



NETRA PATALA VIVECHANA – A SCIENTIFIC INSIGHT

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ABSTRACT**Purpose:** To explore the scientific understanding of netra patalas**Methods:** Concept of netra patalas is conceptualized for its specific understanding in different contexts**Results:** Critical analysis of netra patalas helps to determine the sthana, sadya asadyata and chikitsa of netra vikara.**Conclusions:** Patala is referred to a thin layer/membrane like structure covering “drusti bhaga”;

- When it is looked upon from anatomical point of view it could be the 6 layers of eye from bahya-kalakasthi;
- With context to cornea it could be deeper layers of cornea which when affected beyond 2 layers presents with poor prognosis.
- With respect to sthana of dosha it could be grouped under patala, kacha and linganasha
- Drusti patala- it could be understood as whatever is seen through pupil- it could refer to lens disorders and also retinal disorders.
- Hence netra patala is just not confined to anatomical constraints, it can be understood as corneal layers, lens, visual pigments and retinal layers in different context this approach helps us to diagnose newly evolved disorders of the eye and also determine its prognosis and treatment for its better management where conventional medicine fails to show potential improvement in sight losing disorders.

KEYWORDS : Netra patala, layers of eye, corneal layers, lens, visual pigments, retinal layers**INTRODUCTION :****Concept of understanding patala:**

Ayurveda is the science of healthy living is the most important rational and scientific among the ancient system of medicine which has struck deep and permanent roots in the minds of the people of the country about its capacity to provide effective cure for all types of diseases. *Shalaky tantra* is one of the eight branches of *Ayurvedic* treatment tree. This branch is dedicated to the treatment of disease located above the neck i.e. eyes, ear, nose throat & head. In our ancient literature *Chakshu* is considered as prime sense out of all senses. One should always do efforts to keep eyes healthy because it is stated by *Acharya Vagbhata* that whole universe is of no importance for a blind person in spite of having plenty of wealth resources. As eyes are the gateways of external world, visual defects tantamount to the obliteration of the world. It is no wonder that a text as old as *Atharva Veda* exclaims “May Surya, the sovereign lord of eyes protect me”. (AV. 5. 24 – 9) The diseases of eyes are classified vividly in *Sushruta Samhita*.

Among which as per pathological site one group of eye diseases known as *Patalagata Rogas* i.e. diseases of visual apparatus responsible for visual impairment. The word “PATALA”- “*Avrutta Patalena Akshano*” – literally patala is understood as a thin layer/membrane like structure covering the drusti bhaga which is arranged in concentric layers.

“DRISHTI” itself means „The act of vision”. Functionally it may be considered as all refractive Medias of eye, retina and the whole visual pathway. So, the diseases in which pathology found in the visual pathway beyond cornea come under “*Patalagata Roga*”.

Among these diseases **TIMIRA (wordily meaning- darkness)** involving the *patalas* – layers of the eye is considered to be the most important & serious as far as its prognosis & treatment is concerned. The ultimate fate of this disease is *Lingnasha* - blindness.

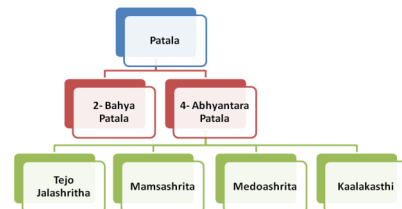
The anatomical consideration of *Patalas* & symptoms of vitiated *Doshas* situated in these *Patalas* reveal that the *Timira* is nothing but diseases of anterior & posterior segment of eye in which vision is hampered. If it is not treated in time it leads to *Kacha* & then *Lingnasha* i.e. total blindness .which simulates refractive errors, presbyopia, very early lenticular hydration⁵, vitreous pathologies & diseases of retina. As *netra* is a *panchbhautika* entity and regulated by *tridosha*, *saptidhatu* and *mala* so treatment of ocular disorders is no way different from systemic disorders except the local treatment procedures termed as *Kriyakalpa*.

BACKGROUND :**Methods** – Critical Review Of Literature Regarding Netra Patalas:

According to Sushruta⁴, there are 6 Patalas⁸ in the eyeball. Vartma Patalas - 2 Akshi Patalas - 4 Timir is a drishtigata roga which occurs in the inner four patalas of the eye⁸. The pathogenesis of Drishtigata

Rogas has been described in terms of involvement of successive Patalas. The prognosis of the disease also depends upon the involvement of respective Patala. Sushruta considers different Akshi Patalas and their constituting factors as shown below.

According to some scholars⁸, the Prathama Patala can be taken as cornea and aqueous humour; as they are the seat of Tejas and Jala. The 2nd Patala, which is Mamsashrita, can be taken as iris and ciliary body. Both iris and ciliary body are mesodermal in origin and contain muscle tissue. The 3rd Patala or Medoashrita Patala can be taken as Vitreous humour, as vitreous is a jelly like structure which resembles fat. The 4th Patala or Asthyashrita Patala can be taken as lens, as it is the seat for Lingnasha. Their opinion can be summarized as follows:

**Results : Critical Analysis or Patala vivechana:**

While explaining the concept of patala in (su.uttara.1st chap)¹ – he clearly mentions that tejojalashrita patala is the bahya patala and hence counts patalas from outer to inner layers of drusti.

But while explaining the concept of timira dalhana explains kaalakasthi ashrita patala as pratama patala

With respect to vyadhi –

1. Aaganthuja vyadhi- anatomical view² – outer to inward vitiation of doshas taking specific sthana in respective patalas – Aaganthuja netra vikaras can be understood at the level of corneal injuries where dosha vitiation first takes place at tejojalashrita patala (cornea), if this is not treated it future progresses to mamsashrita (uveal tract), medoashrita(vitreous), and finally affecting the kaalakasthi(neuro-retinal layer) which threatens the sight.

Justification : Theory Of Cornea-

In this context “Patala” can be understood as layers of cornea

Gross three layers of cornea-

Here saadya and asaadya nature of disease can be considered based on regenerating and non regenerating properties of layers of cornea.

So in this context patalas are understood from anatomical point of view Tejojalashritha patala is considered as the first patala and kaalakasthi is the chaturtha patala.

1. Nija vyadhi- pathological view- inner to outward vitiation of doshas- Theory Of Lens

Nija vyadhi³ occurs from the vitiation of dosha hence dooshana of layers occurs from inner to outer layer, hence dalhana has considered kaalakasthi as the pratama patala in causing timira.

a.Kaalakasthi – karma of asthi- dharana – the structure which helps in holding the eyeball

- It can be considered as orbit of eyeball
- It can also be considered as sclera which forms the anterior tunic of the eye ball its posterior surface lies in contact with choroid
- Current theories of refractive development acknowledge the pivotal role of sclera in control of eye size and development of refractive errors
- Change in the axial length leads to refractive error which is understood as timira with lakshanas of avyakta darshana therefore leading to Pratamapatala Timira

b. Medoashritha :

- It can be considered as vitreous
- Medo dhatu karma – sneha
- That which helps in maintaining the structure of eye ball and also keeps the retinal tissue metabolically active
- Dwitiya patala gata timira lakshanas- makshika, mashaka, keshha, jaalakani etc, is seen when there is fluid collection or degeneration of vitreous.

c.Mamashritha :

- It can be considered as ciliary body and zonules
- Mamsa dhatu karma- lepana
- Any disturbance in the ciliary body or zonules leads to disturbances in accommodation and may also cause dilopia
- Tritiya patala gata timira lakshanas like adhaha sthite sameepastam, doorasthe cha uparisthitham, bahudha dwida cha pashyathi

d.Tejo jalashritha:

- Rakta dhatu karma is jeevana; rasa dhatu- preenana
- It can be considered as aqueous humour which has vital role in nourishing lens and cornea and disturbance in this leads to lenticular and corneal opacities
- Chaturtha patala lakshanas- sitabhasa- linganaasha

Name	Constituting factor
1 st Patala	Tejas + Jala (Tejojala Raktashrita – Dalhana)
2 nd Patala	Mamsa (Pishita or Mamsashrita)
3 rd Patala	Medas (Medoashrita)
4 th Patala	Asthi (Asthyashrita)

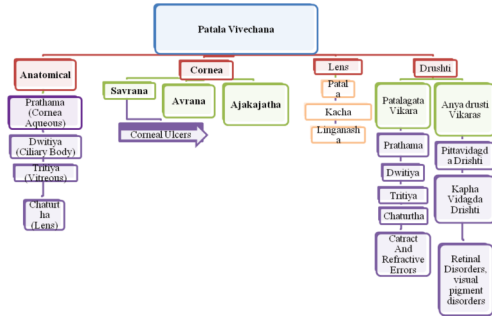
Name	Anatomical Structure
1 st Patala	Cornea and Aqueous humour
2 nd Patala	Iris, Ciliary body and choroid
3 rd Patala	Vitreous humour
4 th Patala	Retina / Lens

DISCUSSION :

- Patalas explained in our classics must be explored and understood beyond anatomical constraints.
- While diagnosing a patala or a drusti vikara understanding the concept of nija aaganthuja group of classification and also analyzing the dosha and dooshya will help in arriving at a proper diagnosis and treatment.
- Here drusti gata vikaras should be considered both as lens related disorders and retinal disorders which also includes visual pigment disorders.
- This further classification will help in determining the depth of the vikara and also will help in deciding upon a treatment modalities.
- As prognosis of retinal disorders are poor, such scientific understanding will further help in formulating ayurvedic line for management as an answer for sight threatening disorders.

CONCLUSION :

The word patala⁶ has got several meanings in context of Netra rogas. It has to be understood what it implies in relation to where the word patala is being used. As explained above, in context of anatomy it should be referred as pupil, in context of kanch, timir, linganaash (patalagata rogas) it should be considered as intraocular lens whereas in pitta vidagdha drishti⁷, shleshma vidagdha drishti etc. drishtipatalagata rogas it must be taken as optic nerve or retina as a whole. To treat any disease one should have thorough knowledge of terminologies used in ancient texts and their multiple meanings. From the above references the concept of patala has been explained in detail to analyse different netra vikaras and treat them accordingly. Hence netra patala is just not confined to anatomical constraints, it can be understood as corneal layers, lens, visual pigments and retinal layers in different context this approach helps us to diagnose newly evolved disorders of the eye and also determine its prognosis and treatment for its better management where conventional medicine fails to show potential improvement in sight losing disorders.



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