



Case Study

AN INTERESTING CASE STUDY ON NUTRITIONAL OPTIC NEUROPATHY WITH AYURVEDIC MANAGEMENT

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ABSTRACT

Toxic or nutritional optic neuropathy, also known as toxic amblyopia, is basically a chronic retrobulbar neuritis, wherein visual loss results from damage to the optic nerve fibers due to the effects of exogenous or endogenous causes. It is frequently bilateral and has a chronic course with permanent visual deterioration. Under the varieties of various toxic amblyopia, this case is more towards the amblyopia which is caused by the diet deficient in proteins and vitamin B complex. The condition is characterized by impairment of central vision, which is bilateral and gradually progressive. Patients usually complain of fogginess of vision and difficulty in doing near work. Clinical features of nutritional optic neuropathy simulate the disease *Dhumadarshi*. In Ayurvedic classics our ancient seers have mentioned *Dhumapana* and *Madhyapana* as some of the etiological factors resulting in eye diseases and also *Acharya Dalhana* has clearly explained about *Upabrumhaka rasa kshaya* leading to *Drushtigata rogas*. Under treatment in allied sciences, complete cessation of tobacco, nutritional supplements, care of general health are the main modalities of treatments where in it implies the importance of *Ahara, Dinacharya, Swastavrutta* told in our classics.

A male patient aged about 31 years approached our OPD with gradual visual loss from the past 1 year. On fundoscopic examination bilateral temporal disc pallor was noted and was diagnosed as a case of nutritional optic neuropathy and treated appropriately by adopting the classical line of treatment like *Shodhana, Kriyakalpa, Rasayanas* which has given a promising result in treating the case.

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INTRODUCTION

Toxic or nutritional optic neuropathy is basically a chronic retrobulbar neuritis, where visual loss results from damage to the optic nerve fibers due to the effects of exogenous or endogenous causes. The condition usually occurs in men who are smokers and have a diet deficient in proteins and vitamin B complex.¹The etiology and clinical features of nutritional optic neuropathy simulates the disease *Dhumadarshi* in our classics. *Ahara* which is one among the *Trayoupasthambha*² is necessary to maintain *Swasthya* of the body including eyes. When there is a deficiency in the intake of proper nutrients which are needed for the normal functioning of the eye, there will be manifestation of many ocular diseases and present

case is the one. The exact mechanism by which nutritional deficits damage the optic nerve has not been elicited. Although the etiology is likely multifactorial. Specific deficiencies of vitamin B-12, thiamine, other B-complex vitamins and folic acid, as well as reduced systemic levels of other proteins with sulphur-containing amino-acids, may play a role. Currently, the treatment is limited to the intensive use of vitamins with variable results in individual cases and to the implementation of preventive measures, when feasible.³

CASE STUDY

A Hindu, married, male patient aged about 31 years from a middle class family, who works as a goldsmith approached the OPD of SKAMCH & RC,

Bangalore complaining of blurriness of vision from the past one year. Burning sensation and watering of eyes were the associated complaints.

History of present illness

One year back patient developed burning sensation followed by watering of eyes, which persisted for 3 months. After 3 months when he woke up from the sleep at 5 am, suddenly he experienced fogginess of vision in both the eyes. He visited an eye hospital, where they took OCT and told him that, there is no treatment for that condition and he can try with some medications (medicine history not known). He took the medicines prescribed by them for 1 month; where he did not get any relief and hence he visited another Eye hospital and there also he was told the same and was prescribed some oral medication. Later on patient noticed worsening of blurriness of vision and could not see the features of the distant objects clearly. With these complaints he visited Narayana Netralaya where they advised him to take tablet (Vitamin supplements) monthly once and he took it for 2 months. Since he found no

Netra Pariksha-Ocular Examination

Visual acuity

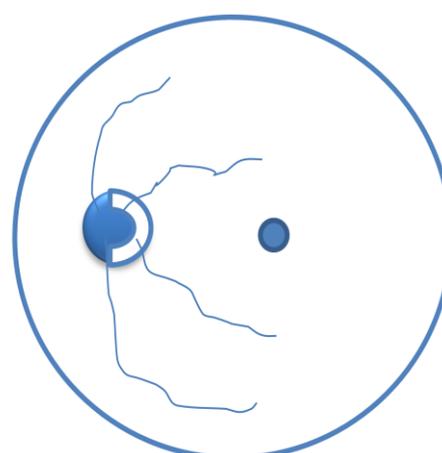
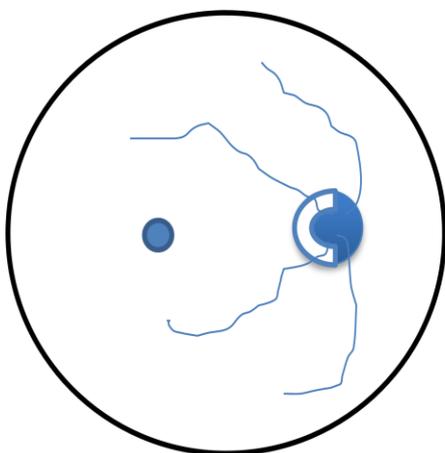
Visual Acuity	DV (Without spectacles)	DV (With spectacles)	NV (Without spectacles)	NV (With spectacles)	PH
BE	5/60	5/60	N18	N18	-
RE	5/60	5/60	N24p	N24p	6/60
LE	5/60	5/60	N24p	N24p	6/60

External ocular examination: All the external ocular examinations were found to be normal.

Confrontation test: Normal.

Colour vision test: Patient could identify the colour of all the plates in Ishihara colour plates.

Fundus examination:



Fundus – Bilateral temporal disc pallor was noticed with decreased foveal reflex. Blood vessels were within normal limits.

improvement in his vision he visited our OPD and after examination of fundus it was diagnosed as a case of nutritional optic neuropathy. The patient was then sent to Retina institute of Karnataka for retinal evaluation and the diagnosis was confirmed. Patient has been working as a goldsmith since 10 years where continuous exposure to flames and looking at minute ornaments during work used to cause considerable eye strain. None of the family members have any complaints pertaining to eye.

Treatment history

Details of Medicines prescribed in 3 eye hospitals were not known. In Retina institute of Karnataka Tab - Neurobion forte - once a day for 3 months was prescribed but was not taken by the patient. 2 years back patient was prescribed spectacles for headache.

Investigations

Investigations like ERG, MRI brain, OCT, Field test reports were found to be normal.

Systemic examination: All the systemic examinations were found to be normal.

Chikitsa

In First Visit

- Treatment was initiated with *Deepana* and *pachana dravyas* using Syp. Liv 52 – 2tsp, TID,

- BF, for 5 days, *Avipattikara Churna* - 1tsp, BID, BF, for 5 days.
- Followed by *Sadhvyovirechana* with *Trivrit lehya* - 60gms (No. of Vegas observed - 7).
- *Samsarjana Krama* was advised and the patient was asked to take *Kanji* for 4 *Anna kalas*.
- *Bidalaka* with *Triphaladi churna*
- *Tarpana* with *Mahatriphaladhya ghrita*
- *Snehana Putapaka*
- *Padabhyanaga* with *Ksheera bala taila*
- *Thalam* with *Mahatriphaladhya ghrita* and *Amalaki churna*.

After *Samsarjana karma* the following *Kriyakalpas* and *Sthanika chikitsa* were advocated

Patient's Condition After Treatment

- ❖ Both subjective and Objective improvement of vision was noticed.

Visual Acuity	DV (Without spectacles)	DV (With spectacles)	NV (Without spectacles)	NV (With spectacles)	PH
BE	6/60	6/60	N9P	N9P	-
RE	6/60	6/60	N12P	N12P	6/60
LE	6/60	6/60	N9P	N9P	6/60

Advise on discharge

- *Drakshamalakadi Lehya*, 1tsp BID, BF for 3 months.
- *Saptamruta loha*, 2 BID with honey and ghee, AF for 3 months.
- *Vasaguduchyadi Kashaya*, 3tsp BD with warm water, BF for 1 month.
- *Syp. Liv 52*, 2tsp BID, AF for 1 month.
- *Avipattikara Churna*, 1tsp BID with warm water, BF for 1 month.
- *Drushtipradavarti anjana* once daily, early morning.

In Second Visit

- In his second visit, *Yoga basti* was given.
- *Kriyakalpa* measures like *Bidalaka* with *Triphaladi churna*, *Tarpana* with *Mahatriphaladhya ghrita*, *Putapaka* were done.
- *Sthanika chikitsa* like *Padabhyanaga* with *Murchita taila* was done.

Observation and results:

VA	Before Treatment		After Basti		After Tarpana and Putapaka	
	DV	NV	DV	NV	DV	NV
BE	6/60	N9P	6/36	N9	6/24	N9
RE	6/60	N12P	6/36P	N12	6/36	N12
LE	6/60	N9P	6/36P	N9	6/24P	N9

Fundus examination: No changes noticed in bilateral temporal disc pallor.

Advise On Discharge

- *Amalaki Rasayana*, 1 tsp, BD, BF.
- *Saptamruta Loha*, 2 tab at BT, with *Mahatriphaladhya ghrita* and *Madhu*
- *Mahatriphaladhya Ghrita*, 1 tsp BD, BF.
- *Drushti prada varti anjana*, twice daily.
- *Padabhyanga* with *Murchita Taila*.

DISCUSSION

Nutritional optic atrophy is a condition which can be compared with *Dhumadarshi* which is one of the *Drushtigata rogas*⁴ explained in Ayurvedic classics. *Acharya Dalhana* explains the

importance of *Ahara rasa* stating *Upabhrumhaka rasa kshaya* may lead to *Drushti gata rogas*⁵ where in *Dhumadarshi* is one among them.

Akalaja bhojana, *Netrayasa* and *Shiroabhitapa* were the etiological factors elicited in the present case. *Jataragnimandhya* produced as a result of irregular food habits leads to *Ajeerna* and improper formation of *Ahararasa* which in turn leads to *Dhatwagnimandhya* leading to improper nourishment of *Dhatu*s. Due to intake of *Katu* and *Teekshna ahara* and also continuous exposure to external factors like *Dhuma* in working atmosphere, *Pitta pradhana tridosha prakopa* takes place which traverse through *Urdhwaga siras* and later takes *Sthanasamshraya* in *Drushtimandala* of *Netra* due to

Kha-vaigunya. Though the patient was a non-smoker, due to untimely food consumption and also due to the diet deficient in micronutrients like vitamin B complex he had to suffer from visual disturbances due to optic neuropathy since vitamin B complex is required for healthy neurological function.

Since the *Abhyavarana* and *Jarana shakti* of the patient was *Avara*, first he was advised *Deepaka* and *Pachaka* using *Syp.Liv 52* and *Avipattikara churna*. By the *Deepana dravyas abhyavarana shakti* will increase and with the help of *Pachakas jarana shakti* will increase.

Koshta shuddhi was attained with the help of *Sadhyo virechana* and *Trivrit lehya* was given to achieve the same.

Bidalaka: Skin is one of the routes of drug administration. The drugs used in *Bidalaka* like *Triphala*, *Yashti*, *Lodhra*, *Raktchandana* are *chakshushya* and *doshashamaka*, hence readily penetrate the eyelids, helps to increase cutaneous blood flow thereby enhancing better absorption. Due to this the eye strain caused by his routine work was reduced.⁶

Tarpana and Putapaka: Bio-availability and absorption depends on solubility of the drugs and local condition at the site of absorption. Since the drugs are both water and lipid soluble, they can easily penetrate cornea and readily reach the target tissue. Increased tissue contact time enhances the absorption of phytonutrients of the drugs thereby increasing the bioavailability of the drugs. Penetration of fat soluble substance is high irrespective of molecular size. As far as absorption is concerned, drug being a suspension of fat and water soluble contents, *Putapaka* has more absorption than *Tarpana*.⁷

Anjana: The medicine applied in the form of *Anjana* enters into the eye lids, blood vessels of the eye, ducts of *Ashru* and *Shringataka marma*. Then it causes *Sravana* of vitiated *Doshas* through the mouth, nose and the eyes itself.⁸ The drugs used in *Drushtipradavarti* are *Chakshushya* and hence helps to strengthen the vision and also Acharya Charaka has stated that this *Anjana* will bestow the vision even to the blind person.

Thalam: It is one among the *Masthishkya*. *Shiras* is the abode of all the *Indriyas* and *Masthishkya* has nourishing effect on them. Since *Chakshushya dravyas* are used, it strengthens the ocular tissues and hence improves vision.

Padabhyanga: It is mentioned that *Padabhyanga* is *Chakshushya* by *Bruhatrayikaras*. Two *Nadis* related to *Drushti* are situated in the centre of the sole and

transmit the effect of medicines applied over the feet to the eye and there by enhances the power of vision.⁹

Basti: "*Karmanyad basti samam na vidhyate shigra sukha vishodhitwat*"¹⁰, from *Basti karma*, immediate *Shodhana* of *Kaya* will be attained. It does *Brimhana*, *Ashu agni bala abhivardhana* and is indicated in *Timira* also. Acharya Sushruta has mentioned that, it does *Chakshu preenana*. Further it is mentioned "*Tasmat na basti samam Kinchit karma marma paripalanamapi*"¹¹ which means *Basti* is an excellent procedure and no other treatment is as excellent as *Basti* in *Marma paripalana*. In modern parlance, enteral nutrition is a new concept of nutrition, in which nutrition is provided through the gut.¹²

Mahatriphaladhya ghrita has *Triphala*, *Bringaraja*, *Vasa*, *Aja ksheera*, *Draksha*, *Yashti* and *Ghrita*. *Drustiprada varti anjana* has *Triphala*, *Kukkutanda twak*, *Kasisa*, *Ayaso raja*, *Nilotpalam*, *Vidagna*, *Phena*, *Aja paya*. *Drakshadi lehya* contains *Draksha*, *Kana*, *Sita*, *Madhu*, *Dhatri* and *Yashti*. *Vasa guduchyadi kashaya* contains *Vasa*, *Guduchi*, *Triphala*. *Saptamruta loha* contains *Triphala*, *Yashti*, *Loha*, *Madhu* and *Ghrita*. *Amalaki rasayana* contains *Amalaki*, *Kumkum kesara* and *Ela*. Most of the *Dravyas* used in treatment are *Chakshushya*, *Pitta* and *Kapha shamaka* which helps to nourish ocular tissues and thereby corrects the pathogenesis.

Haritaki is *Tridosha shamaka*, does *Indriyas prasadana* and is *Indriyas bala prada*. *Vibhitaki* is *Kaphapittahara*, does *Ama dosha nirharana*. *Amalaki* is *Tridosha hara*, does *Rakta prasadana*, *Daha prashamana* and it is *Indriya bala prada*. *Triphala* is rich in Vitamin C, flavonoids, which helps to nourish the nervous tunic of the eyeball. *Ajaksheera* is *Raktapitta hara* and it is having *Sheeta virya*. *Yashtimadhu* is *Vatapitta hara* and is *Chakshushya*. *Ghrita* is having *Sheeta virya* and does *vata-pitta prashamana*. It is rich in vitamin A and choline with good amount of vitamin E, riboflavin, niacin and pentathonic acid; vitamin K, foliate and Vitamin B12 in small amount. *Ghrita yoga* containing the *Chakshushya dravyas* has the capacity to cross the blood-ocular barrier and helps to nourish the inner ocular tissue.^{13,14} Most of the drugs used in the formulation are rich in proteins, amino acids and micronutrients like Vitamin C, B and E due to which the patient showed considerable improvement in the vision.

CONCLUSION

Ahara is considered as one among the *Trayopasthambha*. Importance of *Ahara* is explained in a vivid manner by our ancient Acharyas which

helps in overall development of the *Sharira* including *Netra*. As such the disease *Dhumadarshi* is *Pittaja sadhya vyadhi*; almost all the drugs used in the formulations are *Chakshushya*, *Pitta hara* and have *Rakta prasadana* and *Rasayana* effects. Proper assessment of the disease and adaptation of treatment based on the *Roga* and *Rogi bala* using different modalities of the treatment along with proper *Pathya* and *Apathyas* has given a positive result in treating the disease. The pharmacological active principles of the drugs used have the action of nourishing the ocular tissues and therefore resulted in improvement of vision. Both subjective and objective improvement was observed which can be taken as a challenge for further scope for study using authenticated Ayurveda *Chikitsa*.

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