

Efficacy of Ayurvedic Intervention in Toxic Amblyopia Post-Antitubercular Treatment: A Case Study

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Abstract

Toxic amblyopia is an acquired optic neuropathy characterized by gradual, painless diminution of vision, impaired color perception , and decreased contrast sensitivity. Prolonged use of antitubercular drugs, particularly ethambutol and isoniazid, is a known etiological factor causing toxic damage to the optic nerve.¹² Conventional management primarily includes cessation of offending drug and nutritional supplementation; however, visual recovery is often incomplete. In Ayurveda, such visual disturbances can be correlated with *Timira* and *Drishti Nadi Dushtias* described by Acharya Sushruta, where vitiation of *Pitta* and *Vata Doshas* lead to functional impairment of vision.³ *Tarpanis* usually practiced *kriya* in *netra chikitsa* which is *Brimhana* (nourishing) in nature.⁴ *Tarpan* is *Snigdha kriya* indicated in *vata dushta* ophthalmic conditions mainly in *drushtigatrogas*. This procedure helps to nourish eye, increased blood circulation to the affected area , gets rid of *dosha* imbalance, strengthens the optic nerve and helps in improving eyesight.

Case: A 64 year old Female presented to the ophthalm OPD (in August 2025) with the complaints of diminished vision and eyeache since 2 months. She had been diagnosed with Tuberculosis 1 year prior and had completed antitubercular treatment for the duration of 9 months .The patient had also been previously diagnosed with Optic neuropathy had undergone treatment under a neurophysician. Patient was treated with 3 cycles of *Tarpan*, each cycle consisting 7 consecutive days, with an interval of 7 days. *Nasya* therapy was administered alternately, along with internal ayurvedic medications.

Conclusion: Ayurvedic treatment resulted in satisfactory improvement in vision and overall ocular health in this case.

Key words: toxic amblyopia, *tarpan*, *nasya*, *Drishti nadidushti*

I. Introduction:

Toxic amblyopia is an acquired, bilateral optic neuropathy characterized by painless, progressive diminution of vision, impaired color perception, and reduced contrast sensitivity¹. It is commonly associated with drug-induced toxicity, nutritional deficiencies, and metabolic disorders.⁵ Among antitubercular drugs, ethambutol and isoniazid are well known for neurotoxic potential , leading to optic nerve dysfunction when administered for prolonged duration.¹² Despite early withdrawal of the offending drug and supportive therapy, visual recovery remains unpredictable, posing a significant therapeutic challenge in contemporary ophthalmic practice.

In *Ayurveda*, visual disturbances resembling toxic amblyopia can be correlated with *Timira* and *Drishti nadidushtias* described by *Acharya Sushruta*.³ According to Sushruta, derangement of *Doshas*, predominantly *Pitta* and *Vata*, affects the *Drishti Nadi*, resulting in gradual loss of visual clarity (*Avyakta Darshana*). Sushruta emphasizes that *Tejas* is the prime element responsible for visual perception, and its impairment due to *Pitta Dushti* leads to dysfunction of ocular structures. Furthermore, vitiated *vata* contributes to degenerative changes and conduction defects in the visual pathway,⁶ which closely resembles the pathophysiology of optic neuropathy.

Sushruta has described a detailed classification and management of *Timira*, highlighting the importance of early intervention through *Shodhana* and *Shamana* therapies to prevent progression to *Kacha* and *Linganasha*.⁴ Therapeutic measures such as *Nasya*, *Tarpana* and the use of *Chakshushya* and *Rasayana* formulations are administered to nourish the *Drishti Nadi* and restore visual function.^{4 5} These principles provide a strong theoretical foundation for the application of Ayurvedic interventions in toxic amblyopia.

II. Case Presentation :

A 64-year-old female patient presented to the Shalakya Tantra OPD of Shri Ayurved Mahavidyalaya, Nagpur, with complaints of diminished vision in both eyes associated with pain, persisting for the past 2 months. She had a history of tuberculosis, for which she had completed a 9 month course of anti-tubercular treatment. The patient had also been previously diagnosed with Optic

neuropathy had undergone treatment under a neurophysician.

Past History:

H/O – Tuberculosis (1.5 year ago)

k/c/o – Hypertensionsince 10 years(on regular medication)

N/H/O –DM/TSH/BA

N/H/O- Allergy/ addiction / Trauma

Family history: no any relevant family history was found

Visual Acuity B/L Eyes (before treatment)

V/A	Right	Left
Distant vision(aided)	6/60	6/60
Near vision	N/8	N/8

Local Examination:

	Right	Left
Eyebrows	No any deformity	No any deformity
Eyelids	No any deformity	No any deformity
Eyelashes	No any deformity	No any deformity
Conjunctiva	No any deformity	No any deformity
Cornea	Clear	Clear
Anterior chamber	No any deformity	No any deformity
Iris	Color pattern normal	Color pattern normal
Pupil	NSRTL	NSRTL
Lens	changes	Changes
Posterior segment	Slight optic disc atrophy	Slight optic disc atrophy

Diagnostic criteria:

1.Subjective

Avyakta darshan

Netrashul

2.Objective

Snellens chart

Direct Fundoscopy

Ayurvedic Management

Date	Treatment	Dose	Duration
5/8/25	<i>Anu tail nasya</i>	OD (1 st cycle) 10 drops	7 Days
	<i>Cap MahatriphalaGhrita</i>	2BD(1 gm)	3 Month
	<i>NayanprashVatti</i>	2BD(1gm)	3 Month
	<i>Suvarnamakshik Bhasma with Rason kalka</i>	OD	1 Month
12/8/25	<i>TriphalaGhrita Tarpan</i>	OD(1 st cycle)	7 Days
22/8/25	<i>Anu Taila Nasya</i>	OD (2 nd cycle)	7 Days
3/9/25	<i>TriphalaGhrita Tarpan</i>	OD(2 nd cycle)	7 Days
12/9/25	<i>Panchendriyavardhan Tail Nasya</i>	OD (3 rd cycle)	7 Days
21/9/25	<i>TriphalaGhrita Tarpan</i>	OD(3 rd cycle)	7 Days

III. Result

The patient was assessed before and after completion of therapy using visual acuity, subjective symptoms, and clinical examination.

1. Visual Acuity (VA)

Parameter	Before Treatment (4/8/25)	After Treatment (28/9/25)
Right Eye (OD)	6/60	6/18
Left Eye (OS)	6/60	6/36
Binocular (OU)	6/36	6/12

2. Subjective Symptom Grading

Symptom	Before Treatment (4/8/25)	After Treatment (28/9/25)
Diminution of vision	Moderate	Mild
Ocular pain	Moderate	Absent
Ocular discomfort	Moderate	Absent

3. Clinical Findings

Reduction in ocular strain and irritation

Improved clarity of vision

Better performance in day-to-day visual activities

Overall Outcome

The patient showed marked improvement in both subjective and objective parameters following treatment with *TriphalaGhrita Tarpana*, *Nasya*, and internal *Ayurvedic* medications.

The therapy was found to be safe and effective, with no adverse effects reported during the treatment period. The results suggest that Ayurvedic management can provide significant symptomatic relief and functional visual improvement in such cases.

IV. Discussion

Toxic amblyopia is a condition characterized by bilateral diminution of vision resulting from prolonged use of certain drugs, especially anti-tubercular medications. Drugs like Ethambutol and isoniazid are known to cause optic nerve toxicity, leading to reduced visual acuity and visual disturbances.^{1,2} In the present case, the patient had a history of long-term anti-tubercular therapy (1 year), which may have contributed to the development of visual impairment.

The eye is considered as the seat of *Alochaka Pitta*, which is responsible for visual

perception.⁴ Any imbalance in *Alochaka Pitta* leads to *Netra VyadhiLakshanas* such as diminution of vision. Along with this, there is predominant vitiation of *Vata Dosha*, as *Vata* governs all sensory and motor functions. When *Vata* becomes vitiated, it hampers the proper functioning of visual pathways, leading to progressive visual impairment.⁴

Therefore, considering the involvement of *Vata-Pitta* vitiation, a *Brimhana* (nourishing) line of treatment was adopted to restore the normal function of ocular and neural tissues.

Tarpana with *TriphalaGhrita* was selected as the main line of treatment. *Tarpana* acts as a *Chakshushyathery* and provides direct nourishment to ocular tissues, improves tear film stability, and enhances visual acuity.^{8,9} It helps in pacifying vitiated *Vata* and *Pitta Dosha* and prevents further degeneration of optic structures.

Nasya Karma was administered alternately with *Anutaila* and *Panchendriyavardhana Taila*. The drugs administered through the nasal route reach up to the *Sringataka Marma* (vital junction of vessels and nerve endings in the head region) and spread through various *Srotas*, thereby helping in the elimination of vitiated *Doshas* from the *Urdhvajatrugata* region.⁹

Anutaila possesses *Tridosaharaproperties* and is particularly effective in pacifying *Vata* and *Pitta Dosha*, while strengthening the sense organs. *Panchendriyavardhana Taila* enhances the functional capacity of all five sense organs and provides nourishment to the nervous system.⁸

Nasya facilitates drug delivery through neural and vascular pathways, thereby improving blood circulation and functional efficiency of optic pathways. It relieves the obstruction caused by vitiated *Vata Dosh*a in the *Murdha* (head region) and restores the normal physiological functioning of affected nerves.

Internal medications also played a significant role:

MahatriphalaGhrita acts as a potent *ChakshushyaRasayana*, nourishes ocular tissues, enhances *Drishti*, and prevents degenerative changes.

Suvarnamakshik Ras possesses *Rasayana*, *Pittashamaka*, and *Raktashodhak*a properties, thereby reducing oxidative stress and improving tissue metabolism.

Nayanprash Vati supports overall ocular health and strengthens visual function.

Thus, the combined effect of *Tarpana*, *Nasya*, and internal medications helped in pacifying vitiated *Dosh*as, improving microcirculation, nourishing optic pathways, and enhancing visual function.

The improvement observed in visual acuity and reduction in symptoms in this case indicates that Ayurvedic management can play a significant role in managing drug-induced toxic amblyopia.

V. Conclusion

Toxic amblyopia is a significant cause of bilateral visual impairment, commonly associated with prolonged use of anti-tubercular drugs such as Ethambutol and isoniazid, which can lead to optic nerve toxicity¹. Early identification through detailed history and clinical examination is essential to prevent further progression of visual loss.

This case study highlights the importance of recognizing drug-induced ocular toxicity and adopting an appropriate management approach. By implementing an *Ayurvedic* line of treatment, including *TriphalaGhrita Tarpana*, *Nasya* with *Anutaila* and *Panchendriyavardhana Taila*, along with internal medications, significant improvement in visual acuity and symptomatic relief was achieved.

Hence, this study suggests that Ayurvedic interventions can play a beneficial role in the

management of toxic amblyopia, providing safe and satisfactory outcomes.

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