Elaneer kuzhambu anjana, Triphala kwatha parisheka along with *Triphala churna* orally in the management of *Prastari arma* (Pterygium)- A case study

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Abstract

Shalakya tantra is one of the specialties described in *Ashtanga* Ayurveda which deals with diseases with sense organs occurring in *Urdhwanga* (above the clavicle). The eyes are one of the utmost sensitive and susceptible organs in the body. *Acharya* Sushruta has mentioned 76 *Netra roga* while *Acharya* Vagbatta and *Sharangadhara* have mentioned 94. Susruta Samhita and Ashtanga Hridaya Samhita respectively mentions eleven and thirteen *Shuklagata roga* (diseases of the sclera) *Prastari arma*, *Shukla arma*, *Rakta arma, Adhimamsa arma* and *Snayu arma* are 5 types of *Arma* which are classified under the *Suklagata roga.* Among the five types, *Prastari arma* is characterized by gradually developing wing like encroachment of *Shuklamandala* from either *Kaninika sandhi* (inner canthus) or *Apanga sandhi (*outer canthus) towards *Krishnamandala*, which causes discomfort in the eye. *Prastari arma* can be correlated with Pterygium and it is more common among people who are residing in tropical and subtropical areas. Risk factors are exposure to sunlight, dry and dusty climate and smoke. Pterygium is a common ocular disorder in India due to disease favorable geographic and climatic conditions. In this clinical study, an effort has been made to establish an effective Ayurveda treatment protocol in the management of *Prastari arma*. A 35 years old female patient from Jamnagar came to OPD of *Shalakya tantra* with chief complaints of pinkish, triangular shaped elevation in her right eye with foreign body sensation, dryness, burning sensation and sensitivity to bright light. The patient was diagnosed as having *Prastari arma* and was given *Elaneer kuzhambu anjana, Triphala kwatha parisheka* with *Triphala churna* orally for thirty days. The effectiveness of the line of treatment was assessed on the basis of signs and symptoms before and after the treatment. A special scoring system was adopted for assessing signs and symptoms of the disease. The medication was found safe and effective in curing the disease condition of *Prastari arma.*

Keywords: Pterygium, *Suklagata roga*, *Urdhwanga*, *Prastari arma*

Introduction

Shalakya tantra is one of specialties described in *Ashtanga Ayurveda* which deals with diseases with sense organs occurring in *Urdhwanga* (above the clavicle)[1]. Eyes are one among these sense organs and one of the utmost sensitive and susceptible organs in the body. *Acharya* Sushruta has mentioned 76 *Netra roga* while *Acharya* Vagbatta, *Acharya* Sharangadhara have mentioned as 94, *Acharya* Caraka mentioned as 04 diseases and *Acharya* Bhavamisra, *Acharya* Yogaratnakara mentioned as 78 diseases[2]. *Netra roga* are classified into *Sandhigata roga*, *Vartmagata roga*, *Suklagata roga*, *Krishnagata roga*, *Sarvagata roga*, *Drishtigata roga* and *Bahya roga*[3]. Number of *Suklagata roga* (Diseases of the sclera) mentioned are 11,13 in Susruta Samhita[4] and Ashtanga Hridaya Samhita[5] respectively. *Arma* is one of them which are five in number namely *Prastari arma, Shukla arma, Rakta arma, Adhimansa arma* and *Snayu arma.*[6]

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According to Sushruta Samhita, *Arma* is characterized by gradually developing wing like encroachment of *Shukla mandala* from either *Kaninika sandhi* (inner canthus) or *Apanga sandhi* (outer canthus) towards *Krishnamandala*, causing discomfort in eye. *Prastari arma* can be correlated with Pterygium.[7] Foreign bodies such as infections, ultraviolet rays, pollutants, dust and other particles can contact directly on the surface of the eye to cause eye diseases. Pterygium is a triangular shaped fibrovascular sub-epithelial growth of degenerative bulbar conjunctival tissue. The sub-conjunctival tissue is undergoing elastic degeneration and proliferates as vascular granulation tissue under the epithelium, which is ultimately encroaches the cornea.[8] It is not only cosmetically disfiguring the eye but also can lead to visual disturbance. It is more common among people who are residing in tropical and subtropical areas. Risk factors include exposure to sunlight (*Atapa*), dry and dusty climate (*Raja*), smoke (*Dhuma*) etc[9]. Pterygium is a very common ocular disorder in India due to favorable geographic and climatic conditions for the disease Pathophysiology. It affects all age groups and both sexes. It is a common cause of ocular morbidity and a major public health concern in the rural areas of developing countries. The prevalence of pterygium in the total population is about 12% (95% confidence interval [CI] 11–14%). The lowest and highest prevalence rates are 3% (95% CI 0.0–9%), 19.5% (95% CI 14.3–24.8%) in the 10 to 20-year age group and in those over 80 years respectively. Pterygium prevalence in rural Central India is about 13%[10] among adult Indians aged above 30 years. Older age, male gender, lower educational level, lower body height and more time spent outdoors with vigorous work are the associated factors[11]. *Arma* can be managed by *Lekhana anjana* when its early stage. *Acharya* Sushruta also explained a surgical procedure[12] for the management of *Arma* when it is not treated in its early stage and causes complication. The *Arma* which is in early stage and having thin membrane and curd like colored can be treated by *Netra kriyakalpa* like *Anjana* and *Parisheka* unless its growth encroach to the *Krishnamandala* where surgical removal is compulsory[13]. Thus a systematic effort was carried out to establish the efficacy of *Elaneer kuzhambu anjana*, *Triphala kwatha parisheka* with *Triphala churna* orally in the management of *Arma* (Pterygium). This case study was aimed to establish a suitable treatment protocol which is effective and less irritative for the management of the *Prastari arma*.

Materials and Methods

Study setting

OPD (Outpatient Department) of *Shalakya tantra* department, I.P.G.T & R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India.

Case report

A 35 years old female patient attended with chief complaints of fleshy mass on nasal side of bulbar conjunctiva (*Vistirna rudhiraprabha mamsa)* with foreign body sensation in right eye since 06 months, dryness in both eyes (more in right eye) since 03 months, burning sensation in the right eye since 05 days and sensitivity to bright light in the right eye since 03 days. Furthermore, patient stated the history of the disease that a pinkish, triangular shaped elevation was aroused in her right eye approximately 06 months prior to her first visit. After 03 months, patient experienced dryness of both eyes especially in the right eye and used artificial eye drops for the same having been advised by her family physician. Then, before 05 days of the visit, patient had experienced burning sensation in right eye. Sensitivity to bright light in the right eye had been experienced 03 days before. Being a computer operator, the disease in the patient had been aggravated by prolonged use of computer, mobile, television, sun exposure, dry climate and inadequate sleep while relief into some extent had been provided by adequate sleep. No any relevant past history was found relevant to the disease and the patient said that her father had also suffered from this disease condition.

Personal history: Personal history has been mentioned in Table 1.

Table 1: Personal history

Micturition	Day time-5-6 times At night- 0 times
Bowel habit	Regular
Sleep	Disturbed Sleep At night – 4 to 5 hours Day time – no
Addiction	No any
Blood Pressure	120/70 mmHg
Pulse rate	73/min
Respiratory rate	14/min

Clinical findings

Ashtavidha pariksha*: Ashtavidha pariksha* (eight fold classifications) has been mentioned in Table 2.

Table 2: *Ashtavidha pariksha*

Nadi (Pulse)	73 beats/min *Dosha-Vatapittaja* Regular
Mutra (Urine)	Day time-5-6 times At night- 0 times Colour-Straw colour
Mala (Stool)	1-2 times in day
Jihva (Tongue)	*Nirama*
*Shabda(*Speech)	*Spashta* (Normal)
Sparsha (Touch)	*Ruksha*
Drk (Eyes)	*Vikruta* (abnormal)
Akruti (Built)	*Madhyama*

Diagnostic focus and Assessment

Gradation of signs and symptoms of *Prastari arma* is according to comprehensive system of Pterygium Classification.[14]Grades of assessment of overall effect of therapy has been mentioned in Table No. 3, 4,5,6 and 7.

Table 3: Grading of *Rakta* (Conjunctival and Corneal Tissue Surface Vascularity)

Sr.no	*Rakta* (Conjunctival and Corneal Tissue Surface Vascularity)	Grading
1	No discernable vascularity	0
2	Minimal papillary response without visible intact vessels	1
3	Moderate vascularity and vessel congestion, denser than conjunctiva	2
4	Severe vascularity with vessel congestion and dilution	3

Table 4: Grading of *Mamsa vriddhi* on *Suklamandala* (Fleshy conjunctival tissue)

Sr. no	*Mamsa vriddhi* on *Suklamandala* (Fleshy conjunctival tissue)	Grading
1	Absent	0
2	Mild *Mamsa vriddhi* on Limbus	1
3	Encroached cornea up to 1mm from Limbus	2
4	Encroached cornea >1mm	3

Table 5: Grading of Conjunctival Tissue Thickness

Sr. no	Conjunctival Tissue Thickness	Grading
1	Flat Tissue	0
2	Minimally elevated tissue	1
3	Tissue elevation up to 1mm with minimal or no epithelial staining	2
4	Tissue elevation up to 1mm with minimal or no epithelial staining	3

Table 6: Grading of *Prakasa asahishnuta* (Photophobia)

Sr. no	*Prakasa asahishnuta* (Photophobia)	Grading
1	Absent	0
2	Sensitivity to bright sunlight and other bright illuminations	1
3	Sensitivity to mild sunlight but comfortable with dim light	2
4	Sensitivity to even dim light with inability to open eyes	3

Table 7: Grading of *Garsha* (Foreign Body Sensation)

Sr. no	*Garsha* (Foreign Body Sensation)	Grading
1	Absent	0
2	Occasionally	1
3	Intermittent	2
4	Continuous	3

Investigations

Haematological investigations

Blood investigations (Hb, TLC, DLC, ESR values) of the patient were in normal limits.

Therapeutic intervention

Treatments given to the patient have been enlisted in Table 8. Patient was advised to avoid direct sunlight, UV light and wind. Also patient was advised to avoid contact with sand, dust, pollen and smoke.

Follow up

After completion of treatment, the patient was followed up for 14 days at intervals of 07 days. Patient was completely free from the previous signs and symptoms and no any fresh complaint was found during the 07th and 14th day of follow up.

Results

After 15th and 30th day of assessments, variations in results were found on each symptom associated with *Prastari arma*. Results of the treatment were tabulated and analyzed. Patient got relief in signs and symptoms with gradual improvement. Effects of the treatment on the patient are presented in Figure 1,2 and 3. Assessment on each considering symptoms of *Prastari arma* has been presented in Table 9.

Outcome

It was observed that after 15 days, complaints such as *Rakta* (vascularity), *Prakasa asahishnuta* (Photophobia) and *Garsha* (foreign body sensation) were suppressed into the next preceding grade except *Mamsa vriddhi* on *Suklamandala* (fleshy conjunctival tissue) and corneal tissue thickness which was not changed during this period. At the 30th day, it was observed that all the signs and symptoms were relieved completely.

Table 8: Posology of treatment protocol

S. No.	Drug	Dose	Route	Duration
1	*Triphala churna*	3 gm Nocte with Luke warm water	Orally	30 days
2	*Elaneer kuzhambu*	1 *Vidanga matra* (60-70 mg) twice daily in morning and evening (followed by *Parisheka)*	External Application (*Anjana*)	30 days
3	*Triphala kwatha*	twice daily for eye wash (*Parisheka*) (after applying *Anjana*)	Eye wash (*Parisheka*)	30 days

Table 9: Assessment on considering symptoms of *Prastari arma*

Sr. No.	Signs and Symptoms	1st Day (Before Treatment)	(After Treatment)	
			15th day	30th day
1	*Rakta* (vascularity)	3	2	0
2	*Mamsa vriddhi* on *Suklamandala* (Fleshy conjunctival tissue)	2	2	0
3	Corneal Tissue Thickness	2	2	0
4	*Prakasa asahishnuta* (Photophobia)	3	2	0
5	*Garsha* (Foreign body sensation)	3	1	0

Figure 1: Before Treatment

Figure 2: After 15 Days

Figure 3: After 30 Days

Table 10: *Rasa panchaka* of *Elaneer kuzhambu anjana* [15]

No	Drug	Botanical names	*Rasa*	*Guna*	*Virya*	*Vipaka*
1	*Haritaki*	*Terminalia chebula*	*Pancha rasa* (*Kashaya pradhana* and *Lavana varjita*)	*Laghu, Ruksha*	*Ushna*	*Madhura*
2	*Bibhitaka*	*Terminalia bellirica*	*Kashaya*	*Laghu, Ruksha*	*Ushna*	*Madhura*
3	*Amalaki*	*Phyllanthus emblica*	*Pancha rasa* (*Amla pradhana* and *Lavana varjita*)	*Laghu, Ruksha*	*Sheeta*	*Madhura*
4	*Yashtimadhu*	*Glycyrrhiza glabra*	*Madhura*	*Guru, Snigdha*	*Sheeta*	*Madhura*
5	*Daru haridra*	*Berberis aristata*	Fruit-*Madhura, Amla, Kashaya,* Bark-*Tikta, Kashaya*	*Laghu, Ruksha*	*Ushna*	Fruit-*Madhura* Bark-*Tikta, Kashaya*
6	*Narikela*	*Cocos nucifera*	*Madhura*	*Guru, Snigdha*	*Sheeta*	*Madhura*
7	*Shashi*	*Cinnamomum camphora*	*Katu, Tikta, Madhura*	*Laghu, Teekshna*	*Sheeta*	*Katu*
8	*Saindhava*	Rock salt	*Lavana, Madhura*	*Laghu, Snigdha*	*Anushna Sheeta*	*Madhura*
9	*Makshikam*	Bee Honey	*Madhura, Kashaya*	*Laghu, Ruksha*	*Ushna*	*Katu*
10	*Peeta rohini*	*Gmelina arborea*	*Tikta, Katu*	*Laghu, Ruksha*	*Ushna*	*Katu*

Table 11: *Rasa panchaka* of *Triphala churna* and *Kwatha*

No	Drug	*Rasa*	*Guna*	*Virya*	*Vipaka*
1.	*Haritaki*	*Pancha rasa* (*Kashaya pradhana* and *Lavana varjita*)	*Laghu, Ruksha*	*Ushna*	*Madhura*
2.	*Bhibhitaka*	*Kashaya*	*Laghu, Ruksha*	*Ushna*	*Madhura*
3.	*Amalaki*	*Pancha rasa* (*Amla pradhana* and *Lavana varjita*)	*Laghu, Ruksha*	*Sheeta*	*Madhura*

***Rasa Panchaka* of the drugs**

Rasa Panchaka of the drugs are mentioned in the Table 10 and 12.

This combination of drugs is having all the 6 types of *Rasa*. Predominant *Guna* are *Laghu*, *Snigdha*, *Teekshna* and *Ruksha guna.* Both *Sheeta* and *Ushna virya* are present here. So, these drugs possess the quality of *Chakshushya, Rasayana, Tridosha shamaka*, mainly *Kaphahara*. Also, these drugs are having the properties of *Lekhana, Chedana, Kledopashoshana, Shodha guna* which can be the probable mode of scrapping the *Arma. Lekhana* property has been gained by *Tikta, Kashaya*[16] and *Laghu. Tikta rasa* shows *Chedaniya* property. *Katu rasa* and *Teekshna guna* possess the *Marga vivarana* function[17]. After the absorption of the drug, it may scrape away vitiated *Kapha, Ama* and *Meda* which are already lodged in the eye due to the above described inherent properties of the drug. It can also stop recurrence of the disease by balancing *Tridosha.*

Discussion

Effect of treatment on Foreign body sensation

The patient had complained of a continuous foreign body sensation at first day of treatment, gradually it had been decreased to occasionally feeling foreign body sensation after 15 days and was completely cured after 30 days.

Effect of treatment on Photophobia

The patient had complained of a sensitivity to even dim light with inability to open eyes at first day of treatment gradually it had been decreased to sensitivity to mild sunlight but comfortable with dim light in the 15th day of treatment and was completely cured after 30 days.

Effect of treatment on Vascularity

The patient had marked, unidirectional, engorged severe vascularity with vessel congestion before the treatment and it had been gradually decreased to moderate vascularity with vessel congestion and dilution. On the 30th day it was noticed that the pattern of vascularity was completely cured.

Effect of treatment on Fleshy conjunctival thickness

The patient had fleshy conjunctival thickness till encroached cornea up to 1mm from the limbs, which did not show any difference at 15th day of treatment and was completely cured in the last week of treatment.

Corneal tissue thickness

It was observed that the patient had tissue elevation in the cornea up to 1mm with no epithelial staining. There was no showing of any difference seen till 15th day and was completely cured after 30 days.

Mode of action of *Triphala churna*

Triphala which contain powder of 03 fruits in equal proportion *Haritaki, Bibhitaka* and *Amalaki.* It is a very powerful *Chakshushya* and *Rasayana* drug combination. *Triphala* along with metabolic stimulant activity breaks the *Abhishyandatva* of the *Srotas* by virtue of its *Ushna* and *Ruksha* properties[18]. *Triphala* improvising and stimulating the *Pachaka agni. Deepana* and *Pachana* quality produce a quality base essence of *Ahara rasa* making it bioavailable after assimilation, easily transformable thereby nourishes all types of *Pitta* including *Alochaka pitta*. *Mrdu virechaka*/*anulomaka* property of *Triphala* helps in improving the visual functions along with general body function. *Netra parisheka* with *Triphala*

Kwatha can act as *Tridosha Shamaka* and *Lekhana* which is suitable for *Arma*.[19]

Mode of action of *Elaneer kuzhambu anjana*

Anjana is a *Netra kriyakalpa*, a drug instilled into the eyes. It is effective in *Lakshana* like *Ragata*, *Daha* and *Shotha*. It has direct action on the ocular tissues especially on conjunctiva, therefore it is useful in conjunctival disorders[20]. It flushes out debris and unwanted tissues due to its *Lekhana* property.

Triphala, *Yasthimadhu* and *Daruharidra*[21] have the properties such as *Katu*, *Tikta*, *Madhura rasa*, *Katu vipaka* and *Ruksha guna*. therefore, all the above drugs having *Katu, Tikta rasa, Ruksha* properties give *Lekhana* and *Chakshushya* activity which is capable of scraping the debris without affecting the normal tissues of the eye ball.

All the drugs that have the properties of *Rasayana*, *Chakshushya*, *Tridoshahara*, *Sroto shodhaka* and *Shothahara* resulted in cumulative reduction of the disease.

Conclusion

In the present trial, *Elanner kuzhambu anjana* was found to be effective in reducing signs and symptoms of *Arma* and statistically significant results were seen. No adverse and toxic effects were observed during and after the completion of treatment. Modern ophthalmologists do not treat the pterygium in initial stage. But in *Ayurveda*, *Arma* which is even in initial stage can be treated with *netra kriyakalpa* like *Anjana* to prevent the speedy growth of the membrane. Moreover, it is highly beneficial after the surgical treatment for prevention of relapse. Therefore, *Elanner kuzhambu anjana* can be used safely and effectively in the treatment of *Arma* (pterygium). The recovery in the present case was promising and worth documenting. Further, more treatment with this *Anjana* for a large number of patients can be done since enough studies have not carried out with this combination of the drugs.

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