

ROLE OF TARPAN AND NASYA IN CONVERGENCE INSUFFICIENCY - A CASE STUDY

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ABSTRACT

Convergence Insufficiency(CI) is one of the important cause of Headache. It is characterized by a decreased ability to converge the eyes and maintain binocular vision while focusing the near objects. Patients suffering from CI complains of eye strain, headache, blurred vision etc. According to modern science, eye exercise in the form of Pencil- push up is advised. For better results, Ayurveda Therapeutics were used to overcome the condition. According to Ayurveda, it can be correlated with Vataprakopa especially of extra ocular muscles. **Case:** A 28 years old Male patient having complaints of Headache, blurring of Vision, Brief reading time, jumping of words, difficulty in Concentration came to OPD. He had taken medications for headache which were having temporary relief. No past medical, surgical, family History noted. **Materials and Method:** Written informed Consent was taken from the patient after explaining the Procedure to him. Modern and Ayurvedic examinations were carried out. Ocular therapeutics which included Tarpan with Yashtimadhu Ghrita and Nasya with Yashtimadhu oil were administered for 7 days once daily in the morning. Diet and Regimen, Precautions were explained to the Patient. **Observations and Results:** Headache was relieved remarkably. NPC Scale reading was reduced from 10cm to 5 cm. This is a unique and effective approach towards CI with minimal treatment which can be used for benefit of the society.

KEYWORDS: Convergence Insufficiency, Tarpan, Nasya, Yashtimadhu Ghrita.

INTRODUCTION

Convergence Insufficiency^[1] is neuromuscular anomaly to converge the eyes and maintain binocular fusion while gazing the near object. In this entity, patient is unable to focus near objects. Prevalence is more in second and third decades. It affects 7.5 % of the population.^[2] Patients complain of eye strain, headache, asthenopia (typical type of headache due to eye strain), blurred vision, jumping or missing of words while reading, ultimately resulting in loss of concentration, short attention span, sleepiness. During Covid Pandemic, the education system, job style changed from offline mode to online learning or Job which resulted in excessive use of electronic devices. Thus, chances of Convergence Etiology of CI is not exactly known but it may be associated with Trauma, neurological diseases or imbalance vergence eye movements (congenital or acquired). Exact Pathophysiology of CI is not determined but yet but it is associated with neurological centres that controls eye movements in mid brain. The degree of CI is measured by near point of convergence (NPC) scale.^[3] NPC is Normal at 5cm. In CI, it is more than 5cm. The cause of CI is unknown. But it is believed that it is associated with extra ocular muscles, ciliary muscles. Conventional treatment for CI is Pencil- Push up exercise. Ayurveda has described different types of Panchakarma procedures for various diseases according to Dosha Dushya. For diseases of eyes some specific panchakarma procedures for eyes called Kriyakalpa^[4] are mentioned for the fast and effective recovery. For the management of diseases of eyes, Yashtimadhu^[5] (*Glycyrrhiza glabra*) is considered to be one of the effective drugs which helps in alleviation of symptoms of eyes. Yashtimadhu is known as Netrya in its reference which means beneficial to eyes. Ghrita^[6] is also beneficial to eyes and Yashtimadhu ghrita^[7] prepared helps for reducing the symptoms aggravated due to Vata dosha. Moreover, Alochak pitta is present in eyes which also gets normal when ghrita is used as ghrita is pittashamaka and rejuvenating eyes. According to Ayurveda, CI is due to vitiated vata dosha(element). Especially, ruksha(dry), chala(movable) characteristics of Vata are hampered. Netra Tarpan^[8] is the type of kriyakalpa(Ocular therapeutics) which can be used for reducing the chala and ruksha Guna of vitiated Vata dosha in which medicated ghee or plain ghee is poured over opened eye and allowed to retain for certain period of time. In this case, it was administered for successive 5 days. Nasya is a procedure where medicated ghee or oil is administered through nostrils. Hence, considering all the holistic approach appropriate for the Convergence Insufficiency, an attempt is made with Ocular Therapeutics with Yashtimadhu Ghrita Tarpan and Yashtimadhu taila.^[9] Nasya procedure. The administered procedures reduce the Vata as ghrita and oil are Sneha dravya which and help in proper movements of extra ocular muscles and thus help in Fusion. Also, these procedures relieve pain and nourish the sense organ throughout. This can be utilized for the establishment of treatment protocol for Convergence Insufficiency and help people in relieving symptoms with minimal intervention and help for research in Ayurveda field.

CASE REPORT

A 28 years old male patient doing clerical job came to OPD with chief complaints of headache since 4 months. Associated complaints were blurring of vision after brief time of reading, jumping of words, and difficulty in concentration. He had undergone conventional therapies to subside headache. Patient was not having any systemic disease. Patient was sound in concern with Family and Past medical history. After thorough examination (TABLE I and TABLE II), treatment was started.

Table I: General examination.

Ashtavidha Pariksha		
1	Nadi	Vata-Pittaj Samyak (Radial pulsation)
2	Mala (Bowel)	Normal
3	Mutra (Micturation)	Normal
4	Jivha (Tongue)	Nirama (clear)
5	Shabda (Voice)	clear
6	Sparsha (Temperature)	Anushna (warm)
7	Druka (Vision)	Unable to focus near object
8	Akruti (built)	Madhyama (Medium)
Systemic examination		
1	RS	Air Entry Bilateraly Equal, clear
2	CVS	S1S2 Normal
3	CNS	Conscious, well oriented
4	PA	Soft, no abnormality noted
5	Pulse	78/min
6	BP	110/80mm of Hg

Table II: Local Examination.

Vision		
Examination	Right Eye	Left Eye
Vision (unaided)	6/6	6/6
Vision (Pinhole)	6/6	6/6
Vision (aided Near)	N6	N6
Color Vision	Normal	Normal
Schiotz Tonometry	12.2 mm of Hg	12.2 mm of Hg
Anterior Segment		
Structure	Right Eye	Left Eye
Eyelashes	No abnormality detected	No abnormality detected
Eyelids	No abnormality detected	No abnormality detected
Conjunctiva	No abnormality detected	No abnormality detected
Anterior chamber	Deep and quite	Deep and quite
Pupil	Round Regular Reacting	Round Regular reacting
Iris	Normal	Normal
Lens	Transparent	Transparent
Rest	Within normal limits	Within normal limits
Extra ocular Muscles Movements	Normal and Painless	Normal and Painless
NPC Scale reading	10cm	10cm
Indirect Fundoscopy		
Structures	Right Eye	Left Eye
Cup disc ratio	0.3:1	0.3:1
Vitreous	Normal	Normal
Blood Vessels	Normal	Normal
Macula	Normal	Normal

Final diagnosis: Convergence Insufficiency (CI)

Table II: Treatment.

Treatment	Medicinal drugs	Dose	Duration	Time period
Tarpan	Yashtimadu Ghrita	300 ml	20min	7 days
Nasya	Yashtimadhu Oil	6 drops in each nostrils	30min	7 days

MATERIALS AND METHOD**Poorvakarma**

1. After complete examination of the patient, Procedure of Tarpan and Nasya were explained to the Patient and written informed consent was taken.
2. Tarpan goggle, cotton swab, bowl, heating arrangement, Syringe, Towel were arranged for Tarpan Procedure.
3. Dropper, bowl for oil, steamer, towel, cotton swab were arranged for Nasya Procedure.

Pradhan Karma

1. Patient was asked to lie down on table and cotton was inserted in both the ears.
2. Tarpan goggle was placed over the eyes and was adjusted correctly so that the liquid in it do not spill out.
3. Yashtimadhu Ghrita was heated under hot water bath and warm yashtimadhu ghrita was filled in both the eyes through hole of goggle till both the eyelids are completely immersed in the ghrita.
4. Patient was asked to blink the eyelids slowly and simultaneously 100 counts of blinks was asked by the patient.
5. After completion of count of 100 and eyeblinks, ghrita was removed with the help of syringe and goggle was removed.
6. Eyes were cleaned with cotton and patient was asked to wash the face and dry with towel , allowed to rest for 15 min.
7. Followed by tarpan, Nasya was administered.
8. For nasya, Patient was asked to lie down on Table. Local facial massage with yashtimadhu tail was given.
9. Patient was asked to take mild steam on facial region with the help of steamer for 10 min.
10. Position for Nasya was given by tilting the head at 45 degree and 6 drops of warm Yashtimadhu tail were administered in one nostril keeping the finger on the other nostril.
11. Patient was asked to inhale the oil and later 6 drops were inserted into the other nostril keeping the finger on the opposite nostril.
12. Patient was allowed to wait till Nasya dravya enter into mouth.

Paschat karma

1. When Nasya dravya came in the throat, Patient was asked to gargle with warm water.
2. Patient was asked to clean the face and dry it and was allowed to rest for one hour.
3. This procedure was followed for 7 continuous days.
4. Pathya and Apathya were explained to the patient.

Nidana panchaka

Hetu: Vataprakopak ahar (diet which vitiate and increase vata dosha).

Poorvaroopa: headache

Roopa: headache, blurring of vision, jumping of words, difficulty in concentration.

Samprapti: After vataprakopaka ahara vihar Hetu, the vitiated vata takes sthanasanshraya (accumulation) in Netravaha sira and peshi (Muscles of eyes). This lead to peshi sankoch (extra ocular muscle stiffness) causing eye strain, (shirashoola) headache, akshishoola (pain in eyes), dhusar drishti (blurring of vision) which ultimately lead to convergence insufficiency.

Samprapti ghataka (factors hampered)

Dosha- Vata, Dushya- Mamsa (Muscles), Majja, Hetu- Vataprakopak ahar (diet which vitiate and increase vata dosha).

OBSERVATION**Table III: Assessment after Treatment.**

Vision		
Examination	Right Eye	Left Eye
Vision (unaided)	6/6	6/6
Anterior Segment	Normal	Normal
NPC Scale Reading	5cm	5cm

RESULTS

Results were noted after 7 days. Improvement in NPC reading along with subsidation of symptoms. Headache was also markedly reduced.

DISCUSSION

CI is neuromuscular entity in which person is unable to focus the near objects resulting in blurring of vision, headache and diplopia (doubling of objects). It is associated with neurological centre that control proper eyeball movements. All extra ocular muscles help in proper movement of eyeball in all gazes. Due to continuous vitiation of Vata dosha in mamsa dhatu, the sensory function of eyes get hampered resulting in toughness and dryness of extra ocular muscles ultimately resulting in difficulty in fusion convergence. Conventional treatment is pencil-push up exercise in which active exercise of extra ocular muscles is done with appropriate movement of pencil in front of the eyes. According to Ayurveda, Ocular therapy Tarpan is more beneficial in such conditions. Medicated ghee subsidates vata and helps in proper movement of extra ocular muscles by decreasing rigidity.

Action of Tarpan

Tarpan is immersing the eyelids in the Sneha for specific duration and allowing to blink the eyes at the same time. As tarpan is performed with the help of sneha, the vitiated vata gets subside. Specially prana vayu which is responsible for Indriya bala(chakshurendriya) and Vyana vayu which is responsible for Nimeshonmesh(blinking of eyes) get vitiated in CI. Ghrita Tarpan helps for normalizing the pran and Vyana vayu to continue the normal functions. Also nourishes internal structures of eyeball⁶ by oleation of each part. Yashtimadhu(Glycyrrhiza glabra) decreases Vata by its unctous property. It is also beneficial for eyes. Nasya works at sensory level by crossing the blood brain barrier⁷ and thus helps in fusion, also nourishes visual Pathway elements.

Table IV: Drug Properties.

No	Name	Botanical Name	Guna (Property)	Rasa (Taste)	Veerya (Power)	Vipak (Ripeness Taste)
1	Yashtimadhu	Glycyrrhiza glabra Linn.	Guru Snigdha (Heavy, Moist)	Madhur(Sweet)	Sheet (Cold)	Madhur (sweet)

CONCLUSION

Certain diseases are not directly mentioned in Ayurveda but their presentations are well explained which can be correlated with modern aspects. These diseases are called Unukta vyaadhi(unexplained diseases) like CI. This entity can be properly understood with Ayurveda Principles and treatment protocol can be established for such diseases for better results. In this case, Tarpan and Nasya are found to be effective.

Further scope of study

Case series can be studied with large sample size, Different formulations of ghee and oil are used with comparison. Also, Oral medication and use of enema can be studied in such conditions.

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