

The Role of *Jalaukavcharan* (Leech Therapy) in Open-Angle Glaucoma.

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Abstract:

Glaucoma is a progressive optic neuropathy characterized by increased intraocular pressure (IOP), optic nerve dystrophy and peripheral vision field loss. Due to sedentary life style and overstraining, mechanism of aqueous humor outflow is disturbed, leading to rise of IOP causing glaucoma. So, lowering intraocular pressure (IOP) is the main aim of the treatment, it prevents the progression of visual field defects. In *Ayurvedic* texts glaucoma is termed as *Adhimantha*, was very first described by *Acharya Sushruta*. *Adhimantha* means that the disease having pain with progressive vision loss. The treatment of primary open angle glaucoma is limited to lowering IOP by using topical

medications, laser therapy and surgery. In *Ayurveda*, *Jalaukavcharan* (Leech therapy) is one of the most effective, cheaper and long lasting vision gaining para-surgical procedures without any side effect. In the present case study *jalaukavcharan* (leech therapy) was given to the patient diagnosed with primary open angle glaucoma (POAG) and assessment were done after procedure. Remarkable changes were found in various symptoms after assessment.

Keywords:

Primary open angle glaucoma, *Adhimantha*, IOP, *Jalaukavcharan*

Introduction:

Eye is an important sense organ when compared to all other senses i.e., “*Sarvendriyanam Nayanam Pradanam.*”^[1] *Acharya Sushruta* has described 76 types of eye diseases in *uttaratantra* and has mentioned a separate chapter for *sarvagata akshirogas* where *Adhimantha* has been mentioned.^[2] Severe pain in the eyes is the primary symptom of *Adhimantha* and other clinical features vary depending on *dosha* involvement. If *Adhimantha* is not treated at a proper time it will lead to loss of vision. According to *Acharya Sushruta*, *Vataja*, *Pittaja*, *Kaphaja* and *Rakthaja Adhimantha* are said to be *Vyadhana Sadhya Vyadhi* whereas *Hatadhimantha* is said to be *Asadhya*.^[3] *Chikitsa* of this *Vyadhi* includes *Snehana*, *Raktamokshana*, *Virechana*, *Basti*, *Nasya* and *Seka*, *Aschyotanadi Kriyakalpa* procedures.

Primary open angle glaucoma (POAG) can be considered as a chronic progressive optic neuropathy that is accompanied by a characteristic cupping and atrophy of the optic disc, visual field loss and open angles and no obvious causative ocular or systemic conditions^[4]. It is the second leading cause of blindness worldwide.^[5]

The global prevalence of primary open-angle glaucoma is about 3.1%, and of primary angle-closure glaucoma is 0.5% which is six times more common than the former.

Leech therapy or *Jalaukavcharan* is an ancient Ayurvedic bloodletting technique that has the great potential to manage many inflammatory, ischemic, and infectious diseases. Leech's saliva contains many biologically and

pharmacologically active compounds that exert anticoagulant, antiplatelet, anti-inflammatory, and anti-edema effects in the host's body. Arthritis, venous congestion, vascular diseases, abscess, ischemic heart disease, etc. can be successfully managed by leech therapy.^[6] However, alternative therapies such as *Jalaukavcharan* (leech therapy) have been explored in Ayurveda for their potential benefits in reducing ocular pressure and improving ocular circulation.^[7]

A case report:

A 40 years female patient, residing in Mumbai, Maharashtra (India) came to the OPD with complaints of gradual diminution of distance as well as near vision in both eyes, eye strain, occasional headaches and nausea since 4 years.

Chief complaints:

- Gradual painless diminution of vision in both eyes.
- Eye strain.

Associated complaints:

- Occasional headaches.
- Nausea.

History of present illness:

Patient was apparently asymptomatic 4 years ago later developed gradual painful diminution of distance and near eye vision, eye strain, nausea and headache. She consulted ophthalmologist where she was diagnosed with increased IOP in both eyes and prescribed with tropical eye drops, but results were not satisfactory hence she visited OPD of Sion ayurved hospital where *jalaukavcharan* treatment has been advised for her complain.

Past history:

The patient is a k/c/o HTN and she is on regular rx

Family history:

There was no specific history.

On examination:**A. General examination**

Pallor – absent
Icterus – absent
Facial and orbital edema – absent
Built – moderate
Tongue – not coated

B. Dashviddha parikshana

Prakruti – vata pitta
Vikruti – pittaj
Satva – avar
Satmya – madhyam
Sara – pravara
Samhanana – madhyam
Ahar Shakti – madhyam
Vyayama Shakti – madhyam
Pramana – madhyama
Vaya – 40 years

C. Systemic examination:

CVS – S1S2 heard
No murmurs
RS – AEBE equal
Normal vesicular sounds heard
P/A – soft and non-tender
CNS – conscious & well oriented
NAD

D. Clinical findings:

BP – 138/84 mm of Hg
PR – 80/min
Temperature – 98.7⁰F
RR – 18/min
Hb – 12gm

Visual acuity

Without glasses	Distant vision	Near vision
RE	6/18	N/10
LE	6/18	N/10
With glasses	Distant vision	Near vision
RE	6/12	N/8
LE	6/10	N/8

Ocular examination:

Parts	RE	LE
Eyelids, eyelashes	NAD	NAD
Conjunctiva	NAD	NAD
Sclera	NAD	NAD
Cornea	Clear	Clear
Pupils	Normal – well reactive	Normal – well reactive
Lens	NAD	NAD
IOP	26 mmhg	28 mmhg

Fundoscopy observation:

Bilateral optic disc swelling

Procedure:

Written consent for leech therapy was taken and complications were explained keeping in mind patient is hypertensive.

1. Selection of Site:

Around the periorbital region, focusing on areas near the supraorbital and infraorbital regions.

2. Leech Application:

2 leeches (*Hirudo medicinalis*) of 2 sets were applied alternately on

each eye every 4 days, total 5 settings were done along with regular assessment followed by fundoscopy and IOP on 20th day.

3. Duration:

Each session lasted **60 to 85 minutes**, allowing leeches to attach and naturally detach.

4. Post-Treatment Care:

The area was cleaned with sterile gauze, *haridra* which acts as antiseptic is applied and bandaging is done.

Follow up	IOP		Symptoms
	RE	LE	
0	26 mmHg	28 mmHg	Eye strain, diminished vision and occasional headaches.
4	Leech therapy was done	Leech therapy was done	Eye strain, diminished vision and occasional headaches.
8	Leech therapy was done	Leech therapy was done	Reduced headache episodes and eye strain
12	Leech therapy was done	Leech therapy was done	no headache episodes and reduced eye strain
16	Leech therapy was done	Leech therapy was done	Improvement in visual acuity, reduced eye strain.
20	20 mmHg	22 mmHg	Improvement in visual acuity, reduced eye strain .

Outcomes & Observations

- **No Adverse Effects:** No infections or complications were reported.
- **Fundoscopy on 20th day:** Reduction in bilateral optic disc swelling.

Discussion:

Mechanism of Action:

In Glaucoma, the aqueous humor drainage through trabecular meshwork gets blocked leading to buildup of fluid and poor blood circulation which results in increase in IOP. Leech sucks vitiated

blood and reduces the intra ocular pressure, pain and inflammation around the eye. The saliva of leech contains *hirudin*, anticoagulant proteins and histamine like substances which helps in promoting anti-inflammatory, anticoagulant and vasodilatory action. Through the combination of improved microcirculation, reduction in inflammation and enhanced blood flow, leech therapy proves to be excellent remedy in case of primary open angle glaucoma.

Conclusion:

The clinical presentation of the disease is based on the symptoms like blurring of vision, pain in the eyes, headache and raised intra-ocular pressure, *Jalaukavcharan* showed promising results in reducing IOP and alleviating other symptoms in this case of open angle glaucoma. While larger clinical trials are needed, leech therapy could serve as an adjunct to conventional glaucoma management, especially for patients seeking Ayurvedic interventions.

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