



CLARITY OVER INVOLVEMENT OF *SHIRAH* IN *PAKSHAWADHA* FROM AYURVEDIC POINT OF VIEW W.S.R.TO INVOLVEMENT OF BRAIN IN IT: A REVIEW ARTICLE
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ABSTRACT

Pakshaghata (Stroke) is *Vata Pradhana* disorder which is caused by vitiated *Vata*; there are several *Vatavyadh* is described in ancient *Ayurvedic* texts among them lot of diseases might be related with neurological disorders according to their cardinal signs and symptoms. According to modern point of view an origin of neurological disorders is brain and central nervous system; but in *Ayurvedic* classics there is no any relation of *Vatavyadhi* and *Shirahh* (Brain) even any clue also not mentioned regarding the relation of the same. Present article evaluate the correlation between involvement of *Shirahh Pradesh* in *Pakshaghata* and other neurological disorders.

Keywords- *Vatavyadhi*, Neurological disorders, *Pakshaghata*, Stroke.

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INTRODUCTION

Vatavyadhi's are the disorders in which *Vataplays* leading role in their pathology. There are so many *Vatavyadhi* described in texts; like *Pakshaghata* (Stroke), *Ekangavata* (Hemiplegia), *Sarvangagatavata* (Quadriplegia), *Adhrangavata* (Monoplegia), *Ardita* (Bell's Palsy), *Akshepaka* (Convulsions/seizures), *Vepathu/Kampa* (Parkinson's disease). Among them *Pakshaghata* is an important disease; Most of the *Vatavyadhi* might be related with brain and central nervous system. Brain is involved in a lot of *Vatavyadhi* like *Pakshaghata* (Stroke).

There are various *Vatavyadhi* and *NanatmajaVataVikara*¹ explained in the classics. Looking towards various functions of *Vata*² like it prompts all the types of actions, restrains and impels mental activities, coordinates all the sense faculties etc. it might be correlated with the functions of brain. Still, in the classics it is nowhere mentioned that *Shirah* (brain) might be directly involved in the

Samprapti of the *Vatavyadhi* like *Pakshavadha*. If *Pakshaghata* is studied on minute level -its causes, signs-symptoms, organs involved in its Pathophysiology even in treatment, texts have hardly mentioned the involvement of brain in it. Whereas, according to the modern point of view the involvement of brain is being directly mentioned in such disorders.

Therefore, the present study helps us connecting the dots and getting informed for the topic by overlooking certain bullets.

Material & Methods: -

All the study material collected from *BhrutaTrayi*.

Involvement of *Avayava* (organs) and *Lakshana* (signs and symptoms) of *Pakshaghata*: -

Following table shows *Hetu*, *Lakshane* and organs involved in pathophysiology of *Pakshaghata* by different *Acharyas* in their classics (*Hetu* of *Pakshaghata* are particularly not specified, general *VataPropakaHetu* are considered as *hetu* of *Pakshaghata*).

Table no.1 - Involvement of *Avayava* (organs) and *Lakshana* (signs and symptoms) of *Pakshaghata*

Sr.no	Name of Acharya	<i>Lakshane</i> (signs and symptoms)	<i>Avayava</i> (Organs)
1	<i>Charaka</i> ³ (<i>Chi</i> 28/53-55 p-619)	<i>CheshtaNivrutti</i> (loss of movement), <i>Ruja</i> (Pain), <i>Vakstambha</i> (Aphasia), <i>Sira-</i>	<i>Hasta, Pada, Sira, Snayu</i> , (one side of body either right or

		<i>SnayuShosha</i> (Dryness of arteries, Veins, muscles and tendons), <i>Hastapada-sankocha</i> (flexion of extremities due of anatomical structure), <i>Toda Shoola</i> (Pricking Pain)	left) (Chi28/53-55 p-619)
2	<i>Sushruta</i> ⁴	<i>AnyataraPakshahanana</i> (damage of one side of body either left or right), <i>SandhiBandhaVimoksha</i> (loosen joints), <i>AkarmanyataaAcetanam</i> (loss of sensation orconsciousness)	<i>AnaytraPakshahanana</i> (Damage of one side of body either left or right), <i>Sandhi</i> (whole joints of one side of body), <i>Sira-Snayu</i> (Veins-ligaments)
3	<i>VagbhataHridya</i> ⁵ & <i>Samgraha</i> ⁶	<i>AnyataraPakshahanana</i> (damage of one side of body either left or right), <i>SandhiBandhaVimoksha</i> (loosen joints), <i>AkarmanyataaAcetanam</i> (loss of sensation orconsciousness)	<i>AnaytraPakshahanana</i> (Damage of one side of body either left or right), <i>Sandhi</i> (whole joints of one side of body), <i>Sira-Snayu</i> (Veins-ligaments)
4	<i>MadhavaNidana</i> (<i>Vatavyadhikara</i> 21)	<i>Pittanubandha – Daaha</i> (hot flashesh), <i>Murchchhaa</i> (loss of conciouness), and <i>Santaapa</i> (hyperthermia of body). <i>KaphaanubandhiPakshaghata-Shotha</i> (Swelling), <i>Gaurava</i> (Heavyness), and <i>Stambha</i> (Stifness)	As like <i>Sushruta</i>
5	<i>Vangasena</i> ⁷	Same as like <i>Suhsruta</i> with	<i>Sarvanga</i> (Whole

		<i>additional sarvangataLakshane</i>	body), <i>Netra</i> (Eyes), <i>Shotha</i> (swelling), <i>Shitata</i> (sensation of clod),
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In *Pakshwadha*, various signs and symptoms can be seen which are related to brain and nervous system. But if scanned *Vatavyadhi* very closely from the organs or *Avayava* point of view, it can be seen that there is absence of the words like *Mastishka* or *Shirahh* or *Mastulung* relating the pathology of any *Vatavyadhi* to brain. (Table no.1)
The Doubt arises about whether is *Mastishka*

(Brain) or the nervous has any role, as the Site (*Sthanasamshraya*) of various *Vatavyadhis* or not?

Various *Vatavyadhis* are actually the disorders of Nervous system⁸. Nervous system has the control from brain. Brain is located in *Shirah*.

If seen carefully, one cannot find the word *Mastishka* or *Shirah* in the whole chapter of *Vatavyadhi* in Charaka.

Table no.-2 Organs involved in *Vatavyadhi* and sings related to nervous system in *Vatavyadhis*.

Sr.no	Organs involved
1	<i>Jangha</i> (leg), <i>Uru</i> (Thighs), <i>Trika</i> (Sacral region), <i>Prushata</i> (Back), <i>Guda</i> (Anus) ⁹
2	<i>Hrudya</i> (Heart), <i>Nabhi</i> (Umbilicus), <i>Parshava</i> (lateral Side), <i>Udara</i> (Abdomen), <i>Kantha</i> (Throat), <i>Asya</i> (Oral cavity), <i>Aamashaya</i> (Stomach) ¹⁰ .
3	<i>Pakwashaya</i> (Large intestine), <i>Aantra</i> (Small intestine), <i>Trika</i> (Sacral region) ¹¹
5	<i>SarvaSandhi</i> (Alljoints) ¹²
6	<i>Pada</i> (Legs), <i>Janu</i> (Knee), <i>bhru</i> (Eyebro) , <i>Lalat</i> (forehead), <i>Hanu</i> (mandible), <i>Danta</i> (Tooth), <i>Hasta</i> (hands), <i>Shankha</i> (temporal area), <i>Ganda</i> (Chicks) ¹³
7	<i>Manya</i> (Cervical area), <i>Griva</i> (Neck), <i>Vadana</i> (Face) ¹⁴
8	<i>Hanu</i> (mandible), <i>Urah</i> (Chest) ¹⁵
9	<i>Sira</i> (Vein), <i>Snayu</i> (ligmanents), <i>Kandra</i> (Tendons) ¹⁶

10	<i>Shroni (hips), sfika (buttocks), kati(Low back)</i> ¹⁷ ,
11	<i>Grahani (Duodenum), Pakwashaya(Large intestine) Aamashaya (Stomach)</i> ¹⁸
12	<i>Rakta (Blood), Mamsa (muscles tissue), Asthi (Bones), Majja (Bone marrow), Shukra (semen)</i> ¹⁹

Likewise, one can observe various signs and symptoms are also explained in following table. involvement of nervous system from the following table. vatavyadhis which seem to have the

Table no.-3 Signs and symptoms involved in *Vatavyadhi* and sings of *Vatavyadhis* related to nervous system

Sr.no	Sings related to nervous system
1	<i>Pralapa (delirium), Lomharsha (Horripilation), Shirograha (heav ness of head), Anidrata (Insomnia), Spandana (Twitching sensation), Gatrasuptata (numbness in body), MutravarchaNigraha (Retention of urine and feces) Akashepa (Convulsion)</i> ²⁰
2	<i>GatraSfurana (Twitching sensation)</i> ²¹
3	<i>Moha (Unconciuousness)</i> ²²
4	<i>Vaka-swaragraha (freezing of speech process or tone) , Lomaharsha</i> ²³ (horlification/ gosebumb)
5	<i>Murcha (faintaning), Tandra (drowsiness) Ojakshayach, ojabhramshach</i> ²⁴ .
6	<i>Ardita (Bell's Palasy) Swarabhrda (Hoarseness of sound)</i> ²⁵ <i>Bahya-aabhyantrayama (opisthotonus and emprosthotonus)</i> ²⁶
7	<i>SarvendriyanamaShunyatva (loss of all senses) , Smrutibalakshaya (loss of memery), Jada, Gadagada, Mukta (difficulty in speech, slurring speech, dumbness)</i> ²⁷
8	<i>Lalastrava (Excessive salivation), Vakagraha (Aphasia or Dysarthria)</i> ²⁸
9	<i>Cheshtanivrutti (loss of movement), Ruja (Pain), Vakastambha (Aphasia)</i> ²⁹ ,
10	<i>TamaPravesha (feeling of darkness), Bhrama (giddiness)</i> ³⁰ .

The collection above mentioned organs and anatomical structures misses the brain or *Mastishka* from them. Nowhere in *Vatavyadhi*, had *Charaka* used the word *Shirah* or *Mastishka* in the *Samprapti* or *Lakshanas* too. But there are various signs and symptoms which completely indicate the involvement of brain or nervous system as a whole.

The diseases like *Pakshwadha* or *Ardita* are having the involvement of brain from modern studies, but according to *Ayurvedic* texts terms like *Shirah/Mastishka/mastulunga* etc. are not mentioned.

So, how can one identify the relevance of clinical data of *Vatavyadhi* with the today's modern concept of nervous system developed through various proven diagnostic techniques?

Due to this question raises that?

1. Do the various *Vatavyadhis* have direct relation to the neurological disorders from Ayurveda point of view???
2. Does *Ayurvedic* researchers in the past who wrote Ancient texts (especially *Charaka*) have the knowledge of direct connection of Brain & *Vatavyadhis*???
3. Various diseases related to mind or psychiatric origins are also related to brain as per modern physiology of nervous system. Was *Charaka* also aware of this fact???

Following points will guide to the theory of relation of the disorders of *Vata* with the actual site of the vitiation (*Sthanasamshraya*) at nervous system from purely an *Ayurvedic* point of view.

A. Logic 1

The causes of provocation of *Vata* include one as "*Marmaghata*". *Charaka* has made very clear that the three vital points (*Shirah-Hridaya-Basti*) are the major source of agony and he considers only them as the *Marma* from medicinal point of view. So *Marmaghata* in *Charaka* points towards the trauma to the three vital points. If studied the set of symptoms appear after trauma to *Shirahapradesha*³¹ (Brain / Head region), it includes "*Manyastambha-Ardita* (Facial Palsy)-*ChakshuhaVibhrama* - *Moha* - *Udveshtana-Cheshtanasha* (cessation of movements)- *Mooka* (dumbness)-*GadaGadatva* - *Akshinimeelanam*-*Jrumbhanam* (Yawning)-*Lalasarava* (continuous salivation)-*Svarahani* (hoarseness of voice)etc. diseases. Most of the said diseases are having direct connection with the nervous system. Symptom like *Cheshtanasha/mookatva* (dumbness) /*Vakstambha* (complete ceassation of speech) must have been observed by *Charaka* after head injuries

and he must have been aware of the fact that voluntary movements of the muscles or the control of speech or the control of the muscles helping in speech might having the control from the *Mastishka* region³².

So, there might be awareness of the presence of control of various functions of movements – normal motor movements inside *Mastishka*.

B. Logic 2

After finishing the topic of *Gatavata*, *Charaka* concludes that the symptoms which are not explained here can be anticipated from the sites which are vitiated & occupied by provoked *Vata*³³. *Chakrapani* elaborates that other similar diseases which are present at various sites created by the accommodation of provoked *Vata* in them, are explained elsewhere in *Maharogadhyaya*³⁴.

In the list of diseases created lonely by *Vata* (*Nanatmaja Vatavyadhi*), there are eighty diseases. This list starts from the disease '*Nakhabhedah cha*' followed by *Vipadikah cha*.....*Urustambhah cha*. *Shronibhedah cha*....*TrikaGraha cha* etc and go on listing various diseases as per their sites of stay (*sthanasamshraya*). This sequence is very

typical and specific. The list starts from *Nakha*, then *pada*, *Uru*, *Kati*, *Udara*, *Urah*, *Gala*, *Manya*, *Mukha* and go on in upward direction³⁵. (The similar phenomenon can be observed in the symptoms of *VatajaJvara* explained by *Vagbhata*)³⁶

So when the list arrives to the diseases like *Akshishoolam cha*. *LalatBheda Cha*. *Shirah Rook ch*..etc i.e. in the area of scalp & head, suddenly after the disease *KeshaBhoomiSphutanamch*...the list starts naming the diseases like *Arditam cha*-*EkangaRogahCh-SarvangaRogah cha*-*Pakshavadhah cha* – *Akshepakah cha*-*Dandakah cha*-*Tamah cha*-*Bhramah cha*-*Vepathu cha*-*Jrumbhahch*- *Hikkah cha* etc. So it is now pretty clear that *Charaka* was fully aware of the '*SthanaSamshraya*' of the diseases of *Pakshavadha*/*Ardita*/*Ekangaroga*/*Akshepakais* the *Mastishka* region. He was sure that *Vatavyadhi* which are taking place have their site of pathology as brain region and main culprit to vitiate these sites is *Vata*³⁷

Also this list of the diseases is related to the *Neeja* disorders. Thus both set of *Vata* disorders namely *Neeja* and *Aagantuja* are having relations with *Mastishka* or *Shirahhpradesha*.

C. Logic 3-

Not only *Charaka* was aware of the fact of the site of voluntary control of muscles, but also “the actual site of work of Mind” was also brain. As the list proceeds with the diseases like *Vishadah cha-Atipralapah cha.....Asvapnah*(Insomnia) *Cha...Anavasthitchitatvamcha*³⁸. Here, *Aswapa* means *Anidra* is also created due to abnormality in brain created by *Vata* relating the functions of sleep with *Shirahpradesha*. It is crystal clear that *Charaka* was well aware of all the facts which we consider as modern science has discovered at his time i.e.1000 B.C. too.

DISCUSSION

From all the above logics and clarifications, it is very clear that the ancient *Acharyas* (especially *Charaka*) were well aware that the pathologies like *Ardita*, *Pakshwadha*, *Cheshtahani* etc and *Anavasthita Chittatva* and *Anidra* have the involvement of *Mastishka* or brain in today’s terms.

Charaka avoided mentioning of *Mastishka* in *Pakshwadha* at both the places i.e. at diagnostic level and at treatment level³⁹ as treating the brain does not solve the problem in *Pakshwadha* cases, after the initial phase of *Pakshwadha* episode. The treatment

needed is only *SnehanamSwedaSamyuktam* (oleation with sudation) to solve the *Sankocha* of *Hasta Pada*, *Vishosha* of *Sira* and *Snayu* once the initial phase is over. These treatment modalities will help in pacifying *Toda* and *Shoola* also. *Virechana* will help in regulating the *VimargagaVata* in these cases.

Even, treatment of *Pakshwadha* also does not indicate the modalities like *Nasya* or *MoordhniTailamas* per any classical texts. It simply indicates that all the ancient *acharyas* might be aware that after the initial phase of *Pakshwadha*, the target of treatment will be *Shakha* and not *Shirah*. So, the importance was given to *Hasta, Pada, Sira, or Snayu* in diagnosis as well as treatment.

But, *Charaka* was well aware of the involvement or role of brain or nervous system in the diseases like *pakshwadha*, *ardita* etc.

CONCLUSION

1. Ancient scholars were well aware of the neural connection and various disorders created by provoked *Vata*.
2. There might be awareness of the presence of control of various functions of movements – normal motor movements inside *Mastishka*.
3. The absence of mentioning of *Mastishka* in *Pakshwadha* in *Samprapti* might be from treatment point of view.

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