

A CASE REPORT AND CRITICAL UNDERSTANDING OF COATS' DISEASE WITH AYURVEDIC PERSPECTIVE

Bhavya B M¹ Jagadeesh K²

¹ Consultant, Department of Shalakyatantra, Sri Dharmasthala Manjunatheshwara Institute of Ayurveda and Hospital, Bengaluru, Karnataka, India.

² Principal, HOD and Professor, Department of DravyaGuna, Sri Dharmasthala Manjunatheshwara Institute of Ayurveda and Hospital, Bengaluru, Karnataka, India.

ABSTRACT

Coats' disease is a rare congenital, non-hereditary eye disorder, causing full or partial gradual loss of vision characterized by abnormal development of blood vessels behind the retina. The exact underlying cause is not known but in some cases it may be due to genetic mutations. Coats' usually affects only one eye and occurs predominantly in young males 1/100,000, with the onset of symptoms generally appearing in the first decade of life. Peak age of onset is between 6–8 years of age, but onset can range from 5 months to 71 years. At advanced stages, retinal detachment is likely to occur. Glaucoma, atrophy, and cataracts can also develop secondary to Coats' disease. Treatment depends on the symptoms present and may include cryotherapy, laser therapy, and/or surgery. Enucleation is an option if pain or further complications arise. Our patient presented to us in the Department of *Shalakyatantra* of SDMIAH, Bengaluru, with the symptom of painless gradual loss of vision in both Eye with left eye more than right eye since 5-6 years. He was diagnosed as suffering from coats' disease, underwent cataract surgery, cryotherapy and was continuously under modern medication with no improvement and the vision was deteriorating continuously. Owing to the above factors this case was taken up and managed with *ChakshushyaBasti*³, *Shalakyakriyakalpas*¹, and supportive medications which helps in preserving the existing vision and effort was made to critically analyze it with Ayurvedic perspective. After 2 follow up treatment for 1 week as inpatient there was improvement in vision from perception of light to counting fingers'. *Kriyakalpas*¹ helps in improving the vision and *ChakshushyaBasti*³ acts as a *Rasayana* for *Chakshu* and has *Raktapittahara* effect. Both can be used as a safe method for patients if used judiciously. It lowers the risk factors, is also cost effective, avoids complications and stops the further progress of the disease. Persistent and aggressive long-term treatment for Coats' disease is recommended because the prognosis without treatment is poor.

Key words: Coats' disease, Enucleation, *ChakshushyaBasti*, *Kriyakalpa*.

INTRODUCTION

Case Report:

A 37 year old man, presently unemployed reported to the department of *Sha-*

lakyatantra with OPD number 067479/OP with chief complaints that included gradual

loss of vision in both eyes with left eye more than right eye since 5 years associated with occasional floaters and headache. He further reported a gradual increase in both frequency and severity of the above symptoms. He was primarily diagnosed as suffering from coats' disease in Bangalore Nethralaya and was treated for the same. He was administered with Intravitreal Injection Avastin 3 times with 1 month gap into both eyes in Mahadevappa eye hospital, Tumkur 3 years back. He also underwent Laser therapy once for both eyes and cryotherapy for left eye 2 years back in Aravind Eye Hospital, Madurai. He was operated for cataract in left eye 1 year back in Bangalore Nethralaya. He was continuously on eye drops neporich 2 times daily optrex drops. Compliance with these treatment modalities was sporadic. His family ocular history was unremarkable.

On last general examination 6 months back, he was diagnosed with diabetes which was controllable on OHA (figure1) and is under medication and triglycerides was slightly more than

normal (figure 1) in third visit and advised medications.

Diagnostic Data (Visit #1)³:

Ocular evaluation:

- Visual Acuity Evaluation
OD: Hand movements close to face
OS: Perception of light
- Color vision, tested via Ishihara plates: showed colour vision defect for all colours(except black and white in both eye).
- IOP (Schiotz Tonometry):
OD: 17 mmHg
OS: 18 mmHg
- Pupils:
SRL- Both Eyes
Left Eyes- Pseudophakia, slightly updrawn
- Extra ocular Movements:
Left divergent strabismus with 15 degree angle of deviation. No nystagmus
- Confrontational Visual Fields:
Central visual field defect
- External Examination:
Normal, both sides

Slit Lamp Examination

OD	STRUCTURE	OS
<i>clear</i>	External Lids/ Lashes	<i>clear</i>
<i>pink, smooth</i>	Palpebral Conjunctiva	<i>pink, smooth</i>
<i>no infection</i>	Bulbar Conjunctiva	<i>no infection</i>
<i>clear</i>	Cornea	<i>clear</i>
<i>open</i>	Angle Approach	<i>open</i>
<i>normal</i>	Anterior Chamber	<i>deep and quiet</i>
<i>(+) transillumination</i>	Iris	<i>(+) transillumination</i>
<i>clear</i>	Lens	<i>pseudophakic</i>

Dilated Fundus Examination

OD	STRUCTURE	OS
<i>0.1 with distinct borders</i>	C/D Ratio	<i>0.1 with distinct borders</i>
<i>Hypoplasia, sluggish reflex</i>	Macula Fovea	<i>Hypoplasia, sluggish reflex</i>
<i>(+) tortuosity</i>	Vessels	<i>(+) tortuosity</i>
<i>Hypopigmentation of retinal pigment epithelium</i>	Periphery	<i>Hypopigmentation of retinal pigment epithelium</i>

Treatment Plan:

Patient was treated as inpatient in the department of *shalakyatantra* for 10 days with *Kriyakalpa's* and internal medications like *saptamritalouha* and *sameerapanchakakashaya*. A follow up appointment of 1 month was given.

Diagnostic Data (Visit #2, Follow-up)⁴:

Subjective improvements were seen and uncorrected visual acuity was hand movements at 3 meters and close to face in right eye and in left eye respectively. Depth perception and field of vision improved as told by patient.

Plan: Treated as inpatient, same treatment modalities were followed. A follow up appointment of 1 month was given.

Diagnostic Data (Visit #3, Follow up)⁴:

By the end of 3 follow ups' subjective improvements were seen and uncorrected visual acuity increased from hand movements close to face to 4 meters in right eye and from mere perception of light to hand movements at 2 meters in left eye. Depth perception and field of vision also improved.

Treatment Plan:

Patient was treated as inpatient for 14 days, with *chakshushyabasti*³ 8 days, *shalakyakriyakalpa*¹'s and internal medications like *saptamritalouha* and *sameerapanchakakashaya* was given. A follow up appointment of 1 month was given.

DISCUSSION^{6,7,8,9,10}:

In 1908 Coats described an ophthalmologic disease, characterized by unilateral retinal vascular abnormalities and retinal exudation, which usually occurred in young males. In 1912 Leber reported on a condition with multiple retinal aneurysms, later known as Lebermiliary aneurysms. In 1955 Reese considered as first Coats' disease and Lebermiliary aneurysms as a spectrum of the same disease. Today Coats' disease is a well-known ocular disorder, defined by Shields et al. as idiopathic retinal telangiectasia with intraretinal or

subretinal exudation, without appreciable signs of retinal or vitreal traction. If untreated it can lead to total retinal detachment and secondary glaucoma, sometimes requiring enucleation. It typically present with unilateral visual loss, strabismus or leukocoria and tends to progress to visual loss, it may stop progressing on its own, either temporarily or permanently. Prognosis for people with Coats' disease include the stage at which the person is diagnosed, the rate of disease progression, and the effectiveness of treatment. So, every effort was made to protect it from harmful effects.

The key to successful long term preservation of vision in Coats' disease included prevention of visual loss by approaching to *Ayurvedicshalakya* treatments, medications, early detection & regular follow-ups, control of any systemic diseases if present, avoid Smoking, & Alcohol consumption. Here an attempt has also been made to discuss the concepts, observations and experiences in the case report and also to critically analyze Coats' disease with Ayurvedic perspective by considering the pathological changes, signs and symptoms which are seen.

1. *Siragata Vata*²:

Acharya Charaka has mentioned that if *dustavayu* gets inside the *sira* it manifests with following *lakshanas-shopha* (edema or exudation of fluids), *shushyati* (drying up, in this context can be taken as sclerosis of retinal vessels as a result of its complications like retinal detachment etc), *spandate* (abnormal vasospasms-photopsia's can be broken down into 3 categories: mechanical, inflammatory, or vascular. Vascular causes of photopsia include retinal vasospasms, *sputa* (ischemia of retinal vessels), either it manifest as *tanvyo* (attenuated or thinned vessels) or *mahatyo* (capillary dilations). In this case it is abnormal dilated retinal vessels (retinal telangiectasia)^{2,11,12,13}.

2. *Kaphajakacha*:

काचेतुनेप्रभेन्द्वकेप्रदोपाद्यैरिवाचेतम्^{4,5}

A.H.12/17

Acharya Vagbhata mentioned that in *kaphajakacha* there will be appearance of things like moon, sun etc. which are less radiant. This can be understood as patient suffering from blurred vision, floaters, and flashes of lights which are more commonly seen in coats' disease.

3. *KaphajaLinganasha*:

सिताभाचसाद्दृष्टेः स्याल्लेङ्गनाशेतुलक्ष्यते।

मूतैः कफोद्दृष्टेगतः स्निग्धोदशेननाशनः ॥

बिन्दुजेलस्येवचलः पाद्मिनीपुटसास्थितः।

उष्णसकोचमायातेछायायापरिसर्पते ॥

शखकुन्देन्दुकुमुदस्फटिकोपमशुक्लमा^{4,5}

A.H.12/18-19

When it reaches next stage, in *linganasha* everything appears whitish in colour, which can be just equal to perception of light; when due to further vitiation of *dosha* loss of vision will increase and patient perceives things as a droplet on lotus petals. Blurriness of vision depends on brightness and shade. *Drishti* is whitish similar to *shanka*, *kundaflower* (jasmine), moon, lotus and *sphatika* (quartz stone) which can be understood as leucocoria.

As there is abnormal permeability of retinal vessels which are fundamental in the pathogenesis of this case, it is suggested that pathological changes may initially derive from a functional or structural breakdown of blood-retinal barrier i.e. vascular endothelium, giving rise to plasmatic vasculosis and mural disorganization, and that these result in aneurysmal dilations and telangiectasia. Leakage of blood components then increase to form intra-retinal and sub retinal exudates, haemorrhages, lipid and fibrin deposits, with phagocytic proliferation, disorganization and destruction of retinal elements, and eventually glial and fibrous tissue organization^{6,7}. The above case is clearly illustrative of these points. Hence it is neces-

sary to manage this case by exploring the following treatment principles—

- *Kledahara*
- *Raktavahasrothodustiharana*
- *Vatanulomana*
- *Shophahara*
- *Chakshushya*

Hence this disease was considered to critically analyse, report and manage with *Chakshushya Basti*³, *Shalaky Kriyakalpas*¹ and internal medications like *saptamritalouha* and *sameerapanchakakashaya*.

CONCLUSION:

The tremendous advancements made in the science of ophthalmology are helping more in disease diagnosis than in treatment, there are many challenging problems like coats' disease exist before modern ophthalmologists. Cryotherapy, Laser therapy and or surgery is the latest advancement which are widely used in treatment of Coats' disease compared to medical management with Steroids, Anti VEGF's which are typically used during the early stages of the disease to control inflammation, neovascularization and leaking from blood vessels. These are invasive techniques which require frequent intra ocular injection of therapeutic agents, are also extremely expensive and due to complexity of angiogenesis single agent therapy is inefficient in many patients.

All these treatments have their own limitations and complications. This can only retain the existing vision and eye rather than regain vision which has been lost. So, the present modern line of management is not fully satisfactory as a curative of this disease.

Hence framing treatment modalities was done along with identification of specific medications which can be used in conjunction with the current treatment or separately will improve the outcome of patients with Coats's disease.

Prognosis for people with Coats' disease include the stage at which the person is diagnosed, the rate of disease progression, and the effectiveness of treatment. Based on the disease complexity and its impact on vision, this disease was considered to critically analyse, report and manage with *Chakshushya Basti*³ for 8 days, *Shalakyakriyakalpas* for 7 days¹ and internal medications like *saptamritalouha* and *sameerapanchakakashaya* 3 times daily for 3 months. Follow up period of 1 month was suggested. By the end of 3 follow ups' there was improvements in vision which increased from hand movements close to face to 4 meters in right eye and from mere perception of light to hand movements at 2 meters in left eye. Depth perception and field of vision has also improved. At no stage progression of disease was seen during treatment course. This suggests that if the patient has resorted to our Ayurvedic treatment in early stages marked improvements might have been promised. However, long term follow-up, prompt diagnosis and accurate treatment in an early stage are very important to save as much vision as possible.

Patient Perspective (translated to English): *Ayurveda* the ancient system of medicine has its own unique line of management when it comes to treatment of diseases. People usually hesitate to take eye treatments in Ayurveda as they are unaware of the treatments available here. I turned towards *Ayurveda* from last 1 year after 5 long years of treatment in modern eye hospitals which is also expensive. My treatment was started from last 3 months and my condition is improving. I wish to give regular follow ups and co-operate for any further treatments. Informed Consent has been taken by the patient (figure 2).

REFERENCES

1. Sushruta. SushrutaSamhita-- with the Nibandhasangraha Commentary of Sri Dalhanacharya and the NyayachandrikaPanjika of Sri Gayadasacharya on Nidanasthana. Edited by VaidyaJadavjiTrikamjiAcharya and Narayan Ram Acharya 'Kavyatirtha', 1st ed. Varanasi: Chaukambhasurbharatiprakashan; 2008, UttaraTantra 18/4, p.633
2. Agnivesha. Carakasamhita—Elaborated by Charaka and Dridhabala with the Ayurveda – Dipika commentary by Chakrapanidatta, edited by VaidyaJadavajiTrikamjiAcharya, 5th ed. Varanasi: ChaukhambaSurbharatiPrakashan; Reprint 2000, ChikitsaStana 28/36, p.738
3. Vagbhata, AshtangahrdayamVidyotini Hindi Commentary by KavirajAtridevgupta Edited by VaidyaYadunandanUpadhyayaVaranasi:Chaukhambha Sanskrit Bhavan; Reprint 2010, Kalpasthana 4/27-28, p. 757
4. Vagbhata, AshtangahrdayamVidyotini Hindi Commentary by KavirajAtridevgupta Edited by VaidyaYadunandanUpadhyayaVaransi:Chaukhambha Sanskrit Bhavan; Reprint 2010, UttaraSthana 12/17-19, p. 817
5. Dr.R.C.Choudhury. Shalakyavijnana. 20th Ed. Varanasi: ChowkhambaOrientalia; 2006, p.361.
6. American journal of ophthalmology
7. www.sciencedirect.com
8. Pubs.rsna.org
9. www.healio.com/ophthalmology/journal
10. www.mcw.edu/ophthalmology
11. www.slideshare.net/ophthalmologyweb/coats.disease
12. http://rarediseases.info.nih.gov/
13. www.retinalphysician.com

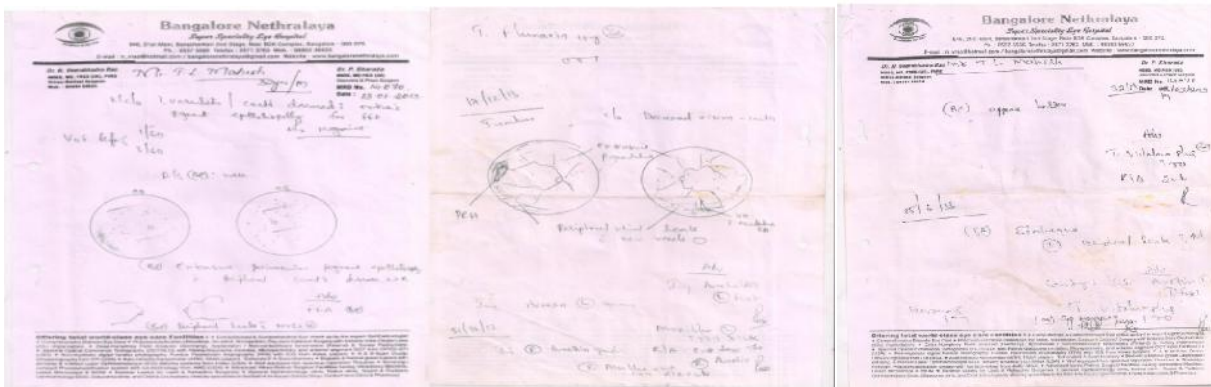
Figures 1:
Investigations:



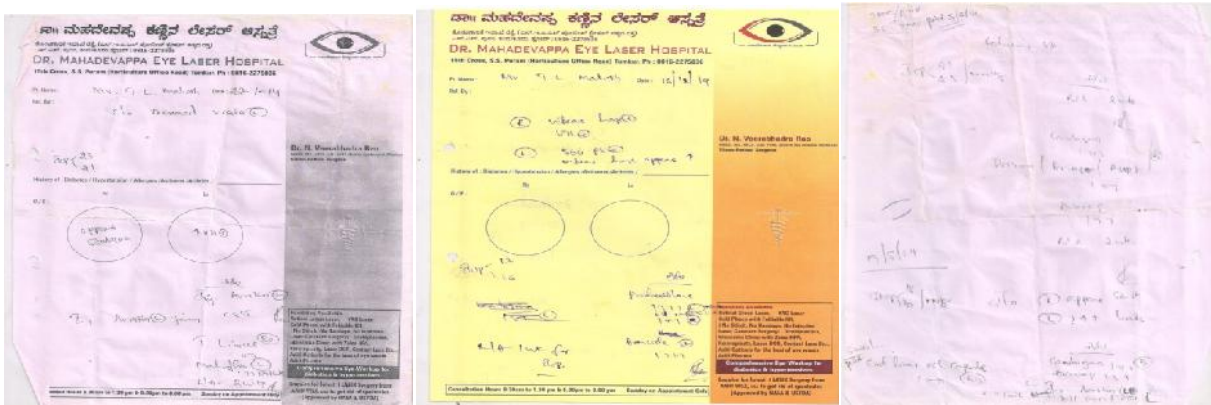
Figure 2:
Consent form:

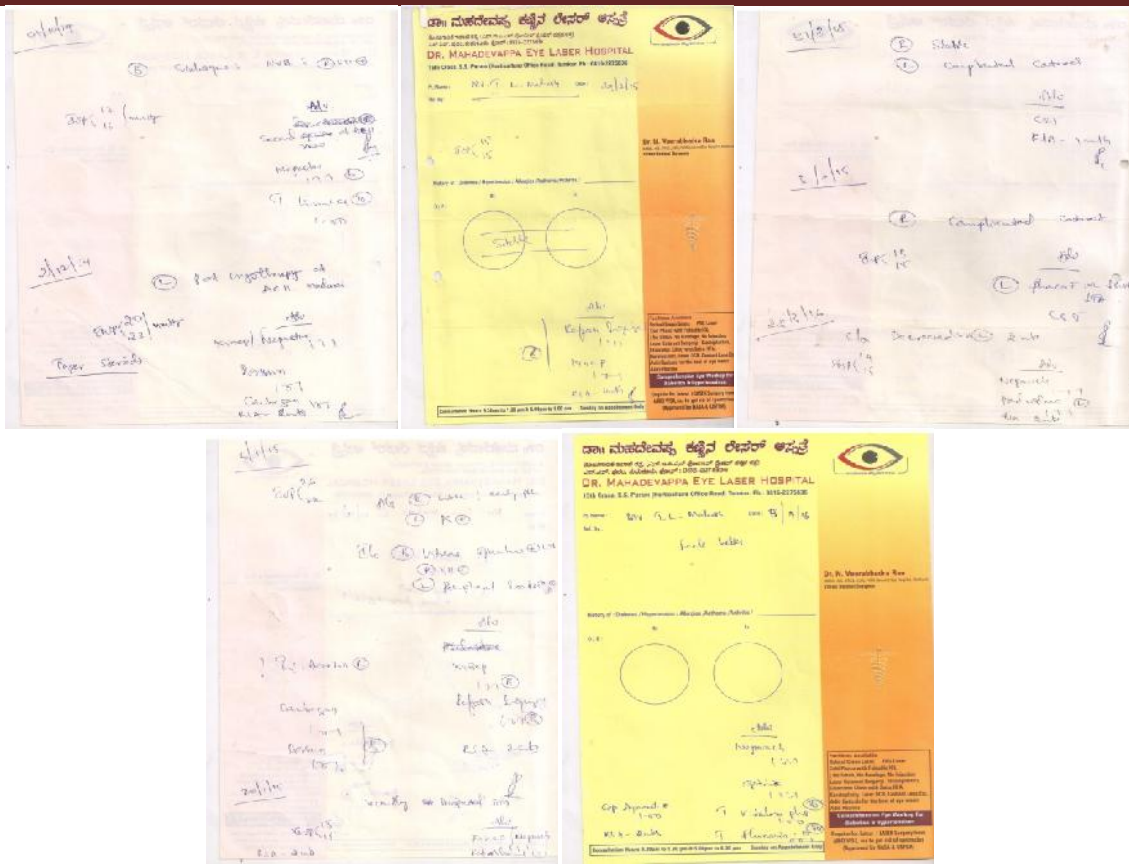


Figure 3:
Before treatment:



During & After Treatment (Figure 4):





CORRESPONDING AUTHOR

Dr. Bhavya B.M

Consultant, Dept. of Shalakyatantra,
SDM Institute of Ayurveda and Hospital,
Bengaluru, Karnataka, India;
Email:drbhavya25@gmail.com

Source of Support: Nil

Conflict of Interest: None Declared