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A critical review on Glaucoma and its management in Ayurveda

Niras Anjali

Associate Professor, Dept of Shalakyantra, Yashwantrao Chavan Ayurved Medical College, Aurangabad.

Abstract:

Shalakya tantra is a branch of Ashtanga Ayurveda that treats Chakshu, Nasa, Shirah, Kantha, Mukha and Karna diseases. Glaucoma is an optic nerve neurodegenerative disease which mainly affects people in their forties and fifties caused by a group of ocular conditions which lead to damage of optic nerve with loss of visual function. Glaucoma is the world's second-leading cause of irreversible blindness, and India's third-leading cause. This ailment is connected to Adhimantha in Ayurveda. Adhimantha is a Sarvagata netraroga according to Acharya Sushruta and Vagbhata. It is identical to Glaucoma in terms of etiopathogenesis, clinical characteristics, consequences, and therapeutic concepts. Prana-Vyana vayu, and Alochaka pitta are the Doshas and Rasa-Raktha-Mamsa- are the Dushyas involved in the pathophysiology. This results in the Optic Nerve Head alterations and field abnormalities that might lead to blindness. Ayurvedic management prevents eye ageing, rejuvenates the eyes, and enhances eye function. Medicines used topically have a greater bioavailability than drugs administered orally. Ayurvedic medicines and therapies keep the body in check, illness as well as prevent blindness.

Key-words: Adhimantha, Glaucoma, Shalakya, Eye disease, Blindness.**Corresponding Author:**

Dr. Anjali Niras

Associate Professor, Dept of Shalakyantra

Yashwantrao Chavan Ayurved Medical College, Aurangabad.

Email : dranjalign@gmail.com

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INTRODUCTION:

In terms of indications and symptoms, the diseases Glaucoma and Adhimantha in Ayurveda are very similar. Adhimantha is a vision-threatening condition characterised by intense, excruciating pain in the eye as if the eyeball were being ripped out of the orbit, headache, progressive vision loss in a short period of time, and extreme redness. Glaucoma is a set of diseases defined by the loss of retinal ganglion cells and their neurons over time, resulting in typical optic nerve head cupping and vision field loss.^[1] Glaucoma affects around 60 million people globally, according to estimates. Glaucoma is present in 2.65 percent of adults over the age of 40. Primary open-angle glaucoma (POAG) is more common than primary angle closure glaucoma (PACG) worldwide, accounting for around one-third of all cases. In India, glaucoma is the second leading cause of blindness. Glaucoma affects 12 million individuals in India, accounting for 12.8 percent of the country's total blindness. Glaucoma affects around 11.2 million people aged 40 and older. Glaucoma, on the other hand, poses a bigger public health threat than cataract since the blindness it produces is permanent. While the efforts of the contemporary human population have succeeded in improving life expectancy, the risk of getting neurological illness has increased significantly as a result of the high-tech lifestyle. Despite significant technical advancements in the field of ocular medicine and surgery, current ophthalmologists face a number of difficulties that need particular attention to medical knowledge concealed in

old medical books.^[2] While addressing 76 different sorts of eye illnesses, Acharya Sushruta included a special chapter in Uttartantra for Sarvagat akshiroga, which includes Adhimantha. Adhimantha is one of the Netra rogas described in the classics, and it arises as a result of bad treatment of Abhishyanda.^[3] All of the Abhishyanda therapy modalities, as well as Raktamokshana, Basti, Virechana, Swedana, Tarpana, Putapaka, Doomapana, Aschyotana, Nasya, Seka, Shirobasti, Lepana, and Anjana, can be used in Adhimantha chikitsa.

Materials and methods:

Different texts book on ophthalmology, Shalaky Tantra, Articles, related to this topic were studied and analysed thoroughly.

Etymology:

The word Adhimantha is composed of words "Adhi + Manth" which means severe churning or twisting pain eyes. If not handled appropriately and mistreated, all Abhishyanda will progress to Adhimantha. In every Adhimantha, the term Tivra Vedana (acute agony) is a frequent trait. Due to the participation of multiple Doshas, there will be Dasha-specific discomforts in addition to pain. The patient feels as if his eye is being pulled out of its socket and churning along half of his skull, which causes extreme pain. In addition to discomfort, Adhimantha can cause blindness (Acharya Adhamalla in Dipika). As a result, the differences between Abhishyanda and Adhimantha include discomfort and eyesight loss. One of the disease's defining characteristics is the loss of eyesight (Vyadhi Swabhava). Adhimantha's

discomfort will spread to the temporal, dental, and occipital regions. Adhimantha is similar to any painful vision loss, such as Primary Open Angle Glaucoma (moderate discomfort or weight in the eyes), Acute Congestive Glaucoma, etc.

➤ **Vataja adhimantha (Acute Congestive Glaucoma)**

If Vataja abhishyanda is ignored, Vataja Adhimantha is produced. Severe pain of various nature like extraction, churning, foreign body sensation, pricking, tearing, splitting, bursting, Kampana and half headache etc. Vagabhata added in this the pain like Karna nada, churning type of pain in head eye and root of the nose and with giddiness.^[4]

➤ **Pittaja Adhimantha (Acute Congestive Glaucoma)**

It is Sarvagatha sadhya vyadhi. Pain or sensations as if caustic alkali or burning coal is applied to eye, eyelids suppurated and its margins excessively swollen, red streaks (Rakta raajeechitam) are seen i.e., severe congestion and eye appears like a piece of liver, lacrimation, perspiration, fainting, burning sensation in eye and head. ^[5]

➤ **Kaphaja Adhimantha (Simple Ghronic Glaucoma or Chronic Congestive Glaucom)**

In Kaphaja Adhimantha the symptoms like grittiness i.e., foreign body sensation, headache, mild edema i.e., inflamated but not excessively congested, cool feeling, lacrimation and slimy discharge, itching, heaviness, horripilation, difficulty in visualising object due to Avilata i.e.; cornel haziness, Nasadhmana, depressed black portion and elevated white portion i.e.

chemosis, Praseka i.e. excessive salivation are the chief manifestation.

➤ **Raktaja Adhimantha (Congestive Glaucoma or Secondary Glaucoma)**

Raktaja Adhimantha is generated if Raktaja abhishyanda is left untreated. Severe pain of various nature like pricking type, eye become red and discharges red secretion, tenderness due to increase IOP, coppery discolouration, burning sensation in the eye and head, etc.

Nidana:

The general Nidana of Netra roga are considered as the cause of Adhimantha.

- Aharaja nidana were habit of Abhisayandi guru aharas in an increasing order respectively. Abhishyandi and guru aharas leads to Kapha prakopa and Meda dhatu.
- Viharaj nidana such as Sookshma nireekshan, Swapna viparyaya, Alpa nidrata, excessive close work results in excessive convergence, strain in the eyes, which may bring the degenerative changes in the eye including trabecular meshwork, resulting in Glaucoma.^[6]
- Manasika bhavas like Bhaya, Klesha Shoka , Kopa and Irshya. Swapna Viparyaya leads to Agni mandya and Kapha prakopa.

Rupa (Clinical features)

The classical features of Kaphaja adhimantha are Shopha, Srava, Kandru, Gaurav, Avilta, Panshupurna, Shirahshool, Rupam pashyati dukhen, and Nasadhmana analogous with Primary Open Angle Glaucoma in which there is gradual progressive loss of vision associated with heaviness in eye and head without any complains of redness and swelling.

Symptoms

Haziness of vision , See halos around lights , Rapid onset of severe eye pain, Headache, Nausea, Vomiting .

Signs

Primary Open Angle Glaucoma / Chronic Angle Closure Glaucoma

- Elevated IOP (>21mm Hg)
- Optic disc cupping
- Visual field defects
- Acute Angle Closure Glaucoma
- Red eyes, pupil may be large and non-reactive to light
- Decreased visual acuity
- Corneal swelling
- Highly elevated IOP

Samprapti :

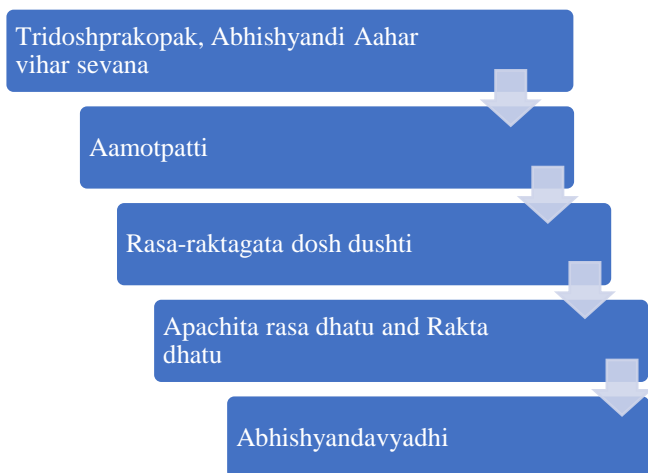


Figure 1 – Samprapti of Adhimanta

Samprapti ghatakas

Dosha - Prana-Vyana, Alochaka Pitta and Tarpaka Kapha

Dooshya - Rasa-Rakta-Mamsa-Medho dhatu

Agni - Jataragni Dushti leading to Rasa-Rakta-Mamsa-Medoagni Dushti

Ama - Jataragni and Dhatwagni mandyajanya

Srotas - Rasavaha-Raktavaha-Mamsavaha-Medovaha Srothus

Srothodusti Prakara - Sanga, Siragranthi.

Vimargagamana

Vyaktha sthana - Netra in particular Drishti

Roga marg - Madhyama Roga marga as Shiras is pradha

Prevention:

Anjana karma- Eyes mainly having Teja property, they can easily get affected by Kapha dosha. Rasanjana should be done once in week.^[7] Anjana scrapes and expel dosha from netra, vartma, sira, netra kosha and ashruvaha srotas through mouth, nose and eye.^[8]

Chakshushya Medicines - Triphala, Shigru, Shatavari, Triphala ghrita^[9]

Aahara - Ghee, Honey, Mudga, Raisins, Pomegranate

Eye exercises- Palming, distant and near focusing, rotational movements of eye will help to improve blood circulations to eyes. These exercises will strengthen the muscles of eyes and maintain vision level.

Yoga- Bhramari, Soorya Namaskara useful to improve strength of eye.

Kriyakalpas - Kriyakalpas are specific procedures for eyes. They lubricate and rejuvenate the eyes. Impurities are expelled out. It helps to bring back brightness and clarity to the eyes.^[10]

Tarpana - Tarpana is very effective Kriyakalpa. It is used to treat early formation of glaucoma

Nasya karma – Vaisheshika nasya is useful to improve eye sight. It is indicated in visual disturbances like Timir.^[11]

Management

At early stage- Tikshn shirovirechan, Tikshn kawaldharan, Dhupan and Lepa.

In Samawastha- Seka, Bashpsweda, Lepa, Madhur, Tikta intake. Avoid Anjana, Ghritpan, puran, Kashaypan, heavy food intake as it can result into Ama formation.

In Niramawastha- Snehana, Swedana then Sirawedh at forehead. Then Vaman, Virechan, Basti, Shirobasti, Nasya, etc.^[12] After this Shodhan chikista, internal dosh Shamak chikista will helpful.

Locally- Kriyakalpa, Pindika, Agnikarma, Raktamokshana.

According to Chakradutta^[13]

- a) Vataja adhimanth with unctuous and hot drugs (Singdha/Usna)
- b) Pittaja with soft and cold (Mrdu/Sitala)
- c) Kaphaja with irritant, rough, hot and non slimy drugs (Tiksna, Ruksa, Ushna, Vishada)
- d) Raktaja adhimanth treated as Pittaja adhimanth and rakta shamak chikitsa.
- e) In the Purva rupa stage of Abhisyaanda and Adhimantha, tiksna gandusha and Nasya are advised.

Discussion:

Glaucoma is known as "The Sneak Thief of Sight" since there are no signs and vision loss is irreversible once it occurs. It is possible to lose up to 40% of one's vision without even realising it. Glaucoma is a collection of illnesses defined by a progressive optic neuropathy that takes sight gradually and without warning. Glaucoma has no known cure, although it can typically be treated before it develops to the point of blindness. The ancient Indian system of natural and holistic medicine aims to maintain health and

lengthen life. It nourishes the eyes and aids in the treatment of illnesses. Glaucoma is a series of illnesses characterised by a gradual loss of vision. Everyone is at risk for glaucoma, however, some of the stronger risk factors include being age 40 or older, genetic history, systemic conditions such as diabetes and high blood pressure, thin cornea, etc. Ayurveda explained that if Abhisyaanda are neglected it leads to Adhimantha. According to Ayurveda Adhimantha is a Sadhya i.e., curable disease. So, the treatment principles explained for Adhimantha can be applied to treat Glaucoma and are helpful to restore deteriorating vision. Also following the concept of Dinacharya and Ritucharya as per Ayurveda texts may prevent the progression of diseases.^[14]

Conclusion:

Glaucoma is one of the neglected diseases and the second highest cause of blindness after cataract. Glaucoma is thus a global public health problem. Agnimandya, malasamchya, pranavaha and rasavaha srotodushti seem to play a significant role in glaucomatous damage. Eye Pain is the important presenting feature similar to a pathognomic feature of Adhimantha. Ayurveda prefers prevention is better than cure. Basic principle of Ayurveda is helpful for management. Ayurveda management is avoiding ageing effects in eye, rejuvenates the eyes and improves function of eye. Ayurveda also prescribed conventional formulation such as Navnetrasatri varti, Gairikadi lepa, Nimbaptradi gutika, Bilvaanjana etc. These formulations disrupt

the Samprapti of disease, improve vision, relief pain and maintain IOP level.

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