



Seat of vata as majja and majja as brain

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Abstract-

In Ayurveda, vata is one among the three basic humours that plays a major role in balancing the health. Most of the vata disorders discussed in Ayurveda are being diagnosed under neurological disorders in modern medicine .

It is a known fact that vata has predominance of vayu and akasha mahabhuta having dual properties of sound (shabda) and touch (sparsh), which is one of the characteristic function of the brain.

Majja, one of the sapta dhatus is located inside the bones.

The femoral bone has the largest quantity of majja as compared to other bones, hence we can say that porosity of femur or femoral bone , is nothing but seat of vata and there is a good porosity within cranial cavity (spongy bone) where the majja (brain) is located, proving that there is a vatasthana .

Hence an attempt has been made to understand the seat of vata as majja and majja as brain.

Key words: vata, majja, brain, cranial cavity, mastishkha or mastulunga.

Introduction –

Acharya Sushruta is considered as father of surgery and according to Sushrut Samhita, no living being is considered devoid of Doshas (Vata, Pitta and Kapha). And Vata dosha is considered as the chief dosha among all the three doshas. Only Vata is capable of mobility and its force keeps the other two Dosha, Dhātu and Mala in motion .

The word Vata is derived from the root "Va" with suffix "Ta" means Gati (to move). It has been told that there can be no creature without Vata. Majja means bone-marrow (asthi-majja) & is associated with the entire nervous system, which is encased within bone like bone marrow.

According to Acharya Sushruta, there are seven Dhatus in body-Rasa(lymph), Rakta(blood), Maamsa(muscles), Medas(fat or adipose tissues), Asthi(bone), Majja(bone marrow), Sukra(semen, sex hormone). Majja Dhātu is the second last Dhātu formed as -unstable(poshaka) Asthi Dhātu flows through the Majjavaha Srotas into the Majja Dhara Kala and is digested by the Majjagni. During formation of Asthi Dhātu or Bone, Vata creates spaces in bones. These spaces are filled with nourishing tissues of Medas or fat which is

known as Majja or Bone marrow. The final essence of the Asthi Dhatu which is a semisolid substance becomes Majja in the process of metabolism. Majja Dhatu fills the bones, nourishes & strengthens body, as described by Acharya Sushruta.

स्थूलास्थिषुविशेषणमज्जा त्वश्यन्तराश्रितः□

सु.शा. ३□

As per the definition, there are different types of bones which are progressively formed. Majja is formed after the formation of asthi. Majja is located within the bone. Cranial cavity is made up of kapalasthi, it forms the whole cranial cavity, & within that there is a nervous tissue/ brain, which is as per the definition nothing but majja, Hence it proves brain or (Masthiksh) is similar to the Asthi – Majja of long bones or small bones (Anvasthi).

As per the definition, chiefly, femur is having largest quantity of majja as compared to other bones. Hence we can say the porosity of femur or femoral bone having majja inside it, is nothing but seat of vata. Hence we also can say there is a good porosity within cranial cavity (spongy bone) & within cranial cavity, the majja (i.e brain) is located. Hence we can say that there is vatasthanana within kati & sakti, same can be applied to the cranial cavity. So cranial cavity is also a seat of vata, Hence we can say brain is also a seat of vata.

Aims and Objects:

To prove seats of vata as majja & majja as brain

Materials & method –

The materials have been collected from the ayurvedic texts i.e Brihatrayee & laghutrayee, mainly- Sushrut samhita, Charak samhita & Ashtang hridaya & modern texts.

Vata Dosha

sqaana

(common site of vatadosha)

The nature of tridoshas is all pervading in the body, but the organs where the dosha mainly functions has been mentioned as its main site.

पक्वाशयकटीसक्थिश्चोत्रास्थिस्पशनिन्द्रियम् □

स्थानंवातस्यतत्रापिपक्वाधानंविशेषतः □

अ.ह.सु. १२□

p@vaaSaya (large intestine)

Here, digested food gets separated in sara(useful) and kitta (waste) by vata dosha. Also waste products are thrown out of the body by action of vata. Vata dosha and pakvashaya are intimately related with each other. Pakvashaya is the place for genesis of vata, main site of activity, site as an origin of pathogenesis and selective site for main treatment of vata. Basti or enema is the main treatment for PakvashayagatVata.

कटी(pelvic gridle)

This region incorporates important organs like large intestine, rectum, anus, urinary bladder, uterus and ovaries. These organs are related with excretory activities like micturition, defecation, menstruation etc. These functions are part of the separation type function of vatadosha.

सक्थि(Thigh)

Walking, running, sitting (mobilization) are the activities of leg. These movement functions are related with vata dosha.

ओत्रहृEars)

Sound is perceived by ears, sound is a property of akasha (ether) mahabhuta , composition of vata includes akasha. Ayurveda has suggested karna-puran (filling of ears with oil) as a part of daily regimen (dinacharya).

अस्थि(Bone)

Bones and vata dosha have a special relation called as ashrayashrayi bhav. Bones are ashraya (media) and vata dosha is ashrayi (dweller). For instance, cranial bone – ashraya and mashtiksha or brain-ashrayi. Body activities are mainly concerned with body joints and any activity cannot take place without vata dosha.

स्पर्शनिन्दिय

(sense organ of touch is skin)

Skin perceives different types of touch sensations like cold, hot, soft, hard. Vata dosha is composed of vayu and akasha (air and ether). Touch is property of vayu mahabhuta. Hence relation of vata dosha with touch sensation is established.

5 forms of vata

- प्राण वायु
- उदान वायु
- व्यान वायु
- समान वायु
- अपान वायु

प्राणवायु

प - guarding ,protecting, ruling.

प्र - great

अन् - to breath, to live

प्राण- spirit, vitality to live

Organs of vitality or sensation (mastishka or brain)

Site-

स्थानम् प्राणस्यमूर्ध्निः □

कण्ठः जिह्वाश्च नासिकाः □

Head and chest are 2 main sites of prana vayu. Head, throat, mouth, tongue, nose, heart, mind and intelligence are also included.

उरः कण्ठचरो बुद्धिहृदयेन्द्रियचित्तघृक् □

प्रीतनक्षवथूदगारनिःश्वासान्नप्रवेशकृत् □

Among these prana vata is located in murdha (head) and it traverses along ura (thorax) and kantha (throat). It maintains the proper functioning of buddhi (intelligence , judgement), hridaya (in this context brain), indriyas (sense organs) and chitta (mind) and perform functions such as shthivana (spitting), kshavathu (sneezing), udgara (belching), nishvas (respiration) and anna pravesa (deglutition).

उदानवायु

उर्द् upwords ,upon, above

दान् giving

उदान- one of the fine vital airs or fine winds which rises up the throat & enters into the head.

Sites –

उरः स्थानम् उदानस्य □

नासानाभिगलांश्चरेत् □

वाक्प्रवृत्तिप्रयत्नौर्जाबलवर्णस्मृतिक्रियः □

अ.ह.सु.१२□

The chest is the seat of udana, it moves in the nose, umbilicus & throat . Its functions are initiation of speech, efforts, enthusiasm, strength (capacity of work), colour (complexion) & memory(awareness). Though the seat of udana vata is held to be the throat, its main function is speech which is produced by larynx hence its higher centre is broca's area. The areas for memory are considered to be hippocampus (processing) and other parts of medial temporal lobes of brain, in association with several cortical areas like frontal lobes for 'working memory'

सू १२□□

व्यानवायु

व- air/wind

व्यान् 'to draw in the breath through the whole body.

Site –

व्यानो हृदिस्थितः . . . अ.ह.सु.१२३७

Vyana is located in the heart, move all over the body in great speed, attends to functions such as walking, bringing the body parts downwards, lifting the body parts upwards, opening & closing of eyes etc. Generally all the activities concerned with the body. Vyana implies the motor system and activities of reticular activating and inhibitory systems. It is mahajava (of great speech) and is involved in gati (movement), avakshepa (flexion), utkshepa (extension) all being the functions of the locomotor system and the area for its control (the term mahajava can be interpreted as nerve impulses of high velocity) अ.ह.सू.१२३७

Samaana vaayau:

samaana– same identical , uniform, homogenous (function of grahani)

holding the middle between two extremities

(between vyana & apan) , middling.

Site –

समानोऽग्निसमीपस्थः

कोष्ठेचरति सर्वतः अ.ह.सु.१२३८

The main site is koshtha. Samana is located near the fire (digestive activity), in the koshta (alimentary tract & other abdomen viscera), withholds the food in the (alimentary tract for some time), helps in digestion, separates the sara (essence) and kitta (waste) and eliminates waste out of body.

According to charak – it is svedavaha, ambuvaha, doshavaha srotas.

According to sushrut – its site is near agni, stomach and large intestine.

According to vagbhat – all above and near shukra and artava.

All the neuro-hormonal influences of digestion, including the role of parasympathetic nervous system and the ENS (enteric nervous system) are the functions of samana vata. The two networks of nerve fibres that are intrinsic to the GI tract are mesenteric plexus (anurebach's plexus) between the outer longitudinal and inner circular muscle layers and submucous plexus (meissner's plexus) between the middle circular layer and mucosa. These together are known as the enteric nervous system. These contain sensory and motor neurons, and in the opinion of many authors this is 6 displaced part of CNS concerned with regulation of GI function. Though it is connected extrinsically to CNS with sympathetic and parasympathetic fibres, it functionally independent .

अ.ह.सू.१२३८

Apana vaayau

अप – away, inferior

अपान – Breathing out respiration, one of the five life winds in the body which goes downwards & out at the anus.

Site –

अपानोऽपानगः श्रोणिबस्तिमेद्वोरुगोचरः . .

. . . कियः अ.ह.सु.१२३९

Mainly lower abdomen or pelvic area. Apana vayu has the control on organs around umbilicus and in pelvic girdle, urinary bladder, genitals, rectum and thigh. Apana is located in the pakvashaya (large intestine), moves in the waist, bladder, penis (genital) & thighs & attends to the functions such as elimination of semen, menstrual fluid, faeces, urine & foetus. Expulsion of material from the lower part of the trunk through orifices located at the anterior and posterior perianal triangle with help of sphincters for control, are the

main functions of apana vayu. This faculty has 3 parts (as in most neurological activities) an ascending limb to conduct impulses, a processing zone to determine action to be taken. Descending limb for executing appropriate motor activity. It is concerned with involuntary functions.

गुण Qualities of vata

According to Charak	According to Sushrut	According to Vagbhat
Ruksha	Ruksha	Ruksha
Shita	Shita	Shita
Laghu	Laghu	Sukshma
Sukshma	Muchschara	Chala
Chala	Vishada	Khara
Vishada	Khara	Vibhu
Khara	Vaishatambhya	Ashukari
Daruna	Avyakta	Balitvad
Amurtatva	Tiryak	
Yogavahi	Ashukari	

Functions of vata dosha–

- वायुस्तन्त्रयन्त्रधरः प्राणोदानसमानव्यानापानालाप्रवर्तकः श्वेष्टानाम् ऊच्चावचानां निचन्ता प्रणेता च मनसः सर्वे

न्द्रियाणामुद्योजकः सर्वेन्द्रियार्थानामभिवोद्धासर्व
शरीरधातुव्यूहकरः सन्धानकरः शरीरस्य प्रवर्तको वाचः
प्रकृतिः शब्दस्पर्शयोः श्रोत्रस्पर्शनयोर्मूलहर्षोत्साहयोनिः
समीरणोऽग्नेः दोषसंशोषणः क्षेप्ताबहिर्म्
लानां स्थूलाणुस्रोतसांयेत्ता कर्ता गर्भाकृतीनाम्
आयुषोऽनुवृत्तिप्रत्ययभूतो भवति अकुपितः □
च.सू.१२ □

The vata in its normal state of functioning sustains all the organs of the body. It consists of prana ,udana , samana, apana and vyana. It prompts all types of actions. It restrains and impels the mental activities. It co-ordinates all the sense faculties and helps in enjoyment of their objects. It brings about compactness in all tissues elements of the body. It brings together different parts of the body. It prompts speech & is in the origin of touch as well as sound. It is the root cause of auditory and tactile sense faculties & the causative factor of joy and courage. It stimulates the digestive fire and absorbs the doshas & throws out the excreta. It creates the gross and the subtle channels & moulds the shape of the embryo. It is indicative of the continuity of the span of life.

Brain – Location & Functions

Cerebrum	Cerebellum	Brain stem
The cerebrum is the largest part of brain the outer part is called the cerebral cortex.	The cerebellum is about the size of pear.	The brain stem is located at the bottom of the brain above the neck, where it connect the brain to the spinal cord.
Divided into 2 parts called Right and Left hemispheres	Tucked under and behind cerebrum.	Divided into 3 parts. Medulla, pons and mid brain.
Function-Responsible for thinking, senses producing and understanding languages ,memories, eating, emotions, body temperatures, sleeping, hormones.	Function- controls muscles movements, balance and co-ordinations.	Function – Responsible for automatic survival functions such as breathing, heartbeat and digestion as well as reflexes such as sneezing, swallowing and coughing.

Conclusion:

Brain and majja dhatu-

- मस्तिष्कशिरस्थोमज्जा □
- मस्तिष्कः शिरोगतस्नेहः चक्रपाणि □ च.सू. ७.३५ □
- शिरोमूलत्वात् प्रधानमिन्द्रियाणाम् □ सु.शा ३.३२ ह
Head is root of all organs. (Head is chief organ.)
- मस्तुलुंगोऽविलीनघृताकारामस्तिष्कमज्जा □ डल्हन
मु.सू. १०.३२ □

Reference from ayurvedic texts show that brain (mastishka or mastulunga) is made of majja dhatu, which is also known as fat inside the cranium (sirogata sneha) or non-diluted (avilina) ghruta.

- प्रहर्षेण अनति इति प्राणः □

The root 'Ana' means to move, the one which moves enthusiastically is known as prana, the seat of prana is considered as hradya दि प्राणः by some authors, where हृदयस्मिनोऽधिष्ठानम् (the brain).

- नवस्नायुशतानिमस्तुलुङ्गमूलानि □ का.सं.शा. २

Nine hundred snayu (nerves) with their roots in mastulunga (brain).

- मस्तुर् watery part of curds.
- लुङ्गर् the brain
- मस्तिष्कम् गोर्दम् दिमागमस्तिष्क
- मस्यतेमसनं वामसीपरिणामे
- मस्तिंमस्कते मस्क गतौ □ अमरकोष □
- मस्तिष्क the brain

Hence it is proved that the seat of vata is majja & majja is brain.

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