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A CLINICAL CASE STUDY OF AYURVEDIC MANAGEMENT OF TRAUMATIC OPTIC ATROPHY

Palash Agrawal*[1] and Kumari Uma Pandey[2]

[1]PG Scholar, Department of Shalakya Tantra, Govt. Ayurvedic College and Hospital, Patna, Bihar.

[2]Professor and HOD, Department of Shalakya Tantra, Govt. Ayurvedic College and Hospital, Patna, Bihar.

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***Corresponding Author**
Dr. Palash Agrawal
PG Scholar, Department of Shalakya Tantra, Govt. Ayurvedic College and Hospital, Patna, Bihar.

ABSTRACT

Traumatic optic neuropathy (TON) is an uncommon cause of visual loss following blunt or penetrating head trauma, although the majority of patients are young adult males, about 20% of cases occur during childhood. As similar to this condition a male patient of 25 years old approached to OPD of Government ayurvedic college and hospital, Patna with decrease of vision in his right eye after a road side accident for 10 years and has good vision in left eye. The classics mention the *Vatashaman, Chakshushya, Nadibalya*, and *Rasyana* lines of treatment that were used on him. Shaman *Oushadhis* in the form of oral medicine, and panchakarma procedure involved Nasya, Siro Dhara, *Chakshushya* Vasti, and Akshi Tarpana were the main form of treatment. **Result**: The subject had shown marked improvement subjectively and in visual acuity. Patient showed an improvement in the Visual acuity increased by ≥2 lines from 6/36 to 6/18 in right eye in 1-month. **Discussion**: Regretfully, traditional medicine does not offer a remedy to reverse optic atrophy; the objective is to minimize more damage to the optic nerve. An early management of Traumatic Optic Neuropathy with Ayurvedic treatment can have a significant impact on the clinical/visual outcome in terms of recovery in damaged optic nerve fibers.

KEYWORDS: Traumatic optic atrophy, *Nasya, Akshi tarpana, Chakshushya Vasti, Sirodhara*.

INTRODUCTION

Degeneration of the optic nerve, or optic atrophy, is the end result of any pathologic procedure that affects axons in the anterior visual system, which includes the lateral geniculate body and retinal ganglion cells.[1] This is a dangerous illness that can lead to visual issues like colour blindness, peripheral vision loss, and loss of central vision. TON has a gender predominance. Up to 80% of patients with TON have been reported to be male with a median age of 31 years, and 21% are younger than 18 years. Hereditary, trauma, tumours, reduced blood supply, glaucoma, optic neuritis, multiple sclerosis, toxic, and nutritional visual neuropathies are among the primary causes of optic atrophy.

The primary signs of optic atrophy include hazy vision and loss of vision, which often develops gradually after beginning as an abrupt loss of vision, visual field loss and colour vision defect.[2]

There are two main categories of optic atrophy: primary and secondary. Degeneration of the optic nerve fibres without any aggravating factors leads to primary optic atrophy. Some signs of previous neuritis or papilledema are indicative of secondary optic atrophy. Consecutive optic atrophy, glaucomatous optic atrophy, vascular or ischemic atrophy, postneuritic optic atrophy, and traumatic optic atrophy are the main forms of optic atrophy.[3] Consecutive optic atrophy is a condition that develops after posterior segment eye illnesses, such as Retinitis Pigmentosa in its advanced stages. The highly noticeable cup is a characteristic of glaucomatous optic atrophy. Reduced blood flow to the arteries causes vascular atrophy. There is no connection between neuroglial cell growth and cavernous optic atrophy. Mechanical trauma is the cause of traumatic optic atrophy.

There may not be any neuroradiological evidence of an avulsion in certain instances, and the optic nerve may appear to be intact.[4] After the initial traumatic event, optic atrophy can be observed three to six weeks later, although the optic nerve head will initially appear normal.[5] When unilateral optic atrophy occurs, the patient's consensual response to light is exaggerated, and the pupils are dilated and unreactive to light, the patient is blind. Partial optic atrophy is characterized by a decrease in central vision and a concentric constriction of the field, either absolute or relative, with or without scotoma.[6] Loss of vision, semi-dilated pupil with very slow and non-existent direct light reflex, relative afferent pupillary deficit [RAPD], and loss of visual field are the main clinical characteristics.[7]

The appearance of disc in the fundus imaging will differ depending on the kind of optic atrophy. However, pallor of the disc and a reduction in the quantity of tiny blood vessels are typical ophthalmoscopic signs of optic atrophy.

The underlying cause when treated may help in preserving some vision in patients with partial optic atrophy. However, once complete atrophy has set in, the vision cannot be recovered.[8] The prognosis depends on the possibility of controlling the causal factor. It may help to preserve the vision. Here comes the role of Ayurvedic treatment so as to improve the quality of life by improving the vision of patient. The subject was treated with *Vatashaman*, *Chakshushya*, *Nadibalya*, and *Rasayana* line of treatment which is mentioned in the classics by considering the *Kala* or chronicity, *Prakruthi* and *Lakshana* of subject i.e., *Akshi Tarpana*, *Nasya*, *Chakshushya Vasti*, *Siro Dhara* and *Shaman oushadhis*.

MATERIALS AND METHODS

CASE REPORT

A 25-year-old male patient consulted Shalakya Tantra OPD of government Ayurvedic College, Patna complaining of diminished of vision in right eye since-10 years.

HISTORY OF PRESENT ILLNESS

The patient complained of decreased vision in his right eye and was seen in the government Ayurvedic college and hospital in Patna Shalakya Tantra OPD. From childhood forward, his left eye's vision was completely normal. Prior to ten years, the right eye's vision appeared to be normal. After a motorcycle accident in 2014, he spent 1.5 months in the hospital. Following his release, he was instructed to rest for three months. He began to experience blurriness in his right eye during this rest period, which gradually got worse over time and started to interfere with his everyday activities. After consulting with an ophthalmologist, the right eye's condition was determined to be Traumatic Optic Atrophy.

He took treatment from there, but there was no marked improvement. After 4 years of duration, he came to Shalakya Tantra OPD of govt. Ayurvedic College and Hospital, Patna for the same complaint.

Past history

History of motorbike accident before 10-years.

Family history

Nothing significant.

Personal history

- Bowel : 1-2 time/day
- Appetite : Good
- Micturition : 4-5times/day
- Sleep : Sound

Ashtasthana Pareeksha

- *Nadi* : 76/min
- *Mutra* : 4-5times/day
- *Mala* : Regular
- *Jihwa* : Alipta
- *Shabda* : *Prakrita*
- *Sparsha* : *Anushna sheeta*
- *Druk* : *Vikruta*
- *Akruthi* : *Krusha*

Vitals

- Pulse rate : 80/min
- Respiratory rate : 18/min
- Temp : 98.6°F
- BP : 110/70mm of Hg

Systemic examinations

All the systemic examinations revealed no any abnormalities.

Ophthalmic examinations

- **Slit lamp examinations explained in Table no: 1**

Table 1: Slit lamp examinations.

Ocular structures	Right EYE	Left EYE
Eye brow	No any abnormality	No any abnormality
Eye lashes	No any abnormality	No any abnormality
Eye lid	No any abnormality	No any abnormality
Conjunctiva	No any abnormality	No any abnormality

Sclera	No any abnormality	No any abnormality
Cornea	No any abnormality Transparent	No any abnormality Transparent
Anterior chamber	No any abnormality	No any abnormality
Pupil	Round Sluggish reactive Regular	Round Normal reaction Regular
Lens	Clear, Transparent	Clear, Transparent

- **Visual acuity before treatment explained in Table no: 2**

Table 2: Visual acuity before treatment.

	Visual acuity		**Vision with pin-hole**		**BCVA**	
	DV	**NV**	**DV**	**NV**	**DV**	**NV**
OD	6/36	N-6	NI	NI	6/36	N-6
OS	6/6	N-6	NI	NI	6/6	N-6

- **Examination of fundus Findings explained in table no. 3**

Table 3: Examination of fundus.

Ocular structures	**Right EYE**	**Left EYE**
Vitreous	Clear	Clear
Disc	Pallor	WNL
Macula	FR (+)	FR (+)
CDR	Cup disc margines was obliterated	0.4 approx.
Vessels	Thin Partially obliterated	Normal vasculature

DIAGNOSIS

Traumatic optic atrophy.

TREATMENT

1. *Ama Pachana* with *Chitrakadi Vati* 1 tab TDS for 3 days.
2. *Chakshushya Vasti*[9] in the mode of *Yoga Vasti*.
3. *Nasya* with *Ksheerbala taila*[10] 8-8 drops in each nostrils for 7 days .
4. *Shirodhara* with *Balaashwagandhadi taila*[11] for 7 days
5. *Tarpana* with *Jeevantayadi Ghrita* with *Mahatriphladi Ghrita* for 5 days.[12]

Internal medicines

Table 4: Internal medication with their respective doses and time of administration.

No.	**Drug name**	**Dose**	**Anupaan**	**Time**
1.	*Saptamrita Louha*[13]	500mg	With *Madhu*	Two times a day after breakfast
	Yashad Bhasm	125mg		
	Yashtimadhu Churna	1gm		
	Ekangveer Ras[14]	1tab		

2.	*Triphla Yavkoot* *Daruharidra Yavkoot* *Yashtimadhu Yavkoot*	20ml	*Kwatha*	Two times a day before meal
3.	*Triphladi Ghrita*[15]	5gm	*Ushna jala*	One time at night

RESULTS

Total treatment duration was 25 days, subject showed improvement both subjectively and objectively. Visual acuity increased by ≥2 lines in the patient. Before and after treatment Visual acuity results are shown in table no. 2 and 5 respectively.

Table 5: Assessment of visual acuity after treatment.

	Visual acuity		Vision with pin-hole		BCVA	
	DV	**NV**	**DV**	**NV**	**DV**	**NV**
OD	6/18	N-6	NI	NI	6/18	N-6
OS	6/6	N-6	NI	NI	6/6	N-6

DISCUSSION

Traumatic optic neuropathy can cause optic nerve morbidity such as loss of vision, deficits in visual field, colour perception and an afferent pupillary defect. The diagnostic features of traumatic optic neuropathy are visual loss that occurs in the presence of a relative afferent pupillary defect without evidence of injury to the optic nerve or eye. In the present study, the morbidity associated with traumatic optic neuropathy was decreased visual acuity and relative afferent pupillary defect, which was elicited by swinging flashlight test. The aim of treatment was to rejuvenate the damaged nerve fibres with *Vatashaman*, *Chakshushya*, *Nadibalya*, and *Rasyana* line of treatment.

MODE OF ACTION OF TREATMENTS

Ama-pachana was attained by giving *Chitrakadi Vati*.

Chakshushya Vasti was done in the mode of *Yoga Vasthi [total 8 vasti]*. *Anuvasana Vasti* was given with *Khseerbala taila* and *Asthapana Vasti* was given with Eranda Moola *Kashaya* and *Yashthimadhu kalka* and *taila* along with *madhu saindhav*. In Kashaya Vasthi, *Yashti Kalaka* and *Taila* are used which is *Chakshushya*, *Brumhana* and *Vatahara*. There by this *Vasti* helps in rejuvenating the damaged nerves.

After that vatashamaka and *Brumhana Nasya* was planned. Because the optic nerves got atrophic and degenerative changes due to trauma. To nourish the nerves the only way is *Brumhana*. The medicine used for Nasya is *Kheerbala taila*. Bala (Sida cordifolia) is kept

among Balya (Strengthening) Mahakashaya by Acharya Charaka and Vata alleviating drugs by Acharya Sushruta. These properties not only help in alleviation of Vata but also provide nourishment to nerves.

Shirodhara with *Balaashw-agandhadi* was selected. *Balaashw-agandhadi* can act as *Vata-Pittahara, Nadi Balya, Brumhana*. It has good antioxidant and anti-inflammatory property.

Tarpana with *Jeevantnyadi Ghrita* and *Mahatriphladi Ghrita* was adopted for 7 days. It contains drugs like *Jeevanti, Prapoundareeka, Kakaoli, Sita, Ksheera, Madhuka, Draksha, Ghrita* which are having *Vatahara* and *Brumhana* action. It contains *Thriphala* and *Pippali*, both are having *Rasayana karma* and *Triphala* is considered as a *Chakshushya Dravya*.

Mahatriphaladi Ghrita, indicated in *Timira*, has the ingredients like *triphala, shatavari, guduchi, ajaksheera, draksha, yashtimadhu, ksheera kakoli, madhuparni, nidigdhika, neelotpala, pippali* and *goghrita*. Most of the drugs have '*Madhura Rasa'*, '*Sheeta Veerya', 'Madhura Vipaka'* and are '*Chakshushya'*. The majority have antioxidants in them, which reduce the free radicals that harm the eyes oxidatively. As a result, it aids in nourishing and repairing damaged nerves. By using Tarpana, the drug's fat-soluble components pass over the cornea and into the deeper tissues. Netrendriya is originated from Majja dhatu. Ghrita is having the properties like Balya, Brimhana and Rasayana and it nourishes Meda, Majja and Shukra Dhatu. Thus, it gives strength to the eyes. Thus *Balya*, *Rasayana* and *Chakshushya Karma* of *Ghrita* restore the blurred vision in the atrophic condition.[16]

Sapthamrutha Loha contains *Ghrita*, *Thriphala* and *Madhuka*. They are *Netrya*, *Pitta-anilahara* and *Bhrumhana*. *Yashad* has *chakshushya* property, *yashtimadhu churna* is *netrya Brumhana* and *Vatahara*, *ekangveer rasa* is *nadibalya oushdhi*. *Yashti-daruharidra-triphla yavkoot kwath* has *deepan pachan* and *chakshusya* effect. *Mahatriphadi ghrit* has *timir rogadhikar*. Since, they are indicated for *Timira*, it helps to reduce the blurring of vision present in the optic atrophy.

CONCLUSION

In the present study of traumatic optic atrophy, the blurriness occurs according to the damage or degeneration of nerves. In Traumatic Optic Neuropathy, if patient seek Ayurveda treatment at earliest, the chances of recovery of damaged nerve fiber increase. So, in this condition there is a need of Vatashaman, Chakshushya, Nadibalya, and Rasyana *Chikitsa*.

The classical Ayurveda principles along with *Panchakarma* therapy, local treatment and supportive care through Ayurveda can prevent the further damage of nerve fiber.

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