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## Review Article

### CONCEPT OF DRISTI AND ITS CLINICAL SIGNIFICANCE IN AYURVEDA

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#### ABSTRACT

Shalakya tantra is a specialized branch of Ayurveda, which deals with diseases above the clavicle and includes detailed description of netravigyana. Sushruta described the netra sharira according to nidana and chikitsa into three distinct parts called mandala, patala and sandhi. Mandalas are 5 in number and patala and sandhi are 6 in number. Out of six netra patals two are external, confined to both the eye lids and four patalas confined to the internal eye ball i.e. dristi. The same division was adopted by Vagbhatta, Madhavakara and Bhavamishra also. The fact regarding the netra sharira adopted by ancient surgeons is still a matter of debate. The objective of this literary research paper is to find proper correlation of dristi to those mentioned in modern ophthalmology. All the classical Ayurveda texts, research papers, Modern ophthalmology books and journals were searched to get the references. From the study it can conclude that dristi is the functional aspect of vision which is confined to dhatus i.e. sukshma dhatu or asthaya dhatu, vision and visual field defects depend on vitiated dosha and affected dhatu. Symptoms of dristi rogas complement to the diseases of lens, retina, optic nerve and optic pathways described in Modern ophthalmology.

**Key words:** Netra patala, Dristi, Dristipatala, Dristigatarogas, Mandal, Patal, Ayurveda.

#### INTRODUCTION

Shalakya tantra is a specialized branch of Ayurveda, which deals with diseases above the clavicle and includes detailed description of netravigyana or Ophthalmology. The available literature related to this specialty is reproduced from original texts of Nimitantra in uttarasthan of Sushruta samhita. He has described gross ocular anatomy in the first chapter of uttaratantra. Sushruta described the netra Sharira according to nidana and chikitsa into three distinct parts called mandala, patala and sandhi. Mandalas are 5 in number and patala and sandhi are 6 in number<sup>1</sup>. Out of six netra patals two are external, confined to both the eye lids and four patalas confined to the internal eye ball i.e. Dristi, which is the seat of Timir<sup>2</sup>. The same division was adopted by Vagbhatta, Madhavakara and Bhavamishra also. The fact regarding the netra sharira adopted by ancient surgeons is still a matter of debate. The objective of this literary research paper is to find proper correlation of dristi to those mentioned in modern ophthalmology. Dristi can be simply considered as the functional unit of eye, which performs vision. It is not mere an anatomical structure but the composition of all the essential dhatus of internal eye ball<sup>3</sup>. So, all diseases of dristi manifests as diminution of vision and visual field defects. Visions being a sense, the visual symptoms are purely subjective. Clinical anatomy of eye is described on the basis of panchabhautika composition like, the muscular parts, blood related parts, dark part i.e. krishna mandal, white parts i.e. sweta mandala, Ashru marg i.e. Lacrimal apparatus of eye are composed of Prithivi, Agni, Vayu, Jala, and Akash mahabhoota respectively. Dristi is made up of panchamahabhoota, but mainly Teja mahabhoot is predominant in the form of Alochaka Pitta. Alochak pitta is again two types on the basis of its function i.e. chakshu vaisesik and buddhi vaisesik. Chakshuvaisesik part is confined to dristipatala, where image formation occur and

buddhivaisesik confined to higher visual centre where the complete image is analyzed by the buddhi and perceived<sup>4</sup>. Because of panchabhautika composition of dristi, all the three doshas are involved in vision process physiologically and as well pathologically in vision defects. Vitiated dosha manifests a disease only when it is confined to dhatus, the ashrayasthan or seat of the diseases. This is applicable to all the diseases of dristipatala also<sup>5</sup>. Dhatu have two forms i.e. sthayi or poshya/sthoola roopa and asthaya or poshak/sukshma roopa. Sthoola roopa is visible dhatu and sukshma roopa is invisible<sup>6</sup>. This sukshma roopa dhatu provides nutrition to the whole dristi patals of internal eye ball and takes part in vision process. In case of dristi rogas the vitiated doshas are confined to the dhatu. So the dristi patalas can be explained from the pathological features of sukshma dhatus, which forms the major part of the dristi patalas. So dhatus can be considered as netrapatalas. Thus all the four dristi patalas are described on the basis of their basement composition of dhatu. Because of universal presence of dosha and saptadhatu inside the body, dristi patalas are no exception to this and dristi patalas are nothing but dhatus, where the vitiated dosha gets lodged and manifests as different diseases.

**FIRST PATALA:** It consists of Teja and Jala, means rasa and rakta. These are the primary dhatus and provide nutrition to the eyes. Rasa gives nutrition to transparent structures and rakta gives nutrition to the vascular structures. These two dhatus are termed as first patala of dristi. The first patala being the initial dhatu, diseases confined to this patala are mild, avyakta and can be easily treated.

**SECOND PATALA:** Next dhatu is mamsa dhatu and second patala is confined to this mamsa dhatu. When vitiated doshas are confined to mamsa dhatu and manifest as certain characteristic

signs and symptoms, which is more severe in nature and stable than that of first patala, as mamsa dhatu is more stable than rasa and rakta dhatu.

**THIRD PATALA:** Next dhatu is meda dhatu and the third patala is confined to meda dhatu. Meda is derived from mamsa dhatu, so if left untreated the disease spread to meda dhatu. In this stage the signs and symptoms are more stable, irreversible and they become permanent. So the diseases of third patala are not easily curable and they remain as yasya.

**FOURTH PATALA:** This patala is confined to asthi dhatu. Since this dhatu is derived from meda dhatu, the diseases of meda gradually spread to asthi dhatu. In this stage the symptoms are stable, prominent and vision is permanently lost. So the medical treatment is impossible at this stage.

When vitiated dosha gets spread to majja and sukra dhatu, in already blind eye, the symptoms are same as fourth patala. As dosha remains in sukra dhatu of already blind eye, it may transfer to offspring. It can be considered as beejavyabadusti. This manifests as a congenital eye disease<sup>7</sup>.

In the context of Dristi, out of six netra patalas only four patalas of dristi contribute for vision in normal state and vision defects in abnormal state. Other two patalas confined to both the eye lids performs protective and accessory functions. Thus each dosha is

capable of producing four different types of symptoms on the basis of involved dhatu or patala.

Structurally dristi includes mainly three different structures:

1. Dristi Kacha or Lens
2. Dristi Patala or Retina
3. Dristinadi or Optic Nerve and Dristimarga or Visual Pathways System
- 4.

On the basis of involvement of the above structures, the dosha and dhatu affected, the diseases of dristi are manifest with different sign and symptoms which are described in order of severity by Acharya Sushruta and Vagbhatta completely complement to the sign and symptoms described in Modern medicine regarding vision defects due to disorders of lens, choroid and retina, optic nerve and visual pathways. Hence an effort has been made to explain the different diseases of dristi in modern parlance.

#### DISEASE OF DRISTI KACH

Timir describe as painless loss of vision is the initial clinical manifestation when vitiated doshas are confined to first patala i.e. Rasa and Rakta dhatu and second patala i.e. Mamsa dhatu. Involvement of third patala i.e. Meda dhatu is known as Kacha and involvement of 4<sup>th</sup> patala Asthi dhatu is known as Linganas<sup>8</sup>. The following table explains the diseases of Dristikacha with modern correlation. Table 1<sup>9</sup>.

Patala	Symptoms	Pathogenesis	Modern correlation
1 <sup>st</sup> or Rasa Rakta	Intermittent blurring of vision described as Avyakta rupa darshan, symptoms are not stable.	Dosha sanchaya, prakopa, prasara . Initial stage of hydration and opacity of lens.	Initial stage of cataract and even refractive errors comes under it. Prodromal symptoms of Timir
2 <sup>nd</sup> Mamsa	Blurring of vision > 1 <sup>st</sup> patala. Scotomas- seeing the shape of hair, flies, networks, flames etc. Decreased visual acuity Metamorphosis-near objects are seen in distance and vice versa. Micropsia, Macropsia, Diplopia, Polyopia- in cuneiform cataract Presbyopia Glare	Dosha Sthansamsraya. Cortical spoke opacities with water clefts that form radial wedges containing a fluid of low refractive index than the surrounding lens.	Cortical cataract i.e. spoke or cuneiform Stage of established Timir
3 <sup>rd</sup> Meda	More decrease in vision, objects are seen covered by cloth. Inferior visual field is lost but superior field persists. Colour halos- change in colour values. ↓ Visual acuity-gradual painless. Progressive Myopic shift /Second sight Visual field loss.	Dosha in Vyatka form or manifestation stage Change in refractive index of the nucleus causes index myopia, improving near vision. Generalized reduction in sensitivity due to loss of transparency.	Nuclear cataract Kacha.
4 <sup>th</sup> Asthi	Complete loss of vision. Perception of light is only positive.	Dosha in Bheda stage Complete opacity developed	Mature cataract. Linganas.

**DIFFERENTIAL DIAGNOSIS-** Following Table 2<sup>10</sup> explains the differential diagnosis of doshaja timir with modern correlation.

Dosha	Timir	Kacha	Linganas
Vata	Metamorphosis. Moving scotomas. Objects seen are smoky or grayish. Sometimes redness but not constant.	Metamorphosis more prominent. Objects seem to be reddish in colour. Central scotoma. Polyopia and diplopia.	Vision becomes dusty and smoky. Objects seem to be red in colour. Macropsia and Micropsia
Pitta	Rainbow halos, flashes of light. Glittering of the object. Unable to face light because of Glare. Objects seen are bluish	Objects seem to be bluish. Eye turns bluish in colour. Objects seem to be shining, glittering. Flashes of light, lightening seen	Eye becomes bluish black in colour. Total blindness in latter stage.
Kapha	Objects seem to appear oily and dense white in colour. Sometimes shiny white like pearl.	Dristimandala or pupil becomes dense white. Objects seem to be white in colour.	Vitiated kapha turns to 'mala' and all functional properties are lost. Dristimandala is completely opaque and vision is totally lost.

**DISEASE OF DRISTIPATAL OR RETINA:** Dristi patala is considered as major part of dristi. Dristipatala is the photosensitive layer inside the eye where light rays are converged. It is having predominance of all the five bhootas but due to intimate contact with light and high vascularity, Agni and Vayu are the predominant bhootas and pitta and vata are predominant doshas. Pitta involved in dristi is alochaka pitta and vata involved is Pranavayu. Dristipatala is the seat of alochaka pitta and it receives indriyartham in the presence of mind. Prana

vayu controls this action. Thus dristipatala becomes the meeting point of prana vayu, alochak pitta and mana or mind. As a result of this union indriyarthasannikarsham is performed i.e. external object is transformed into a biological element. Role of tarpak kapha cannot be ignored, as in the absence of light rays the vision is limited but due to presence of tarpak kapha dark adaptation and scotopic vision is possible<sup>1</sup>. The following Table.3<sup>11</sup> explains the diseases of Dristipatala i.e. retina.

Dosha	Diseases of dristipatala	Symptoms	Modern correlation
Pitta	Pittavidagdha dristi- Vitiated pitta dosha confined to 3 <sup>rd</sup> patala or meda dhatu	Day blindness, yellowish discoloration of the object. Difficulty to face bright light. Night vision not affected.	Congenital deficiency of cones. Central vitreous opacity. Central nuclear or polar cataract. Central corneal opacity.
	Hraswajadya dristi	Objects seen are smaller than actual size i.e. micropsia Metamorphosis	Age related macular degeneration, Macular edema Central serous chroidopathy Diabetic macular edema. Macular hole. CNVM
	Dhumadarshi -Vitiated dosha confined to 1 <sup>st</sup> patala or Rasa and rakta dhatu so pittaja sadhya in case shoka, jwara sirohitapa santapta	Objects appear smoky and blurred vision. Visual hallucinations	Diseases involving cerebral cortex, migraine Electrolyte disturbances in high fever, liver and kidney diseases- ocular ischemia.
Kapha	Kaphavidagdha dristi- Vitiated kapha dosha confined to 3 <sup>rd</sup> patala	Night blindness or Scotopic vision affected Objects are seen white.	Vit-A deficiency Retinitis pigmentosa Congenital night blindness
Vata	All diseases of loss of vision as vata mainly pranavayu is activating and controlling factor for vision	Painless loss of vision. Visual field defects.	Retinal detachment. Lesions of higher centers like visual cortex etc.
Tridosha	Nakulandhta- here all the visual senses are damaged. Even all the dosha involved but Vata is affected predominately. Asadhya (incurable)	Night blindness-kapha Blurred vision-pitta Metamorphosis –vata pitta Field defect – pitta vatta Colour blindness-pitta vata	Congenital blindness. Myopic chorioretinal degeneration. Hereditary dystrophies of the central retina and choroid.
	Systemic diseases-Diabetic Retinopathy, Hypertensive Rretinopathy	Micropsia , Macropsia , Metamorphosis	Tridoshaja Timir

**DISEASE OF DRISTINADI OR OPTIC NERVE AND DRISTIMARGA OR VISUAL PATHWAY:** The impulse created by Alochaka pitta is conducted from dristipatal to buddhi for conformation and development of perfect sense. Dristimarga

forms the pathway for this conduction. It starts from dristipatal and ends in dristi kendra or Indriya buddhi/Visual cortex Since prana vayu is the element which conducts impulse, dristimarga can be considered as the pathway of pranavayu also.

Diseases	Symptoms
Gambhirika	Due to vata shrinkage of eyeball along with choroid and retina i.e. dristipatala and dristi nadi with pain. Tridoshaja but mainly vata involved. Phthisis bulbi due to severe uveitis, Endophthalmitis etc.
Optic neuritis	Sudden progressive profound visual loss. Delayed Dark adaptation. Visual obscurations in bright light. Impairment of colour vision. Movement phosphenes perceived by patient Patient may complain mild dull eye ache. Visual field changes- central or centrocaecal scotomas.. Demyelinating disorders-multiple sclerosis. i.e. 3 <sup>rd</sup> Patalagata timir
Optic neuropathy Like NAION	Sudden visual loss Transient ischemic attacks, Amaurosis fugax may precede the attack. Altitudinal hemianopia involving mainly inferior half. 3 <sup>rd</sup> patala or meda dhatu on chronic can become fully blind i.e. Liganasa-4 <sup>th</sup> patalagata
Papilledema	Gradually decreased vision. Visual field shows enlargement of blind spot and visual field constricts. On severe atrophic papilledema concentric contraction of peripheral field. 3 <sup>rd</sup> patala (meda dhatu) On chronic can become fully blind i.e Liganasa-4 <sup>th</sup> patalagata
Optic atrophy 3 <sup>rd</sup> and 4 <sup>th</sup> patalagata dristi roga	Primary or secondary glaucoma, vascular and post neuritic optic atrophy. Loss of vision may be sudden or gradual. Severe visual field loss may be peripheral-systemic infection, central-focal optic neuritis, and eccentric when optic nerve or tracts are compressed. Can be correlated with Gambhirika.

## CONCLUSION

In the concept of dristirogas basically two terms deserves special attention, patala and timira. The Patalas are the ashryasthan of the diseases in its course and the patalas are in turn confined to Dhatus. Dosha spreads from first patala to the second and reaches upto the fourth patala, while spreading to the succeeding patala, the disease becomes more severe. Timira is described as a disease, which starts as a mild, if left untreated worsen and finally ends in total blindness. Timira is pain less loss of vision which may be sudden or gradual. Mostly painful loss of vision relates to Adhimantha in acute stage like acute angle closer glaucoma with severe visual field loss occurs, but visual field loss due to established glaucomatous optic atrophy can be correlated with Timir. Timir is included in vata nanatmaja vyadhi by Charak, as the end point of vision is done by pranavayu i.e. Indriyatha sannikarsha. Though the patalas are panchabhutika in nature but predominant in Agni mahabhoot. All the three doshas takes part in vision process as well in vision defect. alochaka pitta is of two types, chakshyuvaisesik which takes part in image formation and buddhivaisesik which analyze the image with help of mind and retained it. Pranavayu carry the visual impulse to the visual centre in the brain. Tarpak kapha is meant for scotopic vision and form sense and alochaka pitta for photopic vision and light sense. Vision defects occur according to the vitiated dosha and affected dhatu or Patala. Thus patalas are explained on the basis of severity of the diseases. Visual field defects are also related to the affected parts of dristi kacha or lens, dristipatala or retina, dristinadi or optic nerve and dristimarga or visual pathway. As mana or mind and buddhi or intellect are also responsible for getting vision, the disturbances of these can leads to vision defects like visual hallucinations in fever, migraine etc. Symptoms described in Dristigata roga are purely complement to the diseases described in Modern ophthalmology. As murdha or shira/head is the seat of pranavayu and eye is the seat of Alochak pitta, treatment of most of the diseases of dristi, vata shaman chikitsa for head and pitta shaman chikitsa for eye can be advocated<sup>12</sup>.

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