

UNDERSTANDING THE CONCEPT OF PATALA & DRISHTI

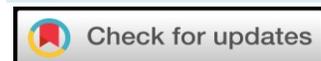
Tarun Kumar Dwivedi¹, Veerayya R Hiremath², Shashikala K³, Gururaj N⁴¹P.G Scholar, ²Professor and HOD, ³Asso. Professor, ⁴Asst. Professor. Dept. Shalaky Tantra SJGAMC, Koppal, Karnataka, IndiaCorresponding Author: dr.tarun52@gmail.com<https://doi.org/10.46607/iamj4408102020>

(Published online: October 2020)

Open Access

© International Ayurvedic Medical Journal, India 2020

Article Received: 27/09/2020 - Peer Reviewed: 02/10/2020 - Accepted for Publication: 04/10/2020



ABSTRACT

Language is the base of communication. Communication is made to understand and learn the mind and imagination. *Ayurveda*, the ancient life science is full of terminologies. To treat any disease, one should have thorough knowledge regarding those terminologies and their multiple meanings used in different contexts. A very little description of *Drishti* and *Patala* are available in the classical literature regarding its measurement, shape, size and *Panchabhoutiktwa*, which is not sufficient to confine *Drishti* and *Patala* to any one part of eye. By analyzing different quotations of classical literature, we have tried to correlate the term *Drishti* and *Patala* to the structures of eyeball. As the meaning suggests the *Patala* is a covering, which covers the *Drishti*. In addition, based on the *Dhatu Ashraya* on four *Patala* of eyeball, the cornea with aqueous, the Lens with uveal tract, the posterior sclera and the retina with optic nerve can be considered as the *Prathama*, *Dwitiya*, *Tritiya* and *Chaturtha Patala* respectively. *Pramana* of *Drishti* suggests it as the fovea. *Drishti* is the central cornea, based on instillation of *Aschya-tono*. *Drishti* is constricted and dilated in sun and in shadow or dim light. This refers to change in diameter and thickness of *Drishti*. Therefore, *Drishti* is pupillary aperture and lens. The *Drishti* can be the refractive media, visual pathway and retina of eyeball as *Avyaktadarshana*, *Vramita Darshana* are the symptom of *Timira Roga*. The *Shadvida Roopa* of *Linganasha* can be compared with the different stages of nuclear cataract. So, the *Drishti* can be the lens. The central cornea, pupillary aperture and the lens can be considered as *Drishti*, as the opacity near the *Drishti* produces loss of vision. The ancient surgical procedure of *Sleishmika Linganasha* (cataract) sug-

gests *Lekhana Karma* over the *Drishti*. This is to be done on *Drishti* until vision is achieved. The symptom of *Drishtigata Roga* is similar to the symptoms like day blindness, night blindness, blurred vision, distorted vision (*Avyaktadarshana*, *Vramita Darshana*) etc. are also the symptoms of retinitis pigmentosa, retinitis and other pathology of retina. Therefore, *Drishti* is retina, fovea and optic nerve. Hence, the *Drishti* cannot be a single structure, rather *Drishti* is the refractive pathway and refractive media of eyeball.

Keywords: *Drishti*, *Patala*, *Aschyatono*, *Avyakta Darshana*, *Vramita Darshana*, *Drishtigata Roga*, *Shadvida Roopa Of Linganasha*, *Sleishmika Linganasha*.

INTRODUCTION

Shalaky Tantra is a specialized branch among *Ashtanga-Ayurveda*, which is dealing with the disease of *Urdhwajatru* or disease above the clavicle^[1]. *Maharishi Sushruta* has described the gross structure of *Netra* in detail. Nineteen chapters of *Sushruta Samhita Uttaratantra* are dealing with *Netra Rachana Shareera*, *Kriya Shareera*, disease of *Netra*, treatment of *Netra Roga* and *Kriya Kalpa* (Topical treatment) of *Netra Roga*. This represents the importance of *Netra* in ancient life science. *Netra* is the *Gyanendriya* responsible for visual perception. The perception process of vision is incomplete in the absence of *Atma*, *Mana*, *Indriya*, and *Indriyārtha*^[2]. *Dristi* is the functional unit of the vision process. In the available literatures, the term *Patala & Drishti* are not specified. Hence it is a matter of debate. *Ayurveda*, the ancient life science is full of terminologies. To learn and to treat any disease one should have thorough knowledge regarding those terminologies and their multiple meanings used in texts.

A very little description of *Patala & Drishti* is available in the classical literature regarding its measurement, shape, size and *Panchabhoutiktwa*, which are not sufficient to confine *Patala & Drishti* to any one part of eyeball. By referring the available literature, we have tried to correlate the term *Patala & Drishti* to tunic/layers of eyeball, refractive media, refractive pathway, retina, fovea and optic nerve of the eyeball.

Description

Drishti is derived from “*Drish* “*Dhatu* and “*Ktin*” *Pratyaya*. It literary means “to see things” or it is the vision process. If the *Dosha* seats on the *Prathama Patala* of *Drishti* (*Yasya Drustau Byabasthita*), there will be *Avyakta Darshana*^[3]. It means in *Prathama*

Patala Gata Timira the *Dosha* has to seat over the *Prathama Patala* “of *Drishti*”. So, *Netra* as a whole is *Drishti*. Drop wise administration of medicines to the open eye, from the height of two *Angula*, is known as the *Aschyatono*^[4]. This is a *Netra-Kriyakalpa* explained in different literature of *Ayurveda*. The *Aschyatono* process is even more specified by *Saran-gadhara Samhita*. According to him, the administration of medicine drops on the *Drung-Madhye*^[5, 6] is *Aschyatono*. The meaning of ‘*Drung-Madhye*’ is over the central cornea or above the pupillary aperture on the cornea or above the lens on the cornea. This suggests *Drishti* is Cornea, Pupillary aperture or the lens. *Vivara* means a hole or an aperture. *Drishti* is surrounded by *Patala*^[3] and it is looking like *Vivarakriti* from outside. In front of *Drishti*, an aperture is likely to appear^[3]. Before the lens, the pupillary aperture is present and before the retina, the pupillary aperture along with the lens is present. Therefore, *Drishti* may be the anterior segment, posterior segment, pupillary aperture, lens and retina. *Drishti-Mandala* is constricted and dilated in Sun and in shadow respectively^[7]. By this quotation, *Drishti* can be taken as the pupillary aperture or lens as it’s diameter and thickness varies with the intensity of light. Therefore, the *Drishti* is pupillary aperture or lens. Shape and size of the *Drishti* is like a *Masooradala*, it means a lentil like^[3]. The lentil is biconvex. It reveals *Drishti* as biconvex lens.

It is described that *Netra* has six *Patala* out of which two *Vartma Patala* and four *Akshi Patala*^[1]. The *Timira Roga* seats in those four *Patala* and *Timira* is the disease of *Drishti Mandala*. Therefore, it can be

told that *Drishti* and *Patala* have some similarities. We have tried to analyze *Patala* as follows.

- **Prathama Patala** is *Teja Jala Ashrita*^[1]. Cornea is avascular, so it gets nutrition from the aqueous and the tear film protects the cornea and lubricates it. Aqueous contains 99.9% water (Jala)^[8]. The stromal layer of cornea bears 90% of total cornea, which is in a state of dehydration, maintaining the transparency of the cornea^[9]. Dehydration cannot be possible without the *Agni-Mahabhoota*. *Agni* means *Teja*. If *Dosha* seats in *Prathama Patala* then there will be *Avyakta Darshana*, which can be refractive error. Any pathology in Cornea also causes refractive error. Hence, the cornea can be the *Prathama Patala* and any abnormality of this structure may lead to refractive error that is *Timira*, the disease of *Drishti*. Therefore, the *Prathama Patala* is **Cornea**.
- **Dwitiya Patala** is *Mamsashrita*¹. Lens is suspended by the suspensory ligaments from the ciliary body. Ciliary body has ciliary muscle^[10]. The iris has pupillae muscle^[10], which is the continuation of ciliary body and choroid. Abnormality in the ciliary muscle and Zonules or Suspensory ligament leads to abnormality of accommodation and causes refractive error^[11]. The pathology of lens also causes refractive error that is *Timira*, the disease of *Drishti*.

Six extraocular muscles (EOM) are attached to each eye. Those EOM are responsible for the eye movement and are inserted into the scleral surface^[12]. Strabismus is a disease caused by the faulty insertion and weakness of EOM^[13]. The strabismus also causes blurring of vision^[13] and strabismic amblyopia^[14]. Staphyloma can cause variation in axial length of eyeball; results in the refractive error^[15]. Those can be correlated to the *Avyakta Darshana* and *Vramita Darshana*, which are the symptoms of *Timira*. Hence, the **uveal tract along with lens** can be the *Dwitiya Patala*. The **sclera** also can be correlated to *Dwitiya Patala* as it is *Mamsashrita* (EOM) and disease of sclera (Staphyloma) can cause refractive error or *Timira*.

- **Tritiya Patala** is *Medashrita*^[1]. The posterior part of sclera is protected or surrounded by the adipose

tissue and the orbital fats, which are nothing but the *Meda*. Staphyloma, the disease of sclera can cause refractive error and even loss of vision. Therefore, the posterior sclera can be the *Tritiya Patala*.

- **Chaturtha Patala** is *Asthi-Ashrita*^[1]. Optic nerve is the continuation of retina and optic nerve lodges inside the bony orbit. If *Dosha* involved in *Chaturtha Patala* then there will be partial or complete loss of vision^[16]. Lesion on the retina or optic nerve may lead to partial or complete loss of vision.

So, the *Chaturtha Patala* and *Drishti* are retina and optic nerve.

This can be summarized as-

- **Prathama Patala** – Cornea, aqueous humour.
- **Dwitiya Patala** - Lens with uveal tract.
- **Tritiya Patala** – The posterior sclera.
- **Chaturtha Patala** –The retina with optic nerve.

The *Patala* as a whole can be considered as the layers of Cornea. In the disease *Savrana Sukla* of *Krishnagata roga*, it has been told that “If the injury occurs to the *Dwitiya* and *Tritiya Patala*, it will be *Yapya* and *asadhya* respectively”^[23] as *Krishna mandala* is the Cornea while considering the disease explained in the classical texts of Ayurved. In the complication of *Savrana Sukla*, the *Mudga –Akruti Pidaka* (Descemetocoele) has been mentioned, when there is involvement of two *Patala*^[24]. In addition, in the commentary of Dalhanacharya of *Avrana Sukla*, it has been told that “If the *Avrana Sukla* involves the *Dwitiya Patala*, the disease will be *Krichhra Sadhya*”^[24]. Thus, the *Patala* clearly refers to the corneal layers. As *Timira Roga* seats on the *Patala* and *Timira* is the disease of *Drishti*, so the uveal tract, the refractive-media and visual pathway can be correlated with *Drishti*. *Netra* consists of *Five-Mandala*. *Pakshma*, *Vartma*, *Shweta*, *Krishna* and *Drishti Mandala* respectively^[1]. *Drishti* is the inner most, just behind and adjacent to *Krishna Mandala*. According to modern ophthalmology, sclera is the outermost and retinal layer is the inner most layer of eyeball. Therefore, *Drishti* can be retina. If we consider the location of *Drishti* adjacent to *Krishna Mandala* then the pupillary aperture and lens can fit into this

concept. One-third (1/3rd) of *Netra Mandala* is *Krishna-Mandala* (~11.5mm as horizontal diameter ~ 10.6 mm as vertical diameter), 1/7th of *Krishna-Mandala* is *Drishti Mandala*^[1] (~1.51mm) which measures the center of most sensitive part of retina called as the Fovea. Congenital loss of cones causes day-blindness^[17], which can be correlated with the symptom of *Pittavidagdha Drishti*^[7]. Therefore, the *Drishti* can be correlated with retina as *Pittavidagdha Drishti*, a disease of *Drishti*.

- The pigmentary retinal atrophy causes retinitis pigmentosa with the symptom of night blindness^[18] and night blindness is also a symptom of *Kaphavidagdha Drishti*⁷. Therefore, the *Drishti* can be the retina as the *Kaphavidagdha Drishti*, a disease of *Drishti*.
- *Harswajadya* is a disease of *Drishti* having symptoms as day-blindness and perceiving object as smaller than the actual size (Micropsia)⁷. Micropsia can be caused by separation of visual cells^[19]. The day blindness and visual cells separation are the diseases of retina. Therefore, Harswajadya can be correlated as the disease of retina.
- *Nakulandhya* (Disease of *Drishti*) is the Night blindness^[7, 20] which is also a symptom of Retinitis pigmentosa (disease of retina)^[18]. Therefore, the *Drishti* is retina.
- In the contraindication for *Shashtrakarma* in *Sleishmika Linganasha*, it has been told that *Drishti* must be examined before performing the *Shashtra Karma*^[21]. In modern, the preoperative examination of cataract surgery includes the examination of refractive media (cornea, aqueous, iris, lens and vitreous), retina, macula and optic disc. In this preoperative examination, it is mandatory to examine the transparency of the media, type, stages and color of cataract lens, examination of fundus, its color, swelling and other pathologies of fundus, disc-cup ratio and its color etc. So here the *Drishti* can be lens, retina
- *Shadvida Linganasha Lakshana* suggests the color of *Drishti* because of vitiated *Dosha*. Those are *Aruna*/brownish, *Nila*/bluish, *Seeta*/whitish/*ShankhaVarna*/moon-white, *RaktaVarna*/ red-

dish/*Pravala Varna*, *Vichitra Rupa*/different color due to vitiation of *Vata*, *Pitta*, *Kapha*, *Rakta* and *Tridosha* respectively^[7]. This can be compared with the color of lens-nucleus in different stages of nuclear cataract. Therefore, the *Drishti* can be correlated with lens.

- Examination of *Drishti* is indicated prior to the *Shashtrakarma* of *Sleishmika Linganasha*. The half-moon like spot, water droplet like spot, Pearly white spot, stable, irregular, thin, different lines and red or brown spots on *Drishti* with painful condition must be excluded for *Shashtrakarma* of *Sleishmika Linganasha*^[21]. Those colors of the *Sleishmika Linganasha* are similar to the color of lens in immature, mature and hypermature cataract. This clearly reveals that the *Drishti* is nothing but the lens.
- *Sleishmika Linganasha* is *Shashtra Sadhya*. In this process, a *Shalaka* is inserted to the eyeball by puncturing it at the temporal aspect of sclera and *Lekhana Karma* (scarping) is done over *Drishti Mandala*^[22]. This refers *Drishti* as the Lens.

Summary

Drishti is cornea according to the administration of *Aschyatono* and symptom of *Prathama Patalagata Timira*. *Drishti* is the pupillary aperture according to the variation in diameter in responds to intensity of light and *Dwitiya-Patalagata Timira*. *Drishti* is the lens according to the *Shadvida Roopa* and *Shashtrakarma* of *Sleishmika linganasha*, variation in thickness with the intensity of light, *Ashrita* of *Mamsa Dhātu* and shape like the biconvex lentil. *Drishti* is retina and optic nerve according to disease of *Drishti* and fovea according to the disease of *Drishti*, the size of *Drishti* as compared to the size of *Krishna Mandala* and firefly like appearance. While correlating the *Patala* with the structures of eyeball the cornea and aqueous can be compared with *Prathama Patala*, the lens along with the uveal tract can be considered as *Dwitiya Patala*, the posterior sclera will be the *Tritiya Patala* and the retina with optic nerve can be compared with the *Chaturtha Patala*. While considering the disease of *Krishna mandala*, the layers of cornea can be referred as the *Patala*.

CONCLUSION

To treat any disease, one should have thorough knowledge of terminologies and their multiple meanings used in texts. Word ‘*Drishti* and *Patala*’ has several meanings, according to the place where it is being used. So, we need to understand *Drishti* and *Patala* accordingly. As explained above *the prathama, Dwitiya, Tritiya and Chaturtha Patala* are cornea with aqueous, lens with Uveal tract, the posterior sclera and the retina with Optic nerve respectively or while considering the Krishna mandala, the layers of cornea can be referred as the *Patala*. The *Drishti* is the biconvex lens and as the disease *Timira* seats on *Akshi Patala*, the refractive pathway is *Drishti*. According to *Ayurvedic* anatomy it should be referred as the central cornea, pupillary aperture or the Lens. According to *Chikitsa of Drishtigata Roga*, *Drishti* should be correlated as lens, retina, macula and optic nerve as a whole. In modern ophthalmology, the innermost layer of eye is retina and according to *Ayurved*, the innermost *Mandala (layer)* is *Drishti Mandala*. By correlating the innermost layer, the *Drishti* is retina. Basing on the disease occurring on the *Drishti Mandala* the *Drishti* can be the retinal layer. Based on structural and functional descriptions available in *Ayurveda* and correlating that with modern ophthalmology, lens and retina together can be considered as *Drishti*.

Proper vision is impossible in the pathological state of refractive media. As per the meaning, “*Drishti*” is to see things. So, to see things we should have a better and well-functioning structure. From the above references, the concept of *Patala* and *Drishti* has been explained in detail to serve the mankind with the ancient treatment modalities. As a whole, we can conclude that *Patala* is the Cornea, Aqueous, Lens, Uveal Tract, Posterior Sclera, Retina and Optic Nerve. The *Drishti* is not a single structure instead; *Drishti* is *Cornea*, *Pupillary Aperture*, *Lens*, *Retina*, *Fovea* and *Optic Nerve*.

REFERENCES

1. Sashtri Ambika Dutta, Sushruta Samhita with *Ayurveda-tattva-sandipika* Hindi commentary published by Chaukhamba Sanskrit Sansthan; Varanasi; Reprint 2010, Uttara Tantra 1/10-18, P.6.
2. Tripathy Brahmananda, Charaka-Samhita with Charaka-Chandrika Hindi commentary published by Chaukhamba Surbharati Prakashan; Varanasi; Reprint 2008, Sutra Sthan 11/20, P.231.
3. Sashtri Ambika Dutta, Sushruta Samhita with *Ayurveda-tattva-sandipika* Hindi commentary published by Chaukhamba Sanskrit Sansthan; Varanasi; Reprint 2010, Uttara Tantra 7/3-6, P.40.
4. Tripathy Brahmananda, Astanga Hridayam with Nirmala Hindi commentary, Chaukhamba Sanskrit Pratishthan; Delhi; Reprint 2017, Sutrasthana 23/2-4, P.263.
5. Sashtri Parsurama, Sarangadhara Samhita with Adhamalla’s Dipika and Kasirama’s Gudhartha-Dipika commentary, Nirnaya Sagar Press second edition, Uttara Khanda 13/13.
6. Sashtri Laxmipatti, Yogaratnakara with Vidyotini Hindi commentary, Chaukhamba Sanskrit Sansthan, Varanasi seventh Edition 2002, Uttarardha netra Roga chikitsa Aschyatono Vidhi P. 385.
7. Sashtri Ambika Dutta, Sushruta Samhita with *Ayurveda-tattva-sandipika* Hindi commentary published by Chaukhamba Sanskrit Sansthan; Varanasi; Reprint 2010, Uttara Tantra 7/27-40 P. 44.
8. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi P. 207.
9. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi P. 90.
10. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi P. 135.
11. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi P 41
12. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi P. 314.
13. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi P. 321-322.
14. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi P. 319.
15. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi P. 29, 32.
16. Sashtri Ambika Dutta, Sushruta Samhita with *Ayurveda-Tattva-Sandipika* Hindi commentary published by Chaukhamba Sanskrit Sansthan; Varanasi; Reprint 2010, Uttara Tantra 7/16-18, P.42.

17. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi P.303
18. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi P.268.
19. Khurana A k, Comprehensive Ophthalmology, Fourth edition, 2007, Jaypee. New Delhi, P. 150.
20. Tripathy Brahmananda, Astanga Hridayam with Nirmala Hindi commentary, Chaukhamba Sanskrit Pratishthan; Delhi; Reprint 2017, Uttaratantra.12/23, P.963.
21. Sashtri AmbikaDutta, Sushruta Samhita with *Ayurveda-Tattva-Sandipika* Hindi commentary published by Chaukhambha Sanskrit Sansthan; Varanasi; Reprint 2010, Uttara Tantra 17/55-56, P.82.
22. Sashtri AmbikaDutta, Sushruta Samhita with *Ayurveda-Tattva-Sandipika* Hindi commentary published by Chaukhambha Sanskrit Sansthan; Varanasi; Reprint 2010, Uttara Tantra 17/63, P.83.
23. Tripathy Brahmananda, Astanga Hridayam with Nirmala Hindi commentary, Chaukhamba Sanskrit Pratishthan; Delhi; Reprint 2017, Uttaratantra.10/22-25, P. 950.
24. Thakral K.K, Sushruta Samhita with Dalhana Ni-bandha Sangraha and Gayadas Nyaya Chandrika, Hindi Commentary, Published by Chaukhambha Orientalia, Varanasi, Reprint 2017, Uttara Sthana 5/7-8, (Dalhana Commentary) P. 22-23.

Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Tarun Kumar Dwivedi et al: Understanding The Concept Of Patala & Drishti. International Ayurvedic Medical Journal {online} 2020 {cited October, 2020} Available from: http://www.iamj.in/posts/images/upload/4841_4846.pdf