhara*) in and around the closed eyes (*Pariseka*) from a height of four *Angula*.

The quantity and temperature of the liquid to be poured depend on the illness effected to the eyes. When eyelids are unable to open properly due to sticky ness in the eyes, foreign body present, before any surgical procedure related to eye, itching of eyes, watery eyes, conjunctivitis, burning eyes, dry eyes *Pariseka* can use. *Pariseka* should be done only in day time, but when doshas are in excessive state it can also done in night.

- ❖ *Snehana* in *Vataj Dosha* for 400 *Matra Kaal*.
- ❖ *Ropana* in *Pittaj & Raktaj Dosha* for 600 *Matra kaal*
- ❖ *Lekhana* in *Kaphaj Dosha* for 200 *Matra Kala*

ANJANA

Eye is considered superior in all organs, it has most harm from the *Kapha* dosha. Daily *Anjana* from *KaphaDoshharaDravya* can prevent and reduce eye disorders. *Acharyavagbhata* mentioned *rasanjana* interval of 7 days for healthy individuals. *Anjana* is also called as collyrium. Application of *Anjanadravya* to the inner surface of the lid margin, from inner canthus to outer canthus i.e. from *kaninikasandhi* to *apanga sandhi*. This procedure done when the *sodhana* procedure i.e. *vamana*, *virechana*, *shirovirechana* etc. are done and doshas are in its *Nirama* stage. When there is a swelling, itching, sticky discharge, redness, pain in eye, then it should be avoided.

AcharyaSushruta has mention 3 types of *Anjana* according to dosh predominance and its doses

1. *Prasadananjana* in *vatadosha* evening time
2. *Ropanaanjana* in *pitta* dosha at night time
3. *Lekhanaanjana* in *kapha* dosha at morning time

Some of the other preparations of *Anjana* mentioned by *Acharya Sharangdhara* are *Gutikanjana*, *Rasanjana* and *Churnanjanana* and these are applied to the eyes using *Anjana Shalaka*. The doses of these are given below.

AnjanaPreparation	Dose
<i>Gutikanjana</i>	<ul style="list-style-type: none"> • <i>Tikshna:1 Harenu</i> • <i>Madhyama:1 ½Harenu</i> • <i>Mridu:2 Harenu</i>
<i>Rasakriyanjana</i>	<ul style="list-style-type: none"> • <i>Uttama: 3VidangaPramana</i> • <i>Madhyama:2VidangaPramana</i> • <i>Hina:1VidangaPramana</i>
<i>Churnanjanana</i>	<ul style="list-style-type: none"> • <i>Virechanika:2Shalakas</i> • <i>Mridu:3 Shalakas</i> • <i>Snehaika:4Shalakas</i>

ASCHYOTANA

It is the first line of treatment in all eye-related disorders. Usually, the medicine (medicated ghee) is instilled into the eyes that are kept open in the form of drops. The mentioned height from which this should be done is 2 *Angula* and it should be retained in the eyes for 100 *Vakmatras* (approximately 2.5 minute).

It can be done in the following conditions: *Raga*, *Ashrusrava*, *Gharshana*, *Daha*, *Toda*, *Bheda*, *Paka*, *Sopha*, *Kandu* of the eyes. It is advised to be done only during the daytime. *Aschyotana* classification according to *Dosha* involvement and its corresponding dosage is given below

Karma	Dosha	Dosage	Time
<i>Snehana</i>	<i>Vata</i>	10 drops	Evening
<i>Ropana</i>	<i>Pitta</i>	12 drops	Afternoon
<i>Lekhana</i>	<i>Kapha</i>	8 drops	Morning

BIDALAKA

In this procedure, medicated paste is applied outer surface of the closed eyes, except the eyelashes. it looks like eyes of the cat, that's why it called *Bidalaka*. It is classified into 3 types according to the thickness of the paste, i.e. *Uttama* (Best), *Madhyama* (Moderate) and *Hina* (Minimum). *Bidalaka* is indicated in *Daha*, *Kandu*, *Sotha*, *Netrasrava*, *Netrashula* etc.

PINDI

Application of medicated drugs using *Bidalaka* procedure limited only up to skin of the eyelids, and it dries in short time, for extend more time of this paste *Pindi* is used. *AcharyaSharangdhara* has mention *Pindi*: Poultice made up of a cotton cloth and in which medicated drug in warm or cold stage is kept, after that it should be used, *Pindi* is also called *Kavalika*. *AcharyaBhavprakasha*, mention *kavalika* according to the dosha and property of drug given below.

DOSHA	PROPERTY OF DRUG
<i>Vata</i>	<i>Snigdha, ushna</i>
<i>Pitta</i>	<i>Shita</i>
<i>Kapha</i>	<i>Ruksha, ushna</i>

DISCUSSION

Kriyakalpa are the local procedures specially mentioned for the treatment of eye disorders. Each procedure have their own importance and different therapeutic action.

MODE OF ACTION**Aschyotana-Eye drops**

- In the aschyotana, the drug use in the conjunctival sac in the form of liquid solution and the period of tissue contact is very less; hence the bio-availability is very short. 80% of each drop is immediately drained throughout the naso lacrimal duct. The dose of drug applied at one time vary from 8 to 12 drops; mass drug action incident also play a role in absorption.
- Aschyotana Kriyakalpa is indicated in the acute phase of inflammation where as in the corneal and conjunctival epithelia permeability is high; hence the absorption is more.

Seka-Irrigation of the eye ball.

- Instillation of medicated solution into the close eye, continuously for a stipulated time period. Solution used is prepared as decoction of different parts of plants. Disposal rate is more, by over flowing of the drug and drainage through NL duct.

- Absorption of Seka is more as compared to Aschyotana because comparative drug quantity used as well as tissue contact time is also more.

Anjana-Application of Collyrium :

- A topical application of drug in the form of smooth paste into the conjunctival fornices with an applicator./ Although Anjana are meant for eye diseases yet it has wide application in systemic diseases too.
- Anjana preparation are compound drugs prepared out of metal, minerals, herbs and animal materials. Generally arsenic, antimony, lead and tin compounds are frequently used.
- The metals in anjana preparation having larger molecular weight do not cross the blood aqueous barrier when administered systemically.
- Probably it acts as (subconjunctival injection, permeability is also possible through sclera and enter to systemically.
- In Anjana procedure the tissue contact time is more so bioavailability will be increased.

Tarpana Keeping or retaining medicated Ghee or oil

- Absorption of the drug in Tarpana procedure is more because drugs used are lipid solution/suspension. Penetration of fat substance is high irrespective of molecular size. Tissue contact time of the drug is also more so that the bio-availability and therapeutic concentration can be achieved.

Putapaka

- Compliance, disposal and tissue contact time are also same as in tarpana
- As far as the absorption is concerned; drug being a suspension of fat and water soluble contents; should have more absorption than Tarpana.

Bidalaka and Pindi

- In Bidalaka topical application of drugs in form of paste over the skin of lids are indicated in acute inflammatory condition of eye.
- In pindi lukewarm paste in the form of poultice is applied on the closed eye for the purpose of sudation and drug application. The poultice can be of bandaged over the eye. The drugs are absorbed through skin acts locally, as well as by the vasodilation

and drainage of toxins from the site application. In pindi filtered drug solution also reaches the conjunctival sac through the medial canthus of eye.

CONCLUSION

From above all discussion we can say that firstly it is utmost importance to maintain the health of the eye, keep it in its healthy and normal state, and remove local dosha in an effective manner. In *Ayurveda*, *swasthasya swasthya rakshanam aaturasya vikara prasanam cha* is mentioned . *kriyakalpa* can applied in diseased condition as well as use for eye strengthening, and nourishment in healthy person. *NetraPariseka, Aschyotana, Pindi, Bidalaka* can done in the *Aamavasta* of *Roga*,, also can use in acute condition of *VranaSotha*, while *doshas are in their nirama avastha* , and also for healthy individual *tarpana* , *anjana* can be usefull..

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