

**FUNCTIONS OF VATA
(BASED ON CHARAKA)
A Passage from Vaatkalaakaleeyam**

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ABSTRACT: *The author has chosen 12th Chapter from the Sutra Sthana of this great epic containing 12,000 verses and passages which is replete with materials to revive the whole art of healing even if the whole medical literatures is lost. The passage puts in a nutshell the key role played by Vayu / Vata in the working of the tantra and yantra of the body. Though exploration of the humours is yet to be done by modern physiologists to explain the Ayurvedic Vata which is responsible to no less than 18 functions of the normal body mechanism.*

Vayusthantra Yantra Dharah,
Pranodana Samanavyanapanatma
Pravartakascestanamucca Vacanam,
Niyanta Praneta Ca Manasah,
Sarvendriyanamudyojakah,
Sarvendriyarthanambhivodha,
Sarva Sarira Dhatu Vyuha-karah,
Sandhanakrah Sarirasya,
Pravartako Vacah,
Prakrtih Sparsa Sabdayoh,
Srotra Sparsanayormulam,
Harsotsahayoryonih,
Samirano Agneh,
Dosasamsosanam,
Kseptta Birmalanam,
Sthulanu Srotasam Bhetta,
Karta Garbhakrtinam,
Ayusonurtti Pratyaya Bhuto Bhavatyakupitah.

This deals with the normal activities of vata or vayu, one of the three dosas on whose vitiation, provocation or deficiency disorders of various types start and bring unhappiness to the individuals. This passage by Charaka deals with in these nut – shell the whole physiology of vata. This makes a scholar of ayurveda understand

what exactly is meant by vata or vayu. We would like to unravel the material which each one of these sentences depict that conclusions could be drawn.

Vayusthantra Yantra Dharah

Vayu or vata is responsible for the normal working of the tantras and the yantras of the body. This body may be that of man or animal, nay, by taking it in broader perspective even the tantras and yantras of a plant (for it is also a living entity and here the sarira means a living entity wherein the play of vayu is described are also controlled by vayu to continue the existence of the shareer in normal way.

Now let us ponder over tantra and yantra which are kept up by vayu to continue their work in normal manner. Tantra, in general, means a system such as digestive system, nervous system, cardiovascular system, genitourinary system, endocrine system etc. Yantra denotes an organ as such, a viscus. An organ has its own functions to perform, at the same time it is a part of a system and has to work in unison with other parts of the system at a particular time in a particular situation. For example, stomach is a yantra in ayurvedic terminology which continues its activities as per the dictates of vata. Duodenum jejunum and ileum comprising the small intestines are also under the control of vata. Ingested food is first propelled through the oesophagus which is a Yantra vata makes it propel food which is first chewed and worked upon by teeth, masticating musculature and deglutiting muscles which all are parts of a tantra or system. Food is received in the stomach and worked upon. The mandhura paka done through intermingling of salivary secretion is converted to amla paka or acidic form in this part of the system which is further processed in the three parts of the small intestines. So the role of vayu is maintaining the working of each and every individual yantra and then allowing the concerned tantra to do a given work is just like the parts of a big machine which is meant to perform a known work when all its parts work in coherence and correlate and

co-ordinate with each other. The machine here represents the tantra and the parts of it as yantras. One can easily guess what exactly is done by what in modern physiology. Ayurveda gives this role of a coordinator of various organs for directing a particular work by a system. If body is taken as a tantra, by implication all other viscera then become yantras and the normal working of the body will then be regulated and directed by vata. From this it should become clear to the medical word that in dealing with the treatment of various disorders, an ayurvedist looks into the working of vata in relation to an individual organ vis-à-vis its relation with the system. A yantra is diseased, then its position in relation with vata has to be determined. Whether it is vata which is vitiated or has become deficient or that some other controlling factor has become defective. Similarly the organ may be alright but its coordination with other organs is disturbed, causing a particular malady or disorder or syndrome. A vaidya has to decipher an abnormal health problem in terms of vata, pitta and kapha. In this very first sentence two functions of vata are described – it is both tantradhar and yantradhar. These two functions are taken together to give one whole physiological meaning which has been explained above.

Pranodanasamanavyanapanatma

Vata is the ataman of (i) PRANA, (ii) UDANA, (iii) SAMANA, (iv) VYANA & (v) APANA. In simple words it is the soul of the pancapranas. Ayurvedic texts describe 5 categories of vata. Names given to these categories are the same as given above in charakiyan quotation. Prana is inhaled through out the body by each and every cell to get freshness and energy. The moment it is stopped a person leaves this world. Its supply from outer atmosphere

resuscitates the individual if given in time. Udana is that which is exhaled, which is to be held up for a definite effort or push and which causes speech and vocal music. The samana is responsible for the digestion. This digestion may take place in alimentary canal or in tissues or in cells. A unicellular creature amoeba takes up a food particle; this particle is ingested and then digested. It is the samana part of vata which does this work. The vyana helps cause circulation of blood or lymph possible. It moves with the vessels or allows fluid to move in the hollow spaces. Movement of extra cellular fluid to venules, movement of the fluid of venule to a vein and from vein to the heart and from the heart to the aorta, thence to larger and then smaller arteries from there to arterioles and from there to capillaries. Vyana actively participates in this work. If this movement is cut short anywhere in the body a havoc in the form of gangrene is produced till it is immediately rectified by surgical maneuvering or so. A physiologist can very well understand the five divisions of vata and their role to maintain life. Caraka points out that all these five pranas have a single motive force in them and it is nothing but vata. Inhaling or consumption of oxygen by the body, formation of carbon-di-oxide and its final disposal from the body, production of various types of enzymes coenzymes or so for making the material derived from out side for converting it to body tissues and moving the fluids from one part to the other are all the work of vata performed in various capacities. Apana is meant for the disposal of the waste products formed from the ingestion of materials as food. It excretes faecal matter, urine, sweat, menstrual fluid, and the ovum and the seminal fluid. The last two are also the excretion though meant for continuation of the race. Thus in this second section five important functions of vata are described:

- i. Providing oxygen to the body.
- ii. Collecting and disposing off of CO₂.
- iii. Production of digesting materials in the body to digest food and convert it to body elements.
- iv. Causing circulation and maintaining movements of fluids through vessels, spaces or srotas and
- v. Throwing off the excretion outside the body. The role of vata here is quite distinct from that of tantra and yantradara role of the first sentence. From this can we not guess the entity of vata we will answer this question later on.

Pravartakas Cestana Muccavacanam

Vata is the pravartaka of

- i. Ucca cestanam and
- ii. Awaca cestanam

These two actions are equal and opposite to one another. Vata causes one type of action to take place in the body. After some time when that action is not needed it begins nullifying it by causing opposite action. For example, we need flexing of the arm, after that extension of the arms are to be done. Both flexion and extension or pronation and supination, abduction or adduction are all done by vata. Vata is the initiator of these pro or opposite functions. Moving forward or backward, upward or downward, to the right or to the left, pulling or pushing are all the normal activities of vata. What are termed as the motorial or locomotive functions of the body are produced, promoted, initiated, or prompted by vata.

Niyantaa Pranetaa Cha Manasah

Vata is the controller and promulgator of all the activities of mind. An individual starts thinking his mind. This process is started by Vaayu. How much to think and when to stop thinking on a particular subject is also decided by vata. When this controlling power of vata is lost person beings to talk irrelevantly and becomes mentally defective. Start of mental disorders is due to the loss of this controlling power. According to this function vata is the prime factor in the understanding of normal as well as abnormal psychology of human beings. If one can restore this power of self control he can treat successfully all the other cases of psychiatry.

Sarvendriyana Mudyojakah

Kaviraja Gangadhara who wrote the famous Jalpakalpataru commentary of caraka Samhitaa uses the word UDYOTAKAH in place of UDYOJAKAH. Udyojaka means coordinator or convener and udyotaka is used for an expounder. Vata causes all the indriyas or organs of sense as well as of action to work in unison coordinating one another. Head must move and eyes must watch a scene of action taking place around. The two movements as well as the work of visualizing is a coordinated effort to gain knowledge. It is vata which brings about this coordination. According to Gangadhar perceptibility of the sense organs and activity of the action organs are caused and brightened by vata. If vata is weak a person will not be able to hear or see touch or move his hand or feet in a desired manner. Initiation and coordination thus both are the responsibilities of vayu. One aspect deals with actual action of the organ and the other deals with the reflex activities which express themselves in manifold ways. In ayurveda manas is the eleventh indriya. It is both a

Jananendriya as well as karmendriya. The relationship of vata to manas has been described in the above paragraph which deals with the initiation and control of the manas. Hence this section deals with the rest of the indriyas. Without vata no activity of indriyas is possible.

Sarvendryarthanambhiwodha

Vata is the carrier of the objects of indriyas. Sabda or sound is the object of srotendriya. The sense organs of hearing which is located in the ear first gets initiated to hear a sound projected in the atmosphere. This initiation is done by vata as is clear from the passage just mentioned. The object of hearing a particular sound or sabda requires vata to carry it to the hearing apparatus to analyze the actual sound with its meaning. This activity of vata starts in the organ and carries the object to the proper analysis with the ultimate motive of getting Jnana or knowledge. If vata part in the hearing apparatus is deficient, nothing can be heard or if heard, nothing can be deciphered from the sound heard.

Physical features of the sense organs have no defect but the association links are broken and require repair by supplying provata material. The role of vata in the carrying of the objects of indriyas was very minutely observed by ancient scholars of ayurveda. Kaviraj Gangadhar's use of the word ativodha for abhivodha can not be justified.

Sarva sarira dhatu vyuhakarah

Vata keeps all the tissues of the body together. Our physical form has a definite shape, every organ has a definite form, every part angas and pratyangas keep their due form which begins and continuously develops through out the growing years of

youth, late in old age decay, wear and tear of the tissues reshape them. In all these structural changes the most important role is played by vata. It keeps up the shape, size and form of the body parts. This is an active work or function of vata which continues throughout life. We know that when a particular vitamin becomes deficient in our body old scars of post wounds get split and bleeding starts from them. When a particular type of snake bites, the whole body is split up in pieces and it is very difficult to keep the cadaver in one piece. It is vata which binds cells to tissues and tissues to organs and the organs to the body through tendons, ligaments, septums and connective tissues. Vata has a great role to play in maintaining the connective tissues of the body healthy, with enough normal cementing substance which keeps the cell within its covering membrane and the tissues each at their proper place and shape. Compactness of all the tissue elements thus is the responsibility of vata.

Sandhanakarah Sarirasya

Just as each tissue is to have compactness in shape and form, similarly, body as a whole should also develop according to a physiological plan from birth till youth and further. This keeping of the shape and size of the whole body intact is another function of normal vata. When this vata becomes abnormal the body parts show such activities which cause benign or malignant tumours. Carcinoma is due to this abnormal vata component of our bodies. After the age of forty or so, vitiation of this vata begins and the body shape and its cementation is disturbed. The checks or the cosmetic sense which remains with vata is lost and so unchecked multiplication of cells of the body start causing epitheliomas, sarcomas and lymphomas on one side and lipoma or myoma on the other side. Checking these

malignant growths requires not the various chemotherapeutic agents and other anti-cancer drugs but a careful study of the abnormal localized and generalized vata factor.

Pravartako Vacah

Vata is the initiator of speech. One cannot speak if his vata system is defective. It is the activity of the centre of speech the areas of Broca and Wernicke called the motor speech area and the secondary motor speech area respectively are concerned with the production of speech. But they do so because of vata. There are examples when these areas are intact but the patient cannot utter a single word. Anti-vata treatment in cases of paralysis of the centers of speech, if given thoughtfully helps restore speech if the defect is due to provoked vata. If vata dhatu is deficient it has to be augmented before finding any solution to the problem.

Prakritih Sparsasabdayoh

Vata is the cause of sparsa (touch) and sabda (sound). In the above passage vata is related to the motorial function of speech. In this passage it is related to sensory activities. Relaying of the impulses of touch with the skin and deeper parts as well as the carrying over the sound waves of varied frequencies to the ear have specially been attributed to the normal vata activities. Vayu is denoted by Sparsa in the classics. That is why it is intimately related to sparsanendriya which is located in the skin or so. Sabda is related to akash and as it requires the medium of vayu to pass through it is also intimately related to vayu.

Srotraparsanayormulam

As stated in the previous paragraph, this statement corroborates the intimacy of vata

with srotrendriya and sparsanendriya. Mula means the principia causative factor. The pinna of the ear contains air or vayu and the skin as a whole is always in touch with air so the two indriyas and their objects are directly linked with vata. In those cases where sensory impulses are not carried for proper analysis the defect lies in vata system and the correct approach is through correction of vata. The same applies for hearing and other sensory perceptions of special nature.

Harsotsahayoryonih

Vata is the proper forum for the expression of joy and energy. How far an individual is satisfied or energetic depends upon the performance of his vata in the body. A person full of vatika activity is temperamentally more joyous and has the courage to come forward and devote himself to the causes of humanity or society. A grief stricken person always finds some fault here or there and showing no interest in doing all that is desired of him has a less percentage of normal vata in him. He fears and shirks any responsibility. Such people never become good leaders of the society. There is danger too in such people, for want of proper guidance they may take up criminal activities becoming dacoits and goondas or bad characters. Courage coupled with useful activities shows a path of happiness. They are inherently courageous but may become trigger – happy if proper training and directions are not given.

Samiranogneh

Vata stimulates digestive fire in the body. If a dry heap of grass is collected and ignited it will take some time to get burnt. But if the wind blows heavily it will cause more fire spread in a wider area and will consume the heap much faster. The same is true with the

vata located inside the body. It augments digestive juices and allows good appetite. Food is consumed by the system in normal way and materials are produced through metabolic activities in the body. Vata is responsible for the metabolic activities of all types to continue vigorously. There are some doctors who prescribe ready made enzymes to digest food in case of indigestion or dyspepsia. This approach is wrong, for, it causes disuse atrophy to organs which produce enzyme in the body in a natural way. They should have attempted the Vata system of the body which stimulates the enzyme producing system and helps in alleviating dyspepsia in a natural way. The digestion of food and sequence of formation of one dhatu from the other are the functions carried by agni in ayurveda. This is called agni – vyapara. Agni – vyapara is augmented, initiated and stimulated by vata. If vata is normal it will continue all this without any interruption but in case of hypothyroidism this agni – vyapara is minimized. It has to be found out whether the agni by itself is at fault or there is something wrong with the initiator or starter of this vyapara that is vata. Normalisation of the thyroxine level causes agni – vyapara to get corrected upto the normalcy. Similarly there may be too much of vata causing agni – vyapara to become excessive which is evident in cases of hyperthyroidism or bhasmaka roga or Tiksnagni. In such cases too the defect has to be explored as to which of the two agni or vata are at fault. An ayurvedist places more reliance on vata correction rather than agni correction.

Dosasamsosannah

Vata dries up the doshas Gangadhar Kaviraj has given a fine explanation to this piece of charakian prose. According to him vata dries up those dosas which are responsible

for increasing collection of fluid in the body tissues – ‘Dosasamsosanah sarira Kledavridhdhau dose samsosakarah’ Chakrapani Dutta the famous commentator and authority on caraka gives the meaning of dosa here as sarirakleda. If we look into the various condition in which collection of fluid is commonly met we find ascites (jalodar) pleurisy with effusion (urastoya). General anasarca (sarvangsoth), oedema, hydrocephalus, pericarditis with effusion, hydrarthrititis as some of such conditions. In such cases the role of vata has to be measured accurately. Whether it has failed to perform its duty of avoiding collection of fluid or there is srotorodha i.e. obstruction to channels which is responsible for this catastrophe. Retention of sodium iron in the body is done by corticosteroids which causes oedematous condition in the body. Whether there is any link between ayurvedic vata and the hormones as such requires proper exploration.

Ksepta bahirmalanam

Vata has been claimed to be responsible in its normal activity to throw out the excreta produced agni – vyapara and other physical and mental work done by the body. We have already referred to the role of apana in this connection. But Caraka does not take upon into full confidence and so adds this new piece of prose to emphasise the direct role of vata. Every cell digests something, produces something and excretes something. Large intestines, nephrons of the kidneys and skin all excrete and throw out waste products. Vata plays a vital and natural role in this respect. For example uria is a waste product to be thrown out of the body through kidneys, if it is accumulated and not turned out it may increase in large proportion causing a deadly situation called uraemia. Bile is to be excreted and turned out to the duodenum, but if its flow is

obstructed jaundice and even cholaemia may be produced. In all such dangerous situations the abnormal behaviour of vata has to be understood and treatment should be directed to correct vata and bring it to normal functioning. Thus the approach of an ayurvedic is from such an angle that is beyond conceivable limits to a modern therapist. Ayurveda envisages that food and drinks that a person, takes and the seven tissues rasa, rakta, mamsa, medas, asthi, majja and sukra do form excreta called malas. They all owe their existence to the normal activity of vata. In their formation too the role of vata can be well conceived. For example kesa and loma the hair as they are termed belong to mala class in ayurveda. Hairlessness or alopecia or baldness may therefore be due to some abnormal working of vata. Many hair lotions if they do not correct vata factor will do no good to the sufferer. Hair on the lips of the males is a mala of shukla dhatu. Hormonal disturbances make the lips hairless or moustacheless or beardless. So the significance of this passage giving interrelationship with vata and the excreta has an important role to play for those who want to know ayurveda in its entirety.

Sthulanusrotasam bhetta

Vata splits gross and subtle vessels or srotas. Chakrapani, considers this action of vata in the foetus Bhetta – karta, etacca sarirotpattikale Shri Haridutt Sastri has explained this passage more clearly in the following words – “Sthulanusrotasam bhetta iti sukrasonitasayogajasya skasya kosanukasya bahudha vibhagena parasparasamyojanena ca sthulsuksmanaam srotasam nirmanakrit”. Gangadhar calls it to be the building up of the throat and nostrils. Thus it is clear that this property of vata deals with embryological formations of channels big or small. Even in post natal

life after the injury and production of a wound its healing requires approach by various blood vessels to be formed. Here also splitting up of them from bigger to smaller and from smaller to subtler vessels or channels have to take place which is done by the normal vata. After the sukra and sonata meet and jeva is introduced the so formed fertilized ovum begins to multiply, the process is related to structural genes which has an operator segment and a regulator gene. The work of multiplication is done according to the species concerned. In this act vata according to ayurveda plays a definite role. If vata is defective, the embryo's development does not take place to its full stage. The garbhine carya mentioned in our classics for providing necessary ingredients of food to the pregnant lady have this stress in mind. The acaryas are keen to give instructions in explicit terms as to what has to be given in each month to keep up the tempo of normal vatic activity to its maximum level. This passage refers only to the formation of channels through which the nutrient material flows for proper transport to various centers of development. Formation and splitting up of channels is the divisive work of vata.

Conclusion

From what has been said above, the following facts about vayu are inferred:

1. It keeps up life intact.
2. It causes all the systems of the body and all viscera, solid or hollow to continue their normal activities.

Karta garbhakritenam

The formative work of vata is given in this passage. Vata starts forming the various viscera, shaping them according to a well cared development plan which continues from the moment of conceptive coitus, continues during foetal, life and goes on further throughout life. This passage limits itself to the formation of various parts during foetal life. Chakrapani Dutta has pointed – out “Garbhan iti vikritimapadayati atikalam dharayati iti anena ca sambadhyate, which means that if vata is not working normally inside the foetus congenital defects may crop up and undue delay in delivery may take place. So the subject of vata has as much importance at the time of the formation of foetus as it has at other times for which the last passage reads as under.

Ayusonuvrittipratyayabhuotah

Vata thus continues the life span. Gangadhara points out that the act of inspiration and expiration which is solely a vatic affair as long as it continues, the life remains continuous. The longevity is dependent upon the normal activity of vayu. When it becomes abnormal anything untoward may happen which may temporally or permanently damage a system or organ and can thereby cause premature death. This is general statement based on the narration given in the last 17 phrases.

3. The various divisions of vata which are located in the brain or nervous and form central as well autonomous nervous system are nothing but vata in its purest form.
4. All motor activities whether pro or against are done by vata.
5. All mental activities about which psychology speaks a lot are done by vata. Impulsion or inhibition of mental faculties are the acts of normal vata.
6. It allows normal activity of indriyas and makes them perform their allotted functions as such.
7. All the objects (arthas) of the indriyas are carried through by vata.
8. It causes cementing the parts to continue to have their definite shape and size and allows their development in normal manner.
9. It keeps the body as a whole, intact.
10. It is the cause of speech.
11. It is the causative factor behind touch and hearing.
12. The hearing apparatus and the touch or tactile apparatus are governed and made to work by it.
13. All digestive processes and metabolic activities are stimulated by it.
14. It absorbs and controls those factors which are responsible for the conclusion or accumulation of fluid inside the tissues intracellularly or extracellularly
15. Formation and passing off of the excreta are done by it.
16. In foetal life it forms bigger and smaller and subtler channels by splitting bigger ones to smaller ones and so on. The formation of channels later on in various parts as a part of healing or as abnormal pathology are done by it.
17. Formation of different foetal parts and the shaping of the individuals are done by it.
18. It makes the life to continue from conception to death.

Now what this factor vata or vayu can be according to modern physiology, for what is now recognized as modern physiology, should tell the same facts which ancient people found in their researches. If they are not identical, one of them must be wrong. We have to look into it, whether such a factor exists in a human body or that it is something hypothetical. We have to weigh all the facts before delivering judgments for or against it. Can we find any such thing in modern physiology which does all the 18 functions normally? It is believed that brain and nervous tissues are the carriers of vatika impulse but it does not explain the whole phenomenon.

I feel that fuller exploration of hormones is yet to be done by the modern physiologist and when it is complete it may be possible to explain the ayurvedic vata. We all have known that a nerve impulse is caused by hormonal play. The work of hormones to build up the body parts and the foetal parts and their fuller role in excretory and metabolic functions as well as regarding various stages of digestion are known. It is possible that there is some super hormone produced somewhere, about which work has to be done, which controls all those activities mentioned under vata above. Therefore, till all the physiological phenomena are fully studied, it is better not to compare ayurvedic vata with any one of the existing parameters and the people outside India who are eager to know ayurveda take these facts as they stand in the classics. Facts are facts whether expressed in Ayurvedic classics or modern texts and must be identical in all respects barring the language in which they are expressed and the approach that is adopted.