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Case Study

CRITICAL ANALYSIS OF ENDOPHTHALMITIS IN AYURVEDIC VIEW AND MANAGEMENT OF ITS ASSOCIATED SYMPTOMS THROUGH AYURVEDA - A CASE REPORT

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ABSTRACT

Endophthalmitis is a sight threatening inflammatory disorder of the eye which affects the uveal tissue, retina, vitreous, anterior chamber and posterior chamber. It occurs as a result of endogenous or exogenous spread of infecting organisms to the eye. The most commonly seen exogenous form of endophthalmitis are post-operative infection following intra ocular surgery and as a complication of perforated injury to infected corneal ulcer. Out of the infected corneal ulcer mycotic form is the most common variety. In severe conditions of endophthalmitis vision cannot be regained. Further management to control the infection is evisceration or enucleation. In Ayurveda there is similar condition which explained in two contexts. One is *Paktya sukla* in the context of *Krishnagata roga* and the other is *Akshipakatyaya* in the context of *Sarvakshiroga. Pakatya sukla* can be considered as exogenous origin of endophthalmitis due infected corneal ulcer and *Akshipakatyaya* as endogenous or systemic origin of endophthalmitis. Generally, the condition is considered as *Asadhya* but in the initial stages if it is not associated with severe pain the condition can be managed symptomatically with guarded visual prognosis. In this article the same concept is explored along with the details of a diagnosed case of endophthalmitis presented in regular OPD with associated pain, redness, discharge and photophobia. Diagnosed the case as *Pakatyaya sukla* and managed with drugs and procedures having *Pitha samana*, *Rakta Prasadana* properties and application of *Jalooka.* With the treatment duration of 15 days the associated symptoms resolved completely.

INTRODUCTION

Netra is composed of *Mandala, Sandhi* and *Patala* which are five six, six in numbers respectively. The term *Mandala* is used to describe visible parts of eye. They are arranged in concentric circles as *Drishti mandala, Krishna mandala, Sukla mandala, Vartma mandala* and *Pakshma mandala.* From these anatomical description of *Netra Acharya Susrutha* mentioned *Drishti mandala* is having the dominance of all *Mahabhootas* and constitute 1/7 portion of *Krishnamandala*[1]. This *Drishti mandala* due to its location and function can be considered as optical zone of cornea having crucial role in vision. *Krishna mandala* has predominance of *Vayu* and has its origin from *Tejo mahabhuta* and *Rakta dhatu*.

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This *Rakta dhatu* is responsible for its high sensitivity and transparency is maintained by normal functioning of *Vata dosa*[2]. Analyzing the structural, functional and pathological aspects this *Krishna mandala* can be compared with Cornea of eye and the concept of three-layer prognosis of *Kshatasukla* can be compared with three types of corneal opacity and its state of curability. So any defect in this layer is capable of producing symptoms ranging from mild corneal abrasion to blindness. A perforated corneal injury can go beyond corneal endothelium and may cause aquous leakage, this is illustrated in *Lakshana* of *Savrana sukla* as *Usnasrupatha* through *Soochi vyadha.* These types of symptoms share resemblance with different types of *Sravas* seen in *Nadi vrana* and mild injuries or defects in the superficial layers of *Krishnamandala* can be heal easily by adopting the management of *Sadyovrana chikitsa*.

Exploring the details of keratitis, it is already mentioned most of the time corneal infections arises from exogenous source like conjunctival sac, lacrimal sac, infected foreign bodies, infected vegetative

material and water or air borne agents. Detailing the anatomical perspective, it is notified that diseases of the conjunctiva readily spreads to corneal epithelium, that sclera to stroma and uveal tract to endothelium of cornea.[3] Due to these anatomical continuity corneal infections can readily spreads to other parts of eyes and can cause wide spread manifestations. Because of these reasons an infected corneal ulcer can leads to conditions like endophthalmitis, panophthamitis and even phthisis bulbi which further leads to irreversible vision loss.

AIMS AND OBJECTIVES

- To explore the pathogenesis of endophthalmitis in Ayurvedic view
- Symptomatic management of endophthalmitis in Ayurvedic view by describing a case

Case Report

A 68-year-old male patient reported in the regular OPD of *Shalakyatantra* department at Govt Ayurveda college, Trivandrum complaining of pain, redness and pus discharge from right eye. The right eye was already diagnosed as Endophthalmitis and having marked loss of vision since 40 years. 15 years back he also diagnosed to have T_2 DM and systemic hypertension for which is under regular medications.

40 years back he had an injury to the right eye while cutting the grass from the field. On the same day he had severe pain and redness in eye and took some conventional medications without proper consultation and advices from Doctors. The very next day itself he noticed profuse swelling, discharge, pain, redness and light intolerance for the right eye. Then he consulted nearby Hospital and on detailed investigations the condition is diagnosed as corneal ulcer due to perforating injury. He continued the medications and treatments for a duration of 3 months and by that time the pain, redness and swelling reduced. But he later noticed black portion of eye lost its normal color and appeared as white along with marked reduction in vision with right eye. For the last 3 months he is suffering from recurrent attacks of acute symptoms like redness, watering and pus discharge from right eye.

His visual acuity status was PL +Ve only for right eye and 6/12P improving to 6/9 with power glass for left eye. Applanation tonometry measured intra ocular pressure of 8mmhg in right eye and 12 mmhg in left eye. Torch light examination showed mild degree ptosis, oedema to upper and lower lids, ectropion of lower lid and reduced palpebral height for right eye. Slit lamp examination revealed circum corneal and bulbar conjunctival congestion with neo vascularization in the cornea and it is unfeasible to examine the structures beyond the surface of eyeball due to thick corneal opacity.

Condition of Eye Before Treatment

Treatments and Observations

Course of treatment started with *Guloochyadi Kashaya, Kaisora guggulu* and *Tiktaka gritha* as internal medicines and among which all are basically having *Pitta – Rakta samana* properties. Along with this *Avipathy churna* was given daily as *Samana* dose for *Nitya Virechana*. Since the patient is diabetic, *Sivagulika* given one each twice daily and *Chandraprabha gulika* given two each morning and evening. By the third day of treatment patient got mild relief from pain and light intolerance.

Internal Medicines

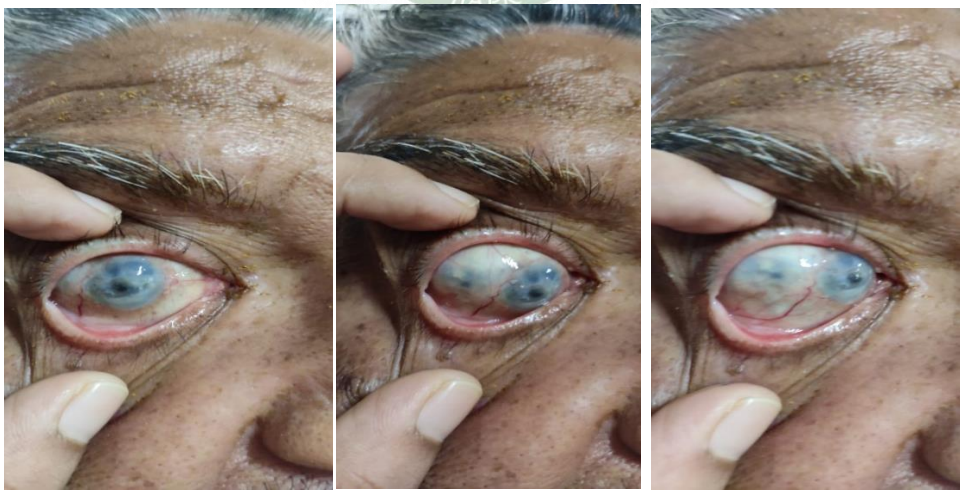
S.No	Medicine	Dose	Days
1	*Guloochyadi kashayam*	90 ml BD	15
2.	*Avipathy choornam*	5 gm with *kashayam*	15
3.	*Kaisora guggulu*	1-0-1 after food	15
4.	*Sivagulika*	1-0-1 with *kashayam*	15
5.	*Chandraprabha gulika*	2-0-2 after food	15
6.	*Vicharana snehapanm* with *Tiktaka Gritham*	15gm to 80 gm – Morning and Evening	7

Procedures

S.No	Procedure	medicine	
1.	*Bidalakam*	*Mukkadi gulika*	7 days
2.	*Sekam*	*Vara* and *darvi kashyam*	7 Days
3.	*Abhyangam and ushnambu snanam*	*Bala tailam*	1 day
4.	*Virechanam*	*Avipathy choornam* in *Draksha yashti hima* at 7 am	1 day
5.	*Jalookavacharna*	Both forehead	3 days

***Jalookavacharana* Treatment Over Forehead Area**

The treatment was planned for a period of 15 days including both internal and external therapies. Initially *Vicharana snehapanam* was given twice daily at 7am and 8pm using *Tiktaka ghritam* for a period of seven days with dose beginning from 15gm to 80gm on day seven. External therapies included *Bidalakam* using *Mukkadi gulika* followed by *Sekam* with *Vara* and *Darvi kashayam* twice daily for 7 days. These procedures gave considerable relief from discharge and swelling of eyelids. By the end of *Snehapana* and *Virechana* he noticed marked relief from pain and photophobia. But mild degree of congestion persisted for which next day after *Virechana* we started leeching therapy over right forehead and temple region. After 3 days of leeching therapy congestion resolved completely and during the time of discharge he was completely free from symptoms. During the follow up period he was advised to continue *Guloochyadi Kashaya* and *Avipahty churna* 5gm daily and to avoid *Pitta-rakta vardhaka aaharavihaaras* as a preventive aspect.



Condition of Eye After Treatment

DISCUSSION

While describing the prognosis of *Kshatasukla, Vagabata* mentioned three layers for *Krishnamandala* and named it as *Twacham, Dwitheeya* and *Thritheeya mandala.* When deeper layers are involved in the injury the symptoms and signs are worsening and prognosis became poor which eventually turns in to *Asadya*. This type of pathogenesis can be seen during the progression of three types of corneal opacities. Nebular opacities involving Bowman's layer and superficial stroma, Macular opacity is produced when scaring involving about half of stroma and Leucomatous opacity involving scaring of more than half of corneal stroma[4]. From the 3 stage prognosis of *Kshata sukla,* when superficial layer is involved the condition is easily curable. Management of such superficial injury can be done by adopting *Sadyovrana*

chikitsa which includes *Seka* and *Bahya abyanthara snigdha prayogas*[5]. Bandaging the injury with medicines having *Ropana* properties like *Durva gritha* and honey yields the best result within 24 hours. When injury is probing to inner layer (2nd) this condition become *Yapya* and the same will be *Asadya* when all the 3 layers are involved.

Most of the disease entities of *Krishna mandala* are basically difficult to manage that is either *Sastra sadya* or *Asadya* (except *Sudha sukram).* After *Kshata sukra* when the injury further reaches beyond 3rd layer it will make widespread manifestations in eye and become *Asadya* which can be seen in the features of *Akshipakatyaya* and *Pakatyaya suklam*. That is from an injury the condition turns to incurable stage of blindness. While critically analyzing the prognosis of *Pakatyaya sukla* it is mentioned as *Varjayet Teevravedhanam,* pointing towards the probability, that the condition can be managed if it is not associated with severe pain. While describing *Akshipakatya, Susrutha* said this condition is *Akshikopa samuthitham,* that is resulted as a complication or as an end stage of certain other eye diseases. It also indicates an endogenous pathology is capable for causing whole eye manifestation which shows the features and pathogenesis similar to that of endogenous endophthalmitis.

Endophthalmitis is defined as an inflammation of the inner structures of the eye ball, that is uveal tissue and retina associated with pouring exudates in the vitreous cavity, anterior chamber and posterior chamber[6]. Etiologically it may be infectious or non-infectious and perforation of infected corneal ulcer is common to cause exogenous infective endophthalmitis. A corneal ulcer may be defined as discontinuation in normal epithelial surface of cornea associated with necrosis of the surrounding corneal tissue.

Mycotic form is the common variety of corneal ulcer caused by injury with vegetative material or by animal tail. Pain, watering, photophobia, blurring of vision, redness of eyes are common symptoms whereas swelling of lids, conjunctival chemosis, ciliary congestion and epithelial defect associated with infiltrates and stromal odema, hypopyon are the signs seen in corneal ulcers. Due to the anatomical continuity of cornea with uveal and conjunctiva, any form of chronic pathological changes can make manifestations in these structures also. So, a corneal ulcer can develop into iridocyclitis which on later stages can affect the entire structures of eyeball resulting in endophthalmitis or panophthalmitis.

So, when the injury is involving first 2 layers of *Krishna mandala* only it results in the formation of easily curable ulcers. Involving the 3rd layer and beyond that non healing perforated ulcers will be formed. Apart from *Pakatyaya sukla* and *Akshipakathya* there exists one another condition in classics which involves *Paka* to whole eye that is *Sushkakshi paka.* This *Suskhakshi paka* belongs to *sarvakshi roga* due to its extensive presentations in the whole eye. Even though *Acharya* included *Pakatyaya sukla* and *Akshipakatyaya* in *Krishnagata roga* while exploring the symptoms these imparts defects in *Saravaakshi* like *Sushkakshi paka* and persist for long time. On the basis of chronicity of diseases *Vagbhata* has an exclusive category of eye disease which is known as *Pilla rogas.* Giving due considerations to the chronicity in these *Netra pakas* we can adopt *Pilla roga chikitsa* like repeated *Raktamokshana, Virechana* and *snehapana*. *Susrutha* give some additional features to incurability of *Savranasukla* such as perforations in the middle, surrounded by granulation tissue, having neovascularization and corneal congestion with chronicity[7]. Amidst of this incurability there are certain conditions which gives options to treat the associated symptoms of eye, this include when the lesion not associated with severe pain, not near the pupil, not so deep, and not in more than two places. Even though the visual prognosis of the condition is very poor we can manage the associated symptoms and further complications. In *Pakatyaya sukla* there is special mention that if the condition is not associated with severe pain, it can be kept as such without causing much complications for long time (*Yapya).* For management of this condition, we can adopt *Akshipakatyaya chikitsa*, which belongs to the category of *Pilla roga*. So in this context we can adopt the principles of *Pilla roga chikitsa* includes Repeated *Virechana, Sonitha mokshana* and *Pitta-rakta samana* measures[8].

CONCLUSION

Analyzing the symptoms, signs and prognosis of endophthalmitis it shares close similarity with *Pakatyaya sukla* and *Akshipakatyaya* mentioned in Ayurveda classics. Endophthalmitis is condition causing irreversible damage to eye associated with visual disturbances *Pakatyaya sukla* is also considered as *Asadya* but when it is not associated with severe pain the condition can be kept as such without further complication. This case is an illustration for progression of mycotic corneal ulcer into endophthalmitis causing recurrent inflammatory reactions and visual problems. The associated complications can be managed by adopting the treatment principles of *Pilla roga* such as *Snehapana, Virechana* and *Jalooka avacharana* for *Rakta-Pitta samana* and *Rakta prasadana.*

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