Vatavyadyi viz a viz neurological diseases in Ayurveda: aetiology, pathogenesis and clinical presentation.

Abstract

Vatavyadyi can simply be correlated with neurological disorders that are complicated in terms of diagnosis, management and prognosis. The diseases which manifest due to involvement of vata directly or indirectly may be grouped under neurological disorders in modern medicine point of view. These diseases are very difficult to understand because of which it need utmost care for the proper management. There are certain points described in “Madhavatsava” commentary on Madhavanidana to explain the nature of vatavyadyi as follows i.e., vatavyadyi are: (a) Very difficult to cure (b) Of acute in onset (c) Complex as well as critical (d) Some times needed emergency treatment (e) Often strong in nature (f) Need utmost care and specific therapies. Neurological disorders viz., vatavyadyi are very common in clinical practice, yet many physicians are uncomfortable with diagnosis and interpretation for these diseases in clinical practice. With the advancement in the medical field, various algorithms are presented as guide to diagnose and to manage these disorders for which clear-cut knowledge of the diseases is essential in terms of anatomical and pathophysiological point of view. Therefore being the key factor of these diseases, nature and function of vata both in healthy and diseased state should be analyzed to identify the actual picture of the disease in Ayurvedic context.

KEYWORDS: Vatavyadyi, neurological disorders

Introduction

Veda is the most ancient literature that is available in the world. In all four Vedas viz; Rigveda, Yajurveda, Samaveda, and Atharveda contains the knowledge of health, disease and their chikitsa. Especially, Atharveda contains great description of Ayurveda because of which it is called an upanga of Atharveda. In Atharveda we get the reference of “vati” which may be of vatavyadyi. In almost all literature of Ayurveda, vatavyadyi can be seen in detail under special category of Nanatmya vatavyadyi (Ca.Su.29.10). The following are the various references of vatavyadyi available in important Ayurvedic literature.

Sushruta samhita

Sushruta has explained the aetiological factors of vatavyadyi in general in 1st chapter of nidana (Su.Ni.1.60-63). The treatment of the disease has been dealt in detail in chapter five of chikitsasthana (Su.Ci.5.19).

Ashtanga samgraha

The common aetiological factors of vatavyadyi including pashchaghatha, signs and symptoms and prognosis have been described in 18th chapter of nidana (AS.Ni.15.42-43). Further the treatment of vatavyadyi has been dealt in 23rd chapter of chikitsasthana (AS.Ci.23.30). Ashtanga samgraha has followed the Sushruta Samhita.

Carakasamhita

Caraka has described vatavyadyi in detail including Nidana (aetiology) in general, which is common for all types of vatavyadyi, the specific Samprat (pathogenesis), Rasas (signs and symptoms), and Chikitsa (treatment) in the 28th chapter of chikitsa shastra. While enumerating the eighty-nanatmya s vatavyadyi, Caraka has included pashchaghatha also in this chapter. (Ca.Su.29.11). Further, Caraka has annotated the line of treatment of vatavyadyi in chapter 26th of chikitsasthana. (Ca.Ci.26.100).

Ashtanga vidyayasa asthma

Vagbhata once again has dealt with the general causative factors of vatavyadyi specific signs and symptoms and prognosis in 15th chapter of nidana. (AHS.Ni.15.41). The treatment has been given in the chapter 21 of chikitsasthana. (AHS.Ci.21.43-44). Ashtanga vidyayasa follows the Caraka samhita.

Madhavanidana

Madhavakara in 22nd chapter of his Madhava Nidana or “Rogavimshaya” deals with the general causative factors of vatavyadyi.
pathogenesis, signs and symptoms and prognosis of all types of vatavidhi including pakshghatana (Ma.Ni.22,43-47).

Pathophysiological Aspect of vayu

Physiological aspect
The human body comprises of three humors (doshas) namely Vata, Pitta and Kapha out of which vata is consider as the chief humor. Vata is one of three fundamental factors by which the human body is made and which is responsible for construction or destruction of the body. The equilibrium of these three dohas viz., vata, pitta, kapha results in good health and in imbalance in diseases. These three factors are known as Thridosha, Thrihatu, and Thrinma on the basis of their physiological functions and pathological states in the body. When they support the body they are called dhatu and when they become vitiated in the body they are called doshas when they results in pollution in the body they are called malas. (Sh.Pu.Kh.3.23). Among the three dohas, vata is the chief factor because it holds the proper functioning, of pitta, kapha, dhatu and mala. Asthanga sangraha of Vagbhata has mentioned that vata (Pavana) is the chief of all the good or bad of the world in its normal and abnormal states respectively. (AS.CI.15.01). Therefore vata is called Vishvakarma, Vishvatma, Vishvarupa, Vibhu, Vishnu, Pradapati, Srasta, Dhata, Mrutyu, Samharta and Antaka. Hence all efforts should be made to maintain its normalcy. (AS.CI.15.2-6.)

Properties of vata
Vata is composed of mixture of five bhutas with the predominance of vayu and akasha and other three bhutas viz., pruthvi, aap, toya are in minute forms. Ruksha (roughness or nonnourishing), laghu (lightness), shita (coldness), daruha (unsteadiness), khara (rough or coarseness), and vishadhan (non-slimness) are the important properties of vata (Ca.Su.12.4), and the drugs having opposite properties pacify vata. (Ca.Su.10). Of the three dohas, vayu is the most powerful in view of activating others and putting them to work, and further it is possessing rajoguna (activity), sukshma (subtle), shita (cold), rukska (dry), laghu (light in weight), chala (unsteadiness). These properties enable vata to move in the mahakaya (color), agnisthana (duodenum), koshata (alimentary tract), hridya (heart), khatu (throat), and sarveanga (the whole body) (Sh.Pu.Kh.28,325).

Vayu is self-bom and omnipotent because of independence, eternity, all pervasiveness. Vata has universal characters and is worshipped by entire world as vata is the cause of origin and destruction of all substances (Su.Ni.1.5-6). Vata is un-manifest but manifest by the actions, non-utensious, cold, rough, light, moving obliquely, having two properties (sound and touch) which predominance of rajas, having incomprehensible powers, carrier of dohas, distinguished in congregation of diseases, quick acting, frequently moving and situated in paksasaya (intestines) and guda (rectum) (Su.Ni.1.7-8). It is stated that vata is having yogavahit i.e. the medium which when associated with other dohas, project their qualities with out losing its own qualities. It bound in the fundamental qualities of rajas, i.e. principal in cohesion and action.

Functions of vata
Vayu is life, strength, and sustainer of the body. Vayu is the entire world. It is master of all (Ca.Ci.28.3). The person whose vayu is with unimpeded movements and in normal states live long for hundred years devoid of diseases (Ca.Ci.28.4). Caraka has mentioned that vata in its normal states, sustains all organs of the body, initiates all types of actions, restrains and impels the mental activities, coordinates all the sense faculties, and helps in enjoining in their objects. It brings about compactness in all the tissue elements of the body. It promotes speech, originates-touch sensation as well as sound. It is the responsible factor of auditory and tactile sense faculties. It is the causative factor of joy and courage. It stimulates the digestive power, absorbs the nutrients, expels out the excreta, creates channels of the body, and moulds the embryo. It is the indicative of life span. (Ca.Su.12.8). It can be understood by the above description that all the vital functions of the body is under control of normal functions of vata. Vata is having immense power to control and coordinate these functions.

The nervous system and nervous phenomenon nearly resemble with the functions of vata in the body. All types of sensory and motor functions of the body are under the control of nervous system. By the above description it can be concluded that vata is having following functions:

1. It is the force that governs the position; movement; orbit of the sun and moon.
the constellation and planetary system; in the same way vata that is present in the body govern all functions of the body.

2. It carries all sense impressions to the mind. (yantra-tantra dhara)

3. Vata course through the body is in self originated, subtle and all pervasive.

4. It is invisible by itself; it works are patent or manifest.

5. It is instantaneous in action and radiates through living beings in constant currents; it is non-sentiment.

6. It is the simulative force which keeps the kapha, pita, dhatu and mala in motion very much like the wind is the force that propels clouds from place to place in the sky.

7. Physiological functions of vata are ascribed as a biophysical force or a material entity or a complex of such entities.

8. Chief functions of vata are to induce enthusiasm, imparting motion to the body; inspiration and expiration; responsible for voluntary actions; i.e., walking and speaking etc.; conduction of different impulses from sensory organs exo-receptors; to maintain the circulation of respective rasadhi dhau in the body; excretion of waste products from the body; to regulate peristalsis of GIT; absorption and circulates the nutrients to the tissues; to evacuation of stools to perform motor activities of the body; regulation of natural urges, which can be voluntarily inhibited or provoked; regulation of the functions of the sensory organs.

9. Biological vayu is the force inside the body, self-generating and self-propagating energy that is responsible for the conduct, regulation and integration of all vital functions of the body.

10. It holds the body elements in proper form and maintains the integrity of the body as a whole.

11. It is potent stimulator to agni (digestive and metabolic forces).

12. If vata performs its normal physiological functions, he/she lives longer.

Classification of vata:
Sushruta says that vata which is actually pre, is divided according to names, locations, functions and diseases. (Su.Ni.1.12), Vayu is classified into five types viz, Prana, Vyana, Udana, Samana, and Apana vayu. Their different seats and normal functions have been described in almost all Ayurvedic classics. Sushruta emphasized that these five types of vayu when situated in an equilibrium sustain the body. (Su.Ni.1.12) Shringadatha also has mentioned above five divisions of vata. He mentions “Samskara” as synonym for vata. (Sh.Ru. Kh.3.28). All authors of Ayurvedic classics have classified the vayu in five principle divisions on the basis of their functions which are: pranavayu-parasparanda; udanavayu-udvaha; vyana-vayu-purana; samanavayu-vivechana; apanavayu-dhara (Ca.Su.15.4).

According to the names
According to the names vata is of five types i.e., prana, udana, samana, vyana and apana vayu. (AHS.Su.11.4).

Pranavayu
Charaka has stated that seat of pranavayu are mudra (head), thora (thorax), kanta (throat), hava (longue), alya (mouth) and nasa (nose). The opinion of Astangangravaya and Ashtanga samgraha are also the same. It supports the intellect, heart and mind along with other functions, i.e., salivary secretion (nibhavana), sneezing (kshavata), dejection (udgara), inspiration (ishvasa). According to Sushruta it carries food inwards and also sustains the prana, if vitiated produces diseases such as hiccup, dyspnoea etc. (Su.Ni.1.13).

Udanavayu
According to Charaka and Vagbhata the seat of udana vayu is urah (chest). It moves from kanta i.e., throat to nabh i.e., umbilicus according to Charaka; or from nasa i.e., nose to nabh according to Vagbhata. It is responsible for production of voice, prayahta, upp, bala, vama, smruh. Sushruta enumerated the functions of udanavayu as speaking and singing, when vitiated; it particularly causes supraclavicular diseases. (Su.Ni.1.14).

Samanavayu
This is responsible for regulation of digestion i.e., pachana kriya as it is accompanied with agni. It moves in the organ where ingested food is undergoing digestion.
After digestion it discriminates sarabhaga (nutrients) and kaphabhaga (waste products). When vitiated it causes gula, deficiency of agni and diarhoea etc. (Su.Ni.1.15).

Vyanavayu:
Both Charaka and Susruta say that vyanavayu moves all body over and impels circulation of rasa. It also causes sudation, haemorrhage, and five types of body movements, viz.; gati, prasrana, utakshipana, nimesha, umeshma. When it vitiated causes generalized diseases. (Su.Ni.1.17-16).

According to Vagbhata, vyanavayu is located in tridaya and performs and coordinates all voluntary functions.

Apanavayu:
Apanavayu is located in vrushhana, vasti, medra, nabh, unu, vankehana and gupta according to Charaka’s view (Ca.Ca.28.12-15). Susruta says the pakvasaya is the main seat of apanavayu (Su.Ni.1.19-20). Vagbhata has mentioned that strotas, vasti, medra, unu as seats of this variety of vata. The functions of this are mostly downwards i.e. expulsion of garbha (foetus), artava (menstrual discharge), shukra (semen), mutra (urine), and purisha (faeces). When apanavayu vitiated, causes severe diseases of urinary bladder and rectum (Su.Ni.1.26). When all five types of vayu get aggrivated simultaneously in a person, he may lead to death (Su.Ni.1.21).

According to the location:
Susruta enumerated a number of types of vata on the basis of their location i.e., amashayagata vata, pakvasayagata vata, indriyagata vata, twakgata vata, raktgata vata, mansagata vata, rucagnagata vata, saragata vata, saayugata vata, sarvagnagata vata, and many variety of avruta vata (Su.Ni.1.22-51). Further more, Susruta has outlined vastigtata vata, manyagata vata, sirshagata vata, (Su.Ca.4.3.9-10).

According to disease:
Sushruta (Su.Ca.4.3.8), apatanaka, dannapatana - ka, drasaktambha, abhyanrarayana, baharayama, pakshaghatha, apataranaka, manyaastambha, and most of the eighty types of vata diseases (Su.Ni.1), (BP.MK.4-18), (Ca.Su.20.11). It is quite evident from the above description of five types of vayu that the normal functioning of them, being in normal physiological sites and in equilibrium is perform their functions. When vata deranged in site, functions and when imbalanced affects the body with disorders and take away the life shortly. (Ca.Ca.28.12-14).

Seat of vata:
It is important to know the normal seats of vata because in abnormal conditions it may occupy some other places in the body and localised symptoms may arise. Pakvasaya (large intestine), kati (lumbar region), sakti (thighs), sota (ears), asti (bones), sparshamendriya (skin), are the normal seats of vata among which pakvasaya is the main seat. (AHS.Su.12.1).

Pathological aspects of vata:
When concerning the derangement of doshas, two types of derangements may occur viz; vuddhi and kahaya (AHS.Su.11.5-6).

Vata vuddhi (hyper functioning of vata):
Karshita (emaciation), karshya (blackish discolouration), ushnakamitva (affinity to hot), kampa (tremore), anaha (distinction of abdomen), shakrutroaha (constipation), balinindra-indriya-bhrit (loss of strength), pralpa (irrelevant speech), bhirama (giddiness) and dohata (limbidity), are manifested in vuddhi state of vata (AHS.Su.11.5-6).

Vata kshaya (hypo functioning of vata):
Vata karya is indicated by anagadhi (debility of the body), apabhritta (speak very little), sanjna nasha (loss of sensation), mana nasha (loss of consciousness), shishrutvaidhi, manda - chestra (very little physical activity), apabhritata (depression), prarapa (ex-salivation), aruchi (loss of appetite), hritlasa (irritations) and agnivasana in the body (AHS.Su.11.25).

Symptoms of vata when associated with ama i.e., samavaata are vibhandha, agnisada, tanda, nivrakusana, angavedana, angashya, angaphya, atuya, sthitya, gauraya, srigativya, aruchya, kelu-rakshah phalashya, arali and adhmunya. When we critically analyse the function of vata, they are all related to the function of nervous system, i.e., central as well as peripheral. These five types can also be correlated with the plexuses existing in the body and governing the regional functions as follows:
1. Prana vata- parasympathetic nerves participating in pulmonary plexus.
2. Udana vata- cardiac plexus-parasympathetic portion.
4. Vyana vata- motor nerves of the whole body.

According to medical science, entire functions of the body are governed by nervous system that is controlled by the brain. But, according to the ancient Indian concept, even the functions of brain are controlled by vata. Therefore, vata is a substance which controls the functions of the nervous system as well as of the brain. Therefore, vata may be the neuro-humors that regulates the functions of central as well as peripheral nervous system and can be measured as well with the help of scientific aids.

The Meaning of the term Vatavyadhī
Vatavyadhī means an extra-ordinary ("asadhīnena") diseases resulting from vitiation of vāyu alone. While commenting on vatavyadhī nidana (chapter-22), Vayuśravas has outlined in his commentary that, "vikruṭa vata janāto asadhīnena vyaṛdhī vatavyadhī illi" i.e., the extraordinary diseases which resulting from vata alone is vatavyadhī (Madukshśa on Ma.Ni.22). In case of vatavyadhī there are some specialities regarding their nidāna as well as chikīśa. All the three authors of Vrddhātraṇya have given a separate chapter for vatavyadhī and described the causative factors, pathogenesis, signs and symptoms, prognosis (sadīya asadhīyati), and treatment in detail under these chapters. On the other hand, we do not find any parallel description for pitta and kaphavyadhī in separate chapter. For this the authors have given following explanation that vata is the chief among tridoshā and the key factor of producing movement of other two doshas. Vāyu is quick acting (aṣṭhikā), very powerful (ātīkā), and therefore the diseases created by vāyu are serious (ganyastvāt vikarānam), they are difficult to cure (dusṣadāyastvāt); they are capable of throwing a person in to a serious condition within a short period of time (aṣṭi eva aṣṭikarāvat); and they require special type of treatment (vistīṣṭa chikīśastvāt) (Madukshśa on Ma.Ni.22).

Some of vatavyadhī manifested due to aggravation of function of vata e.g., akṣēpa (convulsions) while some others due to deprevation of function of vata e.g., pakṣēgāna (hemiplegia)

Excessive indulgence of different types of causative factors

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Vitiation of vata

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Functional abnormality of nervous system

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Vatakarma kṣaya (increase in neural function)
   (e.g. convulsions, tremors etc.)

Vatakarma vṛuddhi (decrease in neural function)
   (e.g. paralytic, anaesthesia etc.)

Production of different types of vatavyadhī (Neuropathies)
In all types of vatavyadh (nanatma vatavyadhi), the following characters are observed viz, rukskshya (roughness), shadha (coldness), laghuviha (lightness), vishadha (non-slimness), gati (motion), amrutatva (formless) and avastatva (instability). (Ca.Su.20). Further more, when vitiated vata enters the respective organs produce following actions i.e., sramna (separation), brahma (dislocation), vyusa (division), songha (attachment), khetra (tearing), sada (malaise), harsha (exhilaration), tanha (thirst), kampa (tremors), varta (circumvention), chala (looseness), taka (pressing pain), vyasa (pain) and chesta (movement). (Ca.Su.20). And also produce feelings of khara (coarseness), paruha (roughness), vishadha (non-slimness), ghrdha (constriction), saravarna (reddish lustre), feeling of astringent taste in mouth, vrisha (wheat) (tastelessness), sancha (wasting), shula (pain), supha (numbness), samkochhi (contraction), talimba (stiffness) and kharjata (limping). (Ca.Su.20).

Classification of Vatavyadhi:

Vatavyadhi can be classified in to following categories in different angles (Ajey K S, 2004).

1. Samayajya and Nanatma vatavyadhi:

Samayajya vyadhi originate by the vitiation of more than one dosha for e.g., pitta and kapha, vata and kapha, etc., whereas nanatma vyadhi develops due to the vitiation of only one dosha for e.g., brahma (vertigo), artha (facial paralysis), hanugraha (lock jaw) etc. There are eighty-nanatmaja vatavyadhi in Ayurveda including pakshathatha (Ca.Su.19.3; Ca.Su.20.11).

2. Vatavyadhi originating from koshtanga of the body.

Anaha (distention of abdomen), turi (renal colic), pratuni (ureteric colic), adhimana (generalised tympanits), pratniraddhi (glyceric tympanitis) and amashaya gata vata (acute gastric enteritis) etc., are the diseases of koshtanga.

3. Dusyagata vata vyadhi.

When the vitiated vata is localized to various dusya (dhatus and mallas) of the body produces the diseases relevant to particular dusyas such as raktgata vata (hypertension), mansagata vata (myopathy), medogata vata (muscle fatigue), astigata vata (rheumatism), majga gata vata (costomyelitis) and sukragata vata (sex neurosis).

4. Localised vatavyadhi:

These are produced by the local involvement of vitiated doshas such as saradgata vata (arthritis), siragata vata (engorge veins), khalati (cramps), kamavata (parkinsonism), guptarasa (sciatica), visach (brachial neuritis), abhada (frozen shoulder), krokhata shishra (pyogenic arthritis of knee), hanugraha (lock jaw), marya stambha (neck rigidity), jiva stambha (glossal palsy) and sira grha (trigeminal neuralgia).

5. Generalised vatavyadhi:

Here the vitiated vata produces a number of ailments involving a major part of the body, those are pakshavah (hom得了lalgia), artha, khanja (limping), pangu (lame of both legs), akshepaka (hysterical convulsions), apatanaka (telenus like convulsions) and shayogata vata (disease of tendons and ligaments).

6. Avaranajanya vatavyadhi.

The hypothesis of avarana is very important in case of vatavyadhi. When the vata is covered by vitiated other doshas i.e., pitta and kapha, vata (satta dhatu), or by malas (urinates), it is produced diseases which are called avarana janya vatavayadhi. Chaturaka has stated 42 such diseases, while Susruta has mentioned 10 types of avarana janya vatavyadhi respectively (Ca.Ci.28.201, Su.Ni.1.32-39).

7. On the basis of clinical features:

Further vatavyadhi may be classified into somatic and psychosomatic groups on the basis of the different clinical features. They are;

- Painful neuropathies: Here the cardinal symptom is pain. According to Ayurvedic texts there are a number of diseases that produce pain and they are turi (renal colic), pratuni (ureteric colic), gudhartri (sciatica), sandhigata vata (arthrosis), vata khranta (ankle sprain), visach (brachial neuritis), and siragraha (trigeminal neuralgia).

- Convulsive neuropathies: Some vatavyadhi are essentially associated with convulsions, for example, yogata (tremors), kamavata (parkinson's disease), apatanaka (telenus like convulsions), apatanaka (hysterical convulsions), and akshapaka (convulsions).
Degenerative neuropathies associated with myopathies: *Khajavata* (localised myopathy), *sarvangā vata* (generalized myopathies), *ardhanga vata* (hemiplegic myopathy) and *adharanga vata* (paraplegic myopathy) are the examples in this category of *vata* diseases.

Visceral neuropathies: These are the diseases which manifest in association with internal organs for examples, *adhimana*, *prātyahādana*, *mukha* (aphasia), *minmāna* (rhinophonia), *gajgada* (dysarthria), *amahashya* *vata*, *pakvanah* *vata* (irritable bowel syndrome), *anaha*, *ashtti* (enlargement of the prostate) and *prātyaśītha* (rectovesical tumors).

Paralytic neuropathies: These types of *vatavyadhi* are mainly consisting of *pakshagārtha* (hemiplegia) and *Avaita* (facial paralysis).

**Nidana of Vatavyadhi** (Causative Factors):

In Ayurvedic classics the word *nidana* carries two meanings viz. causative factors and diagnosis. It is very important to know the cause of a disease, because in many diseases where the cause is known, the treatment will be very easy. In this light the *chikitsa* has been defined as "*sannipsopāna kriyayoga nidana parvarjanam.*" (Su. Su.1.25).

The causative factors mentioned in Ayurveda may be classified into many types. But for more convenience, the causes may be mainly divided into two groups viz. general and specific. In some diseases general causes have been described, in some others specific causes and in some other diseases both general and specific causes are given by different Ayurvedics. In case of *vatavyadhi* the description of causes is under general category.

Under such circumstances we have to consider the general causative factors to understand how some of them can be responsible for the causation of this disease. Several causative factors have been mentioned in Ayurvedic texts.

**Carakasamhitā**
The causative factors which have been mentioned in *Carakasamhitā* are; regular intake of rough, cold, light and light food, excessive coitus and vigil, faulty therapeutic measures, excessive elimination of impurities and blood, excessive movements such as leaping, jumping and wayfaring, over physical exertion, wasting of *thatus*, excessive emaciation, uncomfortable bed and seat, anger, fear, regular sleeping in day time, suppression of urges, *amarksha*, injury, fasting, injury to vital parts, falling down from elephants, horses, camels, and other fast running vehiclas (Ca. Ca.28, 15-18).

**Sushrutasamhitā**:
Sushruta has preferred to discuss the entire physiology and pathophysiology of *vata* in the very beginning chapter of *nidana* dealing with *vata vyadhi*. Sushruta has not mentioned common causative factors that are responsible for vitiation of *vata* resulting *vatavyadhi* in *nidana-sthana* of his text. He has outlined five types of *vata* and the signs and symptoms that produce it vitiated them. He has mentioned only the common *samapanti* or pathogenesis of the diseases of *vata* due to vitiated *vata*, in *nidana-sthana* (Su. Ni. 1). In the *sutrasthāna* of *Sushruta samhitā*, it has been mentioned the eighty types of *nidanāvata* *vata* *vyadhi*, their common characteristics and the organ specific actions if the vitiated *vata* enters the specific organ, apart from that there is no mention about *nidana* of *vatavyadhi* (Ca. Su. 20).

**Astangahrdadayā and Ashtangasangraha**
Vagbhata has followed *Charaka* in case of *nidana* of *vatavyadhi* in *nidana-sthana* of his texts. In the *Astanga Hrdaya*, he has narrated the same *vata* *vyadhi* *nidana* which has been mentioned in twenty eighth chapter of *chikitsasthana* (AHS. Ni. 15). Further he added that *vata* get aggravated by over indulgence of food and activities causing loss of tissue (*chatokshaya*). *Bali* (vata) then fills the empty channels and moves greatly more than normal inside them or by getting enveloped (avanana) by other doshas which have already filled up the channels (AHS. Su. 15.5-6). It is said that all diseases are caused by suppression of natural urges. Vagbhata says that the urges of *thātus*, feces, urine, sneezing, thirst, hunger, sleep, cough, breathing on exertion, yawning, vomiting and semen should not be suppressed by force (AHS. Su. 4.2). He who is willing of happiness in his life, he should control the urges of greed, envy, hatred, jealousy, love and keep control on his sense organs (AHS.Su. 4.24).
The above said causes can also be classified into three groups which are mentioned as below: viz., causes for dhatukshaya, causes for margavarana and causes for both dhatukshaya and margavarana (Ca.Ca.28.59-60; AHS.Ni.15.7-9).

Samprapti (Pathogenesis):
Samprapti is the phenomenon of production of a disease comprising of the process of vitiation of the doshas, their spread all over the body, their location at morbid sites, involvement of local tissues (dhatus and dusya) and manifestation of signs and symptoms of a particular disease (M.Ni.1.10). Samprapti encompasses entire spectrum of bodily changes both in clinical and subclinical stages of disease process. Generally Ayurvedic term samprapti compares to the English term ‘pathogenesis’. According to Vagbhata, vitiation of doshas due to their respective causes, the spread of vitiated doshas throughout the body and then the manifestation of the disease is called samprapti; Jati and Agati are its synonymous (AHS.Ni.1.8).

The vitiated dosha when find a suitable defective part or organ of the body, localise and stagnate and, as such find an opportunity to interact with the local tissues or dhatus and also known as dusya. The dosa dusya sampramitana (interaction) is the actual disease process. This interaction leads to develop a special set of clinical manifestations that are the joint product of vitiated dosa, vitiated dusya and the vitiated site or organ (adhisthata) involved.

According to Charaka, the samprapti is of six types viz., sankhya, prechnayana, vidhi, vikapa, bala and kala. Vagbhata has included vidhi samprapti under sankhya samprapti itself (M.Ni.1.11). For the convenience, samprapti can be divided into two types viz., samanya and vishesha samprapti (specific and non-specific). Samanya samprapti occurs at the stage of utsanasamshaya stage while during vyakti stage vishesita samprapti occurs.

General Samprapti of Vatavyadhi:
According to Charaka, vata become vitiated due to over indulgence of causative factors and depletion of tissues (dhatus) that lead to the deficiency (rikata or empty space) in the contents of the srotas. The vitiated vayu, fills up the empty channels and produces the different types of vatavyadhi depending upon the involvement of these srotas and the part of the body affected (Ca.Ca.28.1; AHV.Ni.15.8; BPV.Ni.24.3). All the aggravating factors of vata may be divided into two main types depending upon their causative factors namely, factors of depletion of dhatu (tissues) and factors that lead to obstruction in the channels or srotasmi (dhatukshaya and margavarana). (Ca.Ca.28.59).

Vitiated vayu due to dhatu kshaya, occupy in the empty channels and produce to increase the function of channels. Here the effects that produce by vata alone are very powerful in the process of samprapti. On the other hand, vata get enveloped (avarana) by the other doshas that are already accumulated in the channels, which produce loss of function of the channels. Here the association of vata with one or more other doshas is not so powerful when comparing to that produce by vata alone in the disease process.

Samprapti due to Dhatukshaya:
Excessive indulgence of diet having profusely ruksha and laghu qualities, langhana (fasting or regular taking of less nutritious diet), excessive sexual intercourse and awakening in the night etc., lead to the depletion of body tissues and give rise to vitiation of vata. In the case of vata vyadhi produced by dhatukshaya, the deficiency of the contents of srotas (rikata) occurs. The vitiated vata then fills up these empty srotas and results in the manifestation of different diseases depending upon the part or organ of the body involved.

Samprapti due to margavarana:
Margavarana means the obstruction of the channels (srotas) by vitiated vata that associated with other doshas by any means. Here, partial or complete obstruction may occur and lead to creation of rikitata in the srotas beyond the site of obstruction, and in this way vitiated vayu involves the parts supplied by these affected channels. Sangha type of srotodushki occurs in such cases. Hence, vatavyadhi may be produced either by dhatukshaya or margavarana. It is very important to know whether pakshaghanaha is due to dhatukshaya or margavarana because the treatment of these two varieties are entirely different.
Samprapti ghataka:
There are several factors that are responsible for the pathogenesis of any disease. These are known as samprapti ghataka i.e., component of samprapti. Therefore, their assessment has to be done in relation to vatavyadhi in general.

- Dosa-vata vriddhi, pitta and kapha kshaya
- Dushya-rasa, rakta, manasa, aati, sira, snayu
- Agni-yatarami, dhatvagni
- Ama-jatarami janya ama, dhatvagni janya ama
- Srotas-rasavaha, raktavaha, manasvaha, astivaha, vatavaha srotas
- Srototthusti-atpravritti, sangha, nigrahriti, vimarggamandita
- Udabha stana-pakrashaya, sirah
- Sanchara stana-rasayam, vatavaha sira
- Vyaktta stana-affected body parts according to the disease; neck, shoulder, arm, hand (half of the body)
- Adhisthana-sira, snayu, dharmam
- Roga marga-all three R.M, but mainly madhyama
- Swarupa-ashtika, chitraka
- Swabhava-rochana sadhya, asadhya

Purvarupa of Vatavyadhi (Premonitory symptoms):
According to Ayurveda, clinical features of a disease are divided into two parts i.e., PurvaRupa and Rupa. It is supposed that in the initial stage with the localisation of doshas in a particular area, part of the body some symptoms are developed. These are known as purvarupa (premonitory signs and symptoms) and later on when the disease is fully established, there will be full clinical manifestation. This is known as rupa (signs and symptoms) of the disease. The symptoms in the purvarupa stage may be partly due to the early lesion and other symptoms may be because of the initial body reaction to the new situation; it may be compared with the concept of adaptive mechanism. The features arising out of the adaptive mechanism are known as purvarupa that is of two types samanya and vishüita purvarupa.

There are no specific prodromal symptoms or signs mentioned in any main Ayurveda texts related to vatavyadhi. Before the clear manifestation of the disease some symptoms usually occur which are called purvarupa of the disease. (Ca.Ni.1.81). The premonitory symptoms are usually exhibited during the sthanasamsraya stage of the disease (Madukosh on MN.22.5). They are important for the diagnosis and treatment of the disease at this stage and from Susruta's point of view the sthanasamsraya is the fourth kriyaka and if treated promptly the patient may be saved from the further damage or prevent from further pathogenesis of the disease.

According to some other Ayurvedic texts, Auyakta-lakshana or unmanifested signs and symptoms are called purvarupa (Ca.Ca.28.15; Y.R.V.9). Chakrapani, while commenting on the word 'ayakta', mentions that few mild symptoms are to be taken as the meaning (Ca.Ca.11.12). Vaghbata has also used the word ayakta while dealing with the Purvarupa in general (AHS.Ni.1.4). Vajrayanksha, the commentator of Madhava nidanam gives very clear meaning on the term Ayakta, i.e., the symptoms that not exhibit clearly are called purvarupa and they are very less or mild symptoms due to (i) Less severe causative factors, and (ii) Less avarana of dosha (Madukosh on MN.22.5).

Rupa (General Symptoms of Vatavyadhi):
The characteristic signs and symptoms of a disease are called Rupa that may be the more clear manifestation of purvarupa itself and they also are called Almenupa. (Ca.Ca.28.15; Y.R.V.81). Aypay means laghuta or lightness or feeling of well being as the result of alleviation of disease. Vajrayanksha said that symptoms presence in any slight degree and not total alleviation of disease is called aypay. Further, he says that aypay means occasional absence of the symptoms while laghuta means lightness of the body due to wasting of all dhatus being done by vata. Aypay and laghuta are atmarupa (cardinal features) of vatavyadhi.

According to Caraka, the characteristic manifestations that develop during the course of the disease are called lakshana or rupa of the disease (signs and symptoms). Akriti, chinta, samsthana, and vyayana are the synonyms. (Chi Ni.1/9). Lakshana are produced in the fifth kriyaka of the pathogenesis that is known as vyakti. Depending upon the causative factors dosha dusiya and srotas involved, a particular type of vatavyadhi may develop, showing its own signs and symptoms. According to some eminent
scholars of Ayurveda, all eight types of vata vyadhis can be classified under five main headings viz.,

(i) Akasamnya pradthana vata vyadhi,
(ii) Kampa pradthana vata vyadhi,
(iii) Shula pradthana vata vyadhi,
(iv) Snitha pradthana vata vyadhi,
(v) Sambha pradthana vata vyadhi.

Pranavata produces disturbances of consciousness, intelligence, memory, emotions, delusion, hallucination, orientation of place and time, sleep and dreams, difficulty in swallowing, sneezing, coughing and respiration etc. Udvanvata is responsible for abnormality in speech (aphasia or dysarthria). Samanavata makes disturbances in the gastrointestinal system (constipation, flatulence, indigestion). Vyana vata creates difficulty in the movement of the limbs, convulsions, exaggerated jerks, and involvement in the movement of eyes. Apanavata loses the control of the sphincters i.e., of urinary bladder and the rectum.

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