AYURVEDIC REVIEW OF NETRA PATALAS

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ABSTRACT

Acharya Sushruta described the Netra Sharirra accordind to Nidana and Chikitsa into three distinct parts called Mandala, Sandhi and Patala. Infact regarding the Netrasharirra adopted by ancient Acharya’s is still a matter of debate. The objective of this literary research paper is to establish clinical significant of Netra Patals according to their anatomical position in eye, pathology and its management. This paper may help in determining the Netra Patal in relation to their modern counterparts and help chose the treatments modalities for various Patalagata disease accordingly.

KEYWORDS: Acharya Sushruta, Netra Sharirra, Chikitsa, Patalagata.

INTRODUCTION

Embryology of Netra
Embryogenesis of all sense organs occurs in the 3rd month of Intrauterine life and completes at about 7th month. Two concepts regarding embryogenesis of Netra is prevalent in Ayurveda i.e. Panchbhautika and Doshik concept.

4. Parts of Eye[2]
a) Mandala - Circular areas of eyeball - 5
b) Sandhies - Junctional areas of the eye ball - 6
c) Patalas - Coats/Tunic/Layers of the eye ball - 6

5. Patalas: Various authors have described and interpreted the concept of patalas in their own way and yet no consensus has been reached upon among them on this subject.

Patala
√Pat + Klach pratay means layer, veil, covering, membrane, a film over the eye.[3]

Number name and constituting factors
Six patalas in total are present in the eye.[4]

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Patala</th>
<th>Constituting Dhatu</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bahya patala</td>
<td>Teja and jala (Rakta – Dalhana, Rasa – rakta, madhukoshkar)</td>
</tr>
<tr>
<td>2.</td>
<td>Second patala</td>
<td>Mamsa (Pishttasritam)</td>
</tr>
<tr>
<td>3.</td>
<td>Third patala</td>
<td>Meda</td>
</tr>
<tr>
<td>4.</td>
<td>Fourth patala</td>
<td>Ashti</td>
</tr>
</tbody>
</table>

Thickness of each patala
The thickness of each patala is 1/5th of the drishti mandala

Relative position of each patala
First patala among 4 patalas in Netra is called as Vahya or outer, this means that the other 3 are relatively inner to the former. Acharya Sushruta, while describing the features of Timira says that now.

“I describe the clinical features of successive patalas vitiating Timira”.
In other words disease Timira vitiates the first patala to which follows the second, third and fourth patala. The commentary given by Dalhana doesn’t correspond to Acharya Sushruta’s view and he has reversed the relative position of each patala.

First Patala (Vahya patala)

Constitution
Teja jala - Sushruta
Rakta - Dalhana[7]
Rasa Rakta - Madhukoshaker
Acharya Madhava describe the constitution of vahaya patala as per the dhatus like others. Acharya Susruta has given the panch -bhoutika constitution, where as Acharya Vagbhatta comments that black part of the eye is formed by Raktavaha srotasata and is a Matrija bhava and white part (Shweta mandala) is formed by kapha vaha srotasa and is Pitrajabha.\(^8\) The above description can be represented as follow

This corneal part of Vahaya patala covers the pupil (drishti mandala). The clinical features of first patala pathology is blurred/ indistinct vision which becomes clear sometimes without any reason it can be correlated to low grade refractive error which may be corrected by accommodation. Pathologies of outer fibrous coat also lead to indistinct vision e.g. in axial and curvatural refractive errors.

Second patala:- Second patala is inner to the Vahaya patala, it is constituted by Mansa\(^9\) (muscles) having Kandras (tendon like properties) giving attachment. It helps in prasarana of Drishti and also helps in maintaining position of lens by its bandhankara properties of mamsadhata\(^10\). It also helps in poshan (nourishment) of structure inner to first patala. Uveal tract i.e. iris, ciliary body and chorooids have such properties.

Clinical features of 2\(^\text{nd}\) patala pathology can be grouped as follows:
- More dimness of vision.
- Floaters and Scotomas or blind spot are as in visual field giving rise to field defect in vision.
- Accommodation anomalies and increasing hypermetropia.
- Metamorphosia, Micropsia.
- Diplopia etc.\(^{11}\)

The iris and ciliary body are inherently autogenic tissues and therefore hypersensitivity reaction due to dormant and silent systemic conditions are the commonest cause of the inflammation i.e. in iridocyclitis each episode of inflammation results into fall in vision.

Vitreous opacities results from inflammatory processes in the posterior uveal tract or retina which result into floaters in front of the eyes. Retina overlying the healed patch (of inflamed choroid) suffers because of disappearance of choiriocapillaries; resulting in relative or absolute scotoma depending on the severity of pathological changes in the choroids. Peripheral lesion of choroid inflammation may be symptomless but when near the muscular area vision may be grossly affected because of the fact that the visual cell layer of the retina depends on the choiri- capillaries for its nutrition. Accommodation is the capacity to focus objects at different distances. This phenomenon in human being is brought about by physiological component of ciliary body and physical component of lens.

So anomalies of accommodation like insufficiency of accommodation, accommodation inertia, presbyopia etc. develops. Patient see distant object near and nearer objects far, and in the condition of presbyopia patient is unable to thread needle or find difficulty in locating and viewing nearer objects.

Thus from the above discussion, we can conclude that all morphological, physiological and pathological characters of 2\(^{nd}\) patala are similar to those related to Uveal tract and retina.

Third Patala
3\(^{rd}\) patala lies inner to second patala i.e. Uveal tract. It is constituted by meda dhatu\(^{12}\).

Clinical features of 3\(^{rd}\) patala Timira
- Pupillary leucocoria (Kacha Awastha)
- Gradually diminished of vision.
- Detailing of objects are not visible.
- Refractive errors according to location of doshas.
- Diplopia, triplopia and polyopia.

The part of the eye inner to the uveal tract, which is very much related to drishti (pupil and vision), is particularly lens. The cortical part of the lens is having meda like viscous, lipoproteinaceous and whitish in colour.

Clinical features of 3\(^{rd}\) patalagata Timira are very much similar to opacity of the cortical part of the lens i.e. cuneiform cataract. The visual symptoms due to cataract depend on the site of the lens opacity and degree of opacification of lens. Some patients complain of polyopia. This is due to the clear segment in cataractous lens acting like separate pupil i.e. in cuneiform cataract. The vision however is gradually reduced markedly in all types of cataract when the lens opacity has invaded larger part of the lens. Change of the colour of the pupil from black in young age to grey is a physiological change after the age of 45-50 years and this is due to increased density of nucleus with age, which causes light being reflected back giving the pupil grey coloration\(^{13}\) (leucocoria).

Conclusively we can say that the symptoms arising due to pathology of 3\(^{rd}\) Patala are similar to cortex of the lens.\(^{14}\)

Fourth Patala
Innermost patala is 4\(^{th}\) patala. It is constituted by Asthi – hard tissue.\(^{15}\)
Clinical features of fourth *patala* *Timira*

a) Loss of vision – lingnasha stage.

b) Drishti mandala (pupil) is covered by vitiated doshas.

c) Perception of bright illuminations unless there is some gross pathology in the Netra.[16]

Inner to 3rd *patala* (cortical part of the lens) is the hard and supportive structure in lens nucleus, which gives support to the newly formed lens fibers. The nucleus part is soft in early age, but becomes harder later on. Embryonic nucleus acts as a nidus around which infantile, adult nucleus zones and cortex are arranged in layers. The clinical features of 4th *patala Timira* i.e. complete loss of vision – *lingnasha* occurs in complete opacity of the lens i.e. matured cataract. With the advancement of cataract (mature) nearly complete loss of vision is there. Change in pupillary colour to dense grey or white and fundal glow is visible with ophthalmoscope. It is important to remember that however advanced cataract some light does pass through lens and iris and reach the retina, therefore perception and projection of light is always maintained so long as it is cataract alone and there is no other pathology affecting the retina.[17]

Here it can be concluded that

1st *patala* - Cornea and Sclera
2nd *patala* - Uveal tract and Retina
3rd *patala* - Cortex of lens
4th *patala* - Nuclear part of the lens

REFERENCES


16. Su. S. Ut. 7/15-17, Nibandha Sangraha Commentary of Shri Dalhanacharya and Nyayachandrika Panjika of Shri Gayadasacharya on Nidanasthana, edited by Vaidya Yadavji Trikamji and Narayam Ram Acharya...