

# Ayurvedic Kriyakalpa Treatment in Keratoconus- A Case Report

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## ABSTRACT

Study reports a case of 10 years old male child who presented complaints with Blurriness in distant and near vision associated which aggravates during straining of eyes had habit of regular rubbing of eyes. The subject was diagnosed as Keratoconus after proper evaluation. *Ayurvedic kriyakalpa* treatment was initiated with *Netra seka*, *Netra abyanga*, *Achyotana* and *Netra pichu bandana*. The subject found that gradual reduction in symptoms after 7 days of treatment. It was observed that there was no progression after a month of followup.

**Keywords:** Keratoconus, Netra seka, Netra abyanga, Aschyotana, Netra pichu bandana, Triphala ghrita, Saphthamritha ghrita.

## INTRODUCTION

Keratoconus is a progressive non inflammatory condition, commonly bilateral (85%) in axial part of Cornea <sup>1</sup>. Pathology includes thinning of cornea near the center and progressively bulges forwards, with the apex of cone always being slightly below the center of the cornea. Conditions affect Keratoconus are Genetic predisposition, and due to Environmental factors such as recurrent rubbing of eyes, exposure to radiations <sup>2</sup>. Symptoms include blurriness in vision associated with glare, halos, photophobia. It can be managed by using spectacles, contact lens and surgical management as collagen cross linking, Intracorneal ring segments, Keratoplasty. If the progression of Keratoconus is not treated, it might lead to complication like corneal hydrops, corneal perforation and scarring. Keratoconus can be compared with *Vataja prathama patalgata timira*, a *Drishtigata netra roga* (diseases of vision) in *Ayurveda* characterised by blurred and distorted vision <sup>3</sup>. The classical management of *Timira* includes *snehana* and *vatahara* line of treatment which include *Seka*, *Aschyotana*, *Netra tarpana* which reduces the vitiated *vata dosha* present in *prathama patala* of *netra*. Here in, we report a case of keratoconus which was effectively managed with *Ayurvedic kriyakalpa* treatment.

## LITERATURE REVIEW

### KERATOCONUS

Definition- Keratoconus is a progressive bilateral corneal ectatic disorder characterized by cone-like steepening of the cornea, irregular stromal thinning, and significant vision loss <sup>2</sup>.

Epidemiology- In India, the prevalence is approximately 23/1000. Another study suggests that advanced keratoconus is more common in males <sup>4</sup>.

Etiopathogenesis- Exact etiology is idiopathic. But Keratoconus can cause due to

1. Genetic factors such as genetic predisposition and genetic mutation, and
2. Environmental factors such as Eye rubbing is being considered an important factor and accounts for the association of keratoconus with vernal keratoconjunctivitis and Down syndrome. Other environmental factors include contact lens use (especially RGP), UV light, atopy and some hormonal changes.

Clinical features:

- ❖ Symptoms: Progressive defective vision primarily due to progressive myopia and irregular astigmatism.

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Vision becomes progressively more blurred and distorted primarily from irregular astigmatism and myopia, and secondarily from corneal scarring which does not improve fully despite full correction with glasses. Associated glare, halos around lights, light sensitivity and ocular irritation <sup>5</sup>.

❖ Signs:

The hallmark of keratoconus is central or paracentral stromal thinning, apical protrusion of anterior cornea and irregular astigmatism. The cornea thins near the centre and progressively bulges forwards, with the apex of cone always being slightly below the centre of the cornea. Following signs may be elicited on examination:

1. Window reflex on cornea is distorted.
2. Placido disc examination shows irregularity of the circles .
3. Slit-lamp examination may show following corneal signs: Thinning and ectasia of central cornea, Opacity at the apex, Fleischer's ring at the base of cone, Folds in Descemet's and Bowman's membranes, Very fine, vertical, deep stromal striae (Vogt lines) which disappear with external pressure on the globe are peculiar feature.
4. Munson's sign, i.e. localised bulging of lower lid when patient looks down is positive in late stages.

CLASSIFICATION/GRADING <sup>6</sup>

Keratometry based grading:

- Mild: <48D
- Moderate: 48-54D
- Severe: >54D

Management <sup>7</sup>- Conservative management such as using of spectacles, contact lens will reduce the blurriness of vision. But contact lenses may be uncomfortable on keratoconic eye and patient may experience dryness, itching and pain. Surgical treatment includes Collagen cross linking (CXL) with UVA and riboflavin arrest disease progression and stabilize corneal tissue. Some other techniques are Intracorneal ring segment implantation in corneal stroma, and Keratoplasty.

CASE REPORT

➤ History of Present illness:

According to statement of subject's mother, male patient age of 10 years with not known case of Diabetes mellitus, Hypertension and Thyroid dysfunction was apparently healthy 15 days back. Gradually he started developing blurriness in distant and near vision associated with headache, irritation in eyes, feel of dryness in eyes and Halos. Patient had habit of regular rubbing of eyes during excessive irritation and continuous digital exposure (online classes). Complaint aggravates during excessive straining of eyes and after severe rubbing of eyes. There is no family and previous surgical history. There is no previous ocular infectious disease. So for further Ayurvedic management he visited Shalaky Netra OPD at Sri Dharmasthala Manjunateshwara college of Ayurveda and Hospital, Hassan.

➤ History of Past illness:

Patient have no past history systemically related to disease.

➤ Family history:

All family members are said to be healthy. No any significant history related to above disease was found.

➤ Personal history:

- i. BOWEL: Regular( 2times/day)
- ii. APPETITE: Unaltered
- iii. MICTURITION: Regular( 6-7 times/day)
- iv. SLEEP: Sound (around 7-8 hours/night)
- v. HABIT: Frequent rubbing of eyes, Digital exposure for 4-5 hours (online class session).

➤ *Asthasthana Pariksha*:

- i. *Nadi- Kapha-pitta nadi (71/min)*
- ii. *Mala-Prakrutha*
- iii. *Mutra- Prakrutha*
- iv. *Jihwa-Alipta*
- v. *Shabda- Prakrutha*
- vi. *Sparsha-Samyak*
- vii. *Drik- Blurriness in Distant and near vision*
- viii. *Akruthi- Madhyama*

- *Dosha Dushya Vikruthi and Adhithana:* K1-62.58  
K2-71.07
- i. *Dosha: Vata pradhana tridosha*
- ii. *Dushya: Rasa* Left eye:
- iii. *Adhithana: Akshi( Krishna mandala)* K1-46.25
- iv. *Srotas: Rasavaha* K2-50.10
- v. *Srotodushti prakara: Atipravritti*  
*Vimargagamana*
- vi. *Udhbhava Sthana: Pakvashaya*
- vii. *Sanchara sthana: Netravaha nadi*
- viii. *Vyakta sthana: Chakshu*
- ix. *Agni- Madhyama*
- x. *Ama-Jataragni mandya janya ama*

**TREATMENT PLAN**

1. Netra seka with Triphala choorna, Bala choorna, Yashtimadhu choorna Kashaya( BD)
2. Netra abyanga with Triphala Ghrita (BD)
3. Aschyotana with Sapthamritha Ghrita(10-10)(BD)
4. Netrapichu with Triphala ghrita(BD)

**ON EXAMINATION**

1. VISUAL ACUITY:  
Bilateral: 6/18(-1)  
Right eye: 6/36(-1)  
Left eye: 6/24(+2)  
Pinhole  
Right eye:6/36  
Left eye: 6/24  
Near vision:N9
2. AUTOMATED REFRACTION:  
Right eye:

**PATHYA**

- **PATHYA AHARA-** Patient was advised to take Ganji and Khiccidi diet and advised to avoid oily and spicy food while treatment period.
- **PATHYA VIHARA-** Patient was advised to stay warm and intake lukewarm. Also advised to avoid Rubbing of eyes, straining of eyes and to avoid day sleep.

**OBSERVATION**

SI NO	CRITERIA	DAY 1	DAY 3	DAY 7	DAY 15
1.	<b>VISUAL ACUITY</b>	Bilateral: 6/18(-1) Right eye: 6/36(-1) Left eye: 6/24(+2) Pinhole Right eye:6/36 Left eye: 6/24 Near vision:N9	Bilateral: 6/12(+2) Right eye: 6/36(-1) Left eye: 6/18 Pinhole Right eye:6/24 Left eye: 6/18 Near vision:N6(P)	Bilateral: 6/12(+2) Right eye: 6/24(-1) Left eye: 6/18(+1) Pinhole Right eye:6/12(+2) Left eye: 6/12 Near vision:N6(P)	Bilateral: 6/12(+2) Right eye: 6/24(-1) Left eye: 6/18(+1) Pinhole Right eye:6/12(+2) Left eye: 6/12 Near vision:N6(P)
2.	<b>AUTOMATED REFRACTION</b>	Right eye: K1-62.58 K2-71.07 Left eye: K1-46.25 K2-50.10	Right eye: K1-58.23 K2-67.76 Left eye: K1-44.41 K2-48.27	Right eye: K1-54.62 K2-64.82 Left eye: K1-43.65 K2-47.35	Right eye: K1-50.89 K2-62.43 Left eye: K1-43.12 K2-46.48
3.	<b>KERATOMETRY GRADING</b>	RE- Severe LE- Moderate	RE- Severe LE- Moderate	RE- Severe LE- Mild	RE- Moderate LE- Mild

**DISCUSSION**

Keratoconus is a progressive bilateral corneal ectatic disorder characterized by cone-like steepening of the



cornea, irregular stromal thinning, and significant vision loss. Progressive defective vision primarily due to progressive myopia and irregular astigmatism. Complaint associated with glare, halos around lights, light sensitivity and ocular irritation. Conservative management such as using of spectacles, contact lens will reduce the blurriness of vision. Surgical treatment includes collagen cross linking (CXL) with UVA and riboflavin arrest disease progression and stabilize corneal tissue. Some other techniques are Intracorneal ring segment implantation in corneal stroma, and Keratoplasty. Keratoconus can be compared with *Vataja prathama patalagata timira*, one among *Drishtigata netra roga* (diseases of vision) in *Ayurveda* characterised by blurred and distorted vision. The classical management of *Timira* includes *Snehana* and *Vatahara* line of treatment which include *Seka*, *Aschyotana* and *Netra Tarpana*. Here we performed *Shalakya Netra seka*, *Netra abyanga*, *Aschyotana* and *Netra pichu*.

1. *Shalakya netra seka* with *Triphala*, *Bala*, and *Yashti kashaya* was done twice daily. *Seka* act as *swedana* line of treatment. *Triphala* containing *Haritaki* (*Terminalia chebula*), *Amalaki* (*Phyllanthus emblica*), and *Vibhitaki* (*Terminalia bellirica*) is particularly having property as *Chakshushya* which is *Hita* in *Netra rogas*<sup>8</sup>. *Bala* (*Sida cordifolia*) have property of *Vata pradhana tridosahara* as well as *Balya* and indicated in all types of *Vatavyadhi*<sup>9</sup>. *Yashtimadhu* (*Glycyrrhiza glabra* Linn.) also have the property of *Chakushya* which acts as add on benefit<sup>10</sup>.

2. *Netra abyanga* is done with *Triphala ghruta* which is *snehana* line of treatment effective in *Vata pradhana vyadhis*. *Triphala ghruta* which contains again *Triphala* includes *Haritaki*, *Amalaki*, and *Vibhitaki* have *chakshusya* property<sup>11</sup>. *Netra abyanga* helps in reducing the curvature of cornea which is the main cause for *Keratoconus* by reducing the eye strain.

3. *Netra ascyotana* done with *Saptamritha ghruta*<sup>12</sup>, *Ascyotana* is a common line of treatment in *Netra vikaras* which is *Sneha pradhana chikitsa*, it reduces the vitiated *vata dosha* and helps to nourish the eyes. *Snehana aschyotana* is performed (10 drops to each eye) which is indicated in *Vata pradhana netra roga*<sup>13</sup>. *Sapthamritha ghruta* which contains mainly

*Triphala*, *yashti*, *ksheera* act as a main action as *Chakshushya* and *Rasayana*.

*Netrapichu bandana* done with *Triphala ghruta* which is *Paschat karma*. Cotton pad dipped in *Triphala ghruta* tied over both eyes helps in relaxing eyes and also helps in absorption of drug due to high retention period.

## CONCLUSION

Keratoconus is progressive illness which increase mainly due to Eye strain. Its progression should be restricted to avoid complications. *Ayurvedic kriyakalpa* treatment helps in Keratoconus by reducing eye strain and it is found that improvement in vision, reducing in Keratometry grading from Severe to Moderate. Over all there was a significant improvement in the condition with no recurrence of symptoms even after a month of follow up. Further clinical trials on large sample size may be conducted to ascertain findings of these observations.

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