A Review

◆ Vatavyadhi
◆ Sandhigata Vata
◆ Drug
◆ Previous Work Done
**VATAVYADHI**

The term ‘vatavyadhi’ is a compound form. It may be interpreted in two different ways as follows,

1) Vatavyadhi, i.e. itself is the disease. By implication, the aggravated vayu itself after afflicting the concerned dushya (tissue elements) pervades the entire body or a part of it to give rise to different types of pain for which the ailment is called vatavyadhi (vata disease) and

2) Vatavyadhi or the disease caused by vayu. By implication, other dosha and dushya (tissue elements) are vitiated in a special way by vayu to produce diseases in the entire body or in a part of it which is called vatavyadhi (vata-disease).

**Vatavyadhi-asadharana janita vyadhi**

In the disease pathogenesis, the diseases purely caused by vata dosha are called vatavyadhi.

Charakacharya and other granthakaras have classified vyadhi in two types:

1) Samanyaja vyadhi
2) Nanatmaja vyadhi

Those which are caused by one of the three dosha (vata, pitta, kapha) or by alignment or association of these dosha, these diseases are called as samanyaja vyadhi. That’s why in these kinds of diseases, in their lakshana samucchaya (clinical features) or in their samprapti (pathogenesis), different dosha and related symptoms can be seen other than the causative dosha for the disease, e.g. jvara, atisara, rajayakshama etc.

Nanatmaja vyadhi are by rule caused by only single dosha (either vata, pitta or kapha). These kinds of diseases never formed by combination of two or three types of dosha. e.g. kampa, akshepaka, pakshaghata, ardita etc. are caused purely by vata dosha, raktaj vikara etc. are purely caused by pitta dosha and gurugatrata are purely caused by kapha dosha. These kinds of diseases are called as nanatmaja vyadhi.

Vata dosha is very strong, acute in nature that’s why the diseases caused by vata dosha are balavana (strong), kashtasadhya (difficult in the treatment) and are fatal. The treatment of these diseases is thus typical and not like the treatment of pitta and kapha dosha.
The importance and clinical significance of vata dosha (vayu) is described by charakacharya in detail in charaka sutrasthana in vatakalakaleya adhyaya. vagbhata in his nidanasthana has mentioned about vata in detail

charakacharya in chikitsasthana has mentioned importance of vayu

Vayu is the elan vitae, vayu is the strength, vayu is the sustainer of the body of living beings, vayu is all- pervasive and vayu is reputed as the controller of everything in the universe. If in a person, vayu moves unhindered, it is located in its own site and it is in its natural state, then he lives for more than hundred years free from any disease.

Qualities of vayu:

According to Vagbhatacharya, vayu is sukshma, chala, sheeta etc.

According to Sushruta, vayu is avyakta, sheeta, laghu, ashukari muhushari etc.

Another quality of vayu dosha is, it is yogavahi.

According to Ayurveda places of vayu in the body are pakvashaya, kati, sakthi, shrotrasthi, sparshanendriya. The main place of vayu is pakvashaya.

Five divisions of vayu with its five-fold divisions, viz., prana, apana, vyana, udana, samana vayu appropriately controls (sustains) the functions of the body by its unimpaired movement in the locations concerned.

Prana-udana

These two, having opposite movements, are taken together. Generally speaking the movement of Prana is from the outside to the inside. Prana is responsible for receiving substances like air, water, food and impressions through the five sense organs from outside the world.

The movement of udana is from the inside to the outside, mainly through exhalation. Substances received by the stomach, in fluid or solid form, if rendered very fine during the conversion of the food, are eliminated through expiration. Speech is also due to udana Remembrance is the bringing out of the knowledge that has been received by Prana. Thus prana is responsible for intake, udana for output.
Vyana-samana

These two types of vata also have opposite propulsion. vyana is responsible for propulsion from center to periphery. The movement of the heart in pushing nutritive substances to the periphery is the function of vyana. It is also responsible for various movements of the limbs and the flow of blood and sweat. Vyana carries different impulses from the sense organs to the brain.

Samana, on the other hand, is the propulsive force from the periphery to the center. Efferent impulses in the nerves, bringing all the fluid pushed out by vyana back to the center and promoting all fluids into the lumen, is the function of samana. Thus the action of samana is the central pull action opposite the outward push of vyana.

Apana

In contrast to the above two pairs, the function of apana is to control the movements of constituents like urine, feces, flatus, menstrual discharge, seminal discharge and the discharge of the fetus. All these are controlled for a particular period of time before discharging from the body. The overall control of all these substances for a particular period is beneficial to building or maintaining the tissues. Since this control is beneficial in the other types of vata, it is said that apana controls all the forms of vata.

Properties & functions of vayu

As the principle of propulsion, vata carries out many diverse functions in the human body. It controls cell arrangement and division, the formation of different tissue layers, and the different ions of organs and systems. It conducts impulses like those from the brain to the motor organs. Controls the expulsion of feces, urine, sweat, menstrual fluid, semen, and the fetus. It also controls respiratory, cardiac and gastro-intestinal movements as well as all higher functions in the brain and spinal cord. Vata controls the mind and gives the energy to perform all bodily and mental activities.

Functions of impaired vayu

When the five kinds of vayu get located in a place, which is different from their own and when impaired, they afflict the body with diseases specific to their locations and functions. This may also lead to instantaneous death.
Etiology of ailments caused by:

Vayu gets aggrevated by the following:

1) Intake of unctuous, cold, scanty and light food;
2) Excessive sexual indulgence;
3) Remaining awake at night in excess;
4) Inappropriate therapeutic measures;
5) Administration of therapies which cause excessive elimination of dosha (including stool) and blood;
6) Keeping fast in excess;
7) Swimming in excess;
8) Restoring to wayfaring, exercise and other physical activities in excess;
9) Loss of dhatu;
10) Excessive emaciation because of worry, grief and affliction by diseases;
11) Sleeping over uncomfortable beds and sitting over uncomfortable seats;
12) Anger, sleep during day time, fear and suppression of natural urges;
13) Formation of aama (product of improper digestion and metabolism),
14) Suffering from trauma and abstention from food;
15) Injuries to marma (vital parts in the body); and
16) Riding over an elephant, camel, horse or fast moving vehicles and falling down from the seats on these animals and vehicles.

Because of the above mentioned factors, the aggravated vayu, while filling up the channels of circulation which are empty or have become weak in quality because of the lack of unctuousness, etc., produces different kinds of ailments affecting the whole body or apart thereof.

Ayurveda sees the imbalance of the three dosha of vata, pitta & kapha as the immediate cause of all diseases. The three dosha are damaged or vitiated by disharmonious diet, behavior and life style which result in the imbalance that initiates the pathological changes which constitutes the disease process. In Ayurveda, the etiology of disease has been described in two broad categories; general factors common to all diseases and specific factors behind particular diseases. A third factor behind disease is recognized in the natural effect of time and the aging process.
Pathogenesis of vyadhi:

Our bodies are conditioned to adapt within certain limits to variations in the environment and to the stress to which they are subjected. It is only when the stress exceeds these limits that a disease process begins. Ayurveda divides the disease process into the six stages of the disease or the six time of treatment, as these stages determine the nature of the therapies we use to prevent the disease from developing further. These six stages of disease and treatment are:

1) The stage of “Accumulation” (sanchaya) of the dosha at their sites in body.
2) The stage of “Provocation” (prakopa) of the dosha when they develop proneness to spread.
3) The stage of the actual “Spread” (prasara) of the dosha throughout the body.
4) The stage of “Relocation” (sthana-sansharya) where in the interaction of the dosha with the tissues (dhatu) takes place along with and their deposition in various parts of the body. In this stage the prodromal symptoms of a disease appear.
5) The stage of their “Manifestation” (vyakti) of the appearance of the characteristic signs and symptom of the disease.
6) The stage of “Differentiation” (bheda) of the arising of complications or the occurrence of recovery, terminating cure, disability or death.

The first three stages -accumulation, provocation and spread (sanchaya, prakopa and prasara)- constitute the abnormalities of the dosha which relate more to systemic and functional derangements than particular diseases.

The next three stages-relocation, manifestation, and differentiation (sthana-sansharya, vyakti and bheda) relate to the actual manifestation of the disease and organic changes occurring in the tissues and various organs of the body. The earlier the physician checks the process of the development of the disease better. The specific signs and symptoms of the vitiated dosha in various stages of accumulation, provocation and spread are clearly described. The physician is expected to identify the stage of a particular dosha is passing through so that he may be able to prevent further development of the disease process.

In the relocation phase (sthana-sansharya) the vitiated dosha combine with dushya, the damageable factors or bodily tissues and vitiate them. This is called “the
coming together of the disease causing factors and the sites of the disease" (dosha-dushya samurchana). The spread of the dosha to the tissues takes place through the channel systems like the blood vessels, lymph vessels and cellular spaces.

At some level, in the beginning or during the process of pathogenesis, the agni or digestive power, metabolism and assimilation is impaired and a new unwanted product is produced. This toxic accumulation of poor digestion is called “aama”. Aama may be produced at any level of digestion, intermediary metabolism or at the end stages when body tissues are formed. Thus there are five factors of pathogenesis.

- The vitiated dosha
- The damaged tissue (dushya) and the interaction of the dosha with these sites that they vitiate.
- The movement of the dosha into the body channel through which nutrient material and waste matter or metabolic by-product normally flow.
- Influence on agni the digestive juices, enzyme and hormones.
- The formation of aama or impaired and unwanted products of digestion and metabolism.

Knowledge of the pathogenic process is important because it allows us to break or check the spread of vitiated dosha from the beginning, from the stage of accumulation or before the disease manifest itself. When the disease is established, such knowledge helps us to cure the disease or gain the relief before it become chronic and complication starts. If the disease is already chronic, its purpose is to move the disability caused by the disease or to allow for rehabilitation.

**Pathophysiology of vatika diseases**

In all the type of diseases enumerated or implied, the inherent natural qualities and actions of vata are quite obviously manifested wholly or partially and as such it is not difficult for a competent physician to correctly diagnose the vatika type of diseases; e.g. roughness, coolness, lightness, non-sliminess, movement, shapelessness, unstability these are the inherent qualities of vata.

The natural action of vata moving from one part of the body to the other are looseness, dislocation, excitation, thirst, trembling, circular movement, motion piercing pain, aching pain, action etc.coarseness, harshness, non-sliminess, porousness, reddishness, astringent taste and tastelessness in the mouth, wasting, pain, numbness, contraction, rigidity and lameness, etc. are the actions that help a competent physician to diagnose the vatika type of diseases.
Vayu gets aggravated in two different ways,

1) By dhatukshaya (by the diminution of tissue elements) and
2) By margavarodha (by the occlusion of its channel of circulation)

In the body of the individual, vata, pitta and kapha move all the channels of circulation. Amongst them, vayu, because of its subtle nature impels the remaining two dosha, (viz. pitta and kapha). The aggravated vayu having provoked these two dosha gets them scattered into different places of the body and obstructs the channels of circulation leading to the manifestation of various diseases and drying up of tissues elements like rasa (plasma), etc.

Vayu, as described above, gets aggravated in two different ways, viz. 1) by the diminution of the tissue elements which provide nourishment (sara) to the body and 2) by the occlusion of the channels of circulation. Because of this occlusion or obstruction, the speed of the movement of vayu gets arrested which leads to its aggravation.

The entire dosha move through the channels of the body. But vayu has a specific property as it can move even through the subtle channels in the body. Thus among the three dosha, vayu is the most powerful one. Therefore, the aggravated vayu even though occluded by pitta and kapha, has the power to get the other two dosha scattered into different parts of the body to cause diseases. This aggravated vayu, though occluded may also dry up rasa etc.

**Signs and Symptoms of vatika diseases**

Aggravation of vayu gives rise to the following signs and symptoms:

1) Contraction, stiffness of joints and pain in the bones as well as joints;
2) Horrification, delirium and spasticity of hands, back as well as head;
3) Lameness of hands and feet, and hunchback;
4) Atrophy of limbs and insomnia
5) Destruction of fetus, semen and menses;
6) Twitching sensation and numbness in the body;
7) Shrinking of the head, nose, eyes, clavicle region and neck;
8) Splitting pain, pricking pain, excruciating pain, convulsions, unconsciousness and prostration

9) Similar other signs and symptoms

The aggravated vayu produces specific diseases because of the specific nature of the causative factors and the seats of manifestation.

**General principles of treatment of vataka diseases:**

The vitiated vata should be treated by drugs having sweet, sour, saline taste and unctuous and hot qualities and by such devices as oleation, fomentation, asthapanam and anuvatasana types of enema, inhalation, diet, massage, uction, affusion which should all contain materials having anti vataka properties. This is of course to be done with due regard to the dosage and the season. Of all the devices stated, the asthapanam and anuvatasana types of enema or the treatment par excellence for the cure of vataka diseases because immediately after entering the colon, they strike at the very root of the vitiated vata and when it is overcome in the colon, even the entire vitiated vata dwelling in other parts of the body is automatically alleviated. This can be linked to cutting of the root of a tree which results in the automatic destruction of the trunk, branches, sprouts, flowers, fruits, leaves, etc.

Ghee, oil, muscle fat, marrow, fomentation, massage, medicated enema, fomentation accompanied with oleation, residence in windless place, covering the body with blankets, meat-soup, different types of milk, food ingredients which are sweet, sour and saline, and such other measures which are nourishing- all these are beneficial for the patient suffering from diseases caused by the aggravated vayu.

The entire body is in fact the abode of all the three dosha viz. vata, pita, and kapha and as such these dosha bring about good and bad results according as they are in normal and abnormal states respectively. When in normal state, they bring about good results like growth, strength, complexion, happiness, etc. When, is in abnormal state, they cause various types of diseases.

Endogenous diseases again are of two types viz diseases caused by the vitiation of vata, pitta and kapha in general and the specific diseases caused by the vitiation of the vata, pitta and kapha. Diseases caused by vata are of eighty types, those by pitta of forty types and those of kapha of twenty types.
DISEASE REVIEW

HISTORICAL ASPECT OF SANDHIGATA VATA:
All the historical aspect related to this work is mentioned under this heading.

Veda Kala:
Rigveda
In this five type of Vata is considered as Pancha prana. One of the Mantras of Rigvedas described about removing the disease from each organ (hairs and joints)

Atharvaveda
In Atharvaveda, there are references about the disease pertaining to Sandhi and Sandhi vishlesha.

Purana Kala:
Ramayana
In this treatise, importance of Vayu in maintenance of health and life is mentioned. There is also explanation about the pathological effect caused by the Vayu such as Pain and immobility of Joints.

Mahabharatha
In this treatise, Vata has been given important and it is called as Panchakarma (having 5 functions) and Bhagavan.

Agnipurana:
In Agnipurana total number of joints in human body and treatments of sandhigata Samavata is mentioned.

Upanishat kala:
Elaborate description of vata is available in the Upanishats.

Kenopanishat:
In this book, vayu is defined as the one that has constant movement, motion and continued efforts.

Chandogyopnishat:
This book has highlighted the chala property of vata and has shown its close association with bodily actions and movement.
**Samhita kala:**

**Charaka samhita**

Charaka mentions Sandhigata vata roga in the chapter Vatavyadhi chikitsa. He names the disease as Sandhigata anila. He explains this disease with Dhatugata anil vikaras and not mentioned in Nanatamjavatavikara. A separate nidana or the treatment principles are not found in the text.

**Sushruta Samhita**

Sushruta mentions general nidana in Nidana sthana (vata vyadhi nidana) and separate treatment principles mentioned in Chikitsa sthana (Vatavyadhi chikitsa).

**Bhela Samhita**

There is no clear description is available about Sandhigata vata. But Ashtimajjagata vata, Sadhivichyutiis explained as one of the lakshana.

**Harita Samhitha**

Acharya Harita explains that there are 84 Vataja nanatmaja vikaras. Among these, 32 are Vyana vata prakopaja vikaras. He also mentions that all the dhatugata vata vikaras are due to Vyana vata prakopa and further tells about the treatment aspect of Sandhigata vata. He also makes the mention of 'Sandhi shotha'in Shukragatavata.

**Sangraha kala:**

**Ashtanga Sangraha and Ashtanga Hrudaya**

The disease is described with treatment.

**Madhava Nidana**

Acharya Madhavakara agrees with Acharya Charaka with respect to Nidana and Acharya Sushrutha with respect to lakshanas, except for the term Atopa which he uses instead of Shopha.

**Bhavaprakasha**

Bhavamishra follows Acharya Sushruta while describing the disease and its management which he discusses in vatavyadhi chapter of Madhyaama Khandha.

**Chakradatta**

Chakrapani Datta gives the same views as Sushruta in treatment aspects of this Disease.
Bhaishajya ratnavali
The treatment aspect of this disease is mentioned.

Yogaratnakara
He has given the same views as of Charaka and Sushruta but separate treatment principles are mentioned.

Basavarjeeyam
Vaidya Basavaraja explains this disease as Sandhi Vata. He gives different lakshanas of this disease but agrees on nidana mentioned by Charaka. He explains about the sandhivatari rasa.

Sutra Kala:
Bramhana sutra:
This text has given importance to Vyana vata. While explaining the movements of joints it is said that vyami vata is the one, which resides in the joints and performs all the movements.

Panini sutra:
Panini was well aware of vata, its kopa and shamana. He has mentioned the vatiki to denote disorders of vata.

TERMINOLOGY OF SANDHIGATA VATA
The term sandhigatavata is a combination of two words i.e,
1. Sandhi
2. Gata vata
Sandhi:
The word sandhi is formed by the combination of the sam+dha+khi

In Amarkosha, we get the meaning of the sandhi as slesha which means union Or combination.

Sandhi is considered as union of two structures. Charaka mentions that sandhi the samyoga sthana of the two asthis. The asthi sandhis are only considered as the sandhis and the union of peshi, snayu and siras are not considered.

It is the moola sthana of majjavaha srotas and also considered as one of the Madhyama roga marga. There are 210 sandhis are present in our body.
Concept of Gata Vata
Gata vata is further comprised of two words Gata and Vata

Gata
Here the word gata denotes the state of vata. In with covering, reaching, pervading are the meanings of gata.

Vata
Among three doshas, Vata is given importance. The word Vata originated from the root "Va Gati Gandhanayo" which when suffixed by 'Ktan', gives rise to the word Vata.
There are five types of Vata, ie Prana, Udana, Samana, Vyana, Apana. They are having the separate functions like, Purana, Udwahana, Viveka (rasa mootra pruthakkarana), Praspandana and Dharana.
Vyana vata has been given the karma in different treatises such as
Praspandana (Sushruta)
Shareera chalana (Dalhana)
Gati, Apakshepana, Uthkshepa (Vagbhata)
Sandhicharitha (Dalhanana)
Vahana (Rasa samvahana)
Pancha cheshta. [Prasarana, Akunchana, Unnamana, Vinamana, Tiryakgamana]
Pancha cheshta [Gati, Prasarana, Utkshepa, Nimesha, Unmesha]

Although these functions said to be done by vyana vata, it can be seen in other places also. Praspandana karma can be seen in prana vata during shwasa prashwasa kriya. By the above reference we infer that any act of praspandana etc. function happen only with the coordinated union of all the types of vayu. To maintain the coordinated union of vayu, Vahana is important which is performed by vyanavata.

In Ayurvedic literatures, Sthita, Milita, Gata are to be considered as synonymous words.
The pathogenesis of Gatavata can be occurs in two ways
Margavarana janya - due to margavarana there will be srotorodha which leads to shoshana of dhatus and also vitiation of vata. The vitiated vata situates the srotas which became rikta by shoshana of dhatu.
Dhatu kshaya janya - the rikta dhatuvaha srotas will be filled by the vitiated vata.
In Hareeta samhita, Hareeta explains all the Dhatugata conditions are explained under the heading of Vyana vata prakopaja vikara.

Anatomical aspect of Sandhi:

There are two types of sandhi present in our body, they are

1. Chesthavantha - movable joints, example are the sandhis of Shakha, Hanu, Kati, Greeva.

2. Sthira - the remaining sandhis other than cheshtavantha.

Another classification of sandhi is,

<table>
<thead>
<tr>
<th>No.</th>
<th>Type of Sandhi</th>
<th>Structure</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kora</td>
<td>Hinge joint</td>
<td>anguli, manibandha, janukurpara,</td>
</tr>
<tr>
<td>2</td>
<td>Ulukhala</td>
<td>Ball &amp; socket joint</td>
<td>Kaksha, vankshana and dashana</td>
</tr>
<tr>
<td>3</td>
<td>Samudga</td>
<td>Saddle joint</td>
<td>Guda, Bhaga, Nitamba</td>
</tr>
<tr>
<td>4</td>
<td>Pratara</td>
<td>Plain gliding joint</td>
<td>Greeva, Prushtavansh</td>
</tr>
<tr>
<td>5</td>
<td>Tunnasevani</td>
<td>Sutures</td>
<td>Sira, Kati, Kapala</td>
</tr>
<tr>
<td>6</td>
<td>Vayasatunda</td>
<td>Condyloid joints</td>
<td>Hanu</td>
</tr>
<tr>
<td>7</td>
<td>Mandala</td>
<td>Circular joint</td>
<td>Kantha, Hrudaya, Kloma</td>
</tr>
<tr>
<td>8</td>
<td>Sankhavartha</td>
<td>Bony labyrinth</td>
<td>Shrotra, shrungataka</td>
</tr>
</tbody>
</table>

Snayu:

Snayu looks like a Shana jute and it is considered as the part of sandhi. It is the upadhatu of medas and also moola of mamsavaha srotas. There are 900 snayus are present in human body. They are classified into four types they are, Pratanavathi, Vrutta, pruthula and Sushira. Pratanavathi snayu is present in all the sandhis. The vrutta snayus also considered as Kandara. It has the function of prasarana and akunchana of body parts.
**Sleshmadhara Kala:**

This is the fourth kala, the kleda which is present in between the dhatvashaya will get paka by respective dhatwagni and kalas are produced. Sleshmadhara kala is considered as the seat for the sleshma (Shleshaka kapha) and it gives integrity to the body.

Just as the application of oil to the axils produce easy movements to the wheel, the easy movement of the Sandhis is similarly brought about the lubricating effect the Shleshma dhara kala lining the Sandhis. The Synovial membrane can compared with Shleshmadhara kala, which helps to easy movement of joints by secreting synovial fluid. Type B Synoviocytes will secrete the synovial fluid.

**Siras**

Siras are upadhatu of rakta which helps in sarana. There are four types; they are vatavaha, pittavaha, kaphavaha and raktavaha are mainly situated in marma and nourishing the snayu, asthi and sandhi. They are 700 in number.

**Peshi :**

There are 500 peshies in our body. The sira, snayu, asthi, parva and sandhis are covered by the peshies and get strength.

**Sandhimarma :**

Marmas are the vital points of the body. They are 101 in number. According to Dalhana marmas are situated in mamsa, sira, sandhi etc.

Depending on the structural base, marmas are divided into 5. They are mamsa, marma, sira marma, snayu marma, asthi marma and sandhi marma. All the marmas come under these 5 categories.

There are 20 types of sandhi marmas. They are janu, kurpara, seemanta, adhipati, gulpha, manibandha, kukundara, avartha and krukatiaka.

**Joints:**

Two or more bones unite to form joints.

There are three types of joints explained.

- Fibrous joints.
- Fibro-cartilagenous joints.
- Synovial joints.
**Fibrous and Fibro-cartilagenous joints:**

In this type, the fibrous or Fibro-cartilaginous tissues unite the two bones. This joint will present where there is little requirement of movement.

For fibrous joint: joints present in skull bone.
For Fibro-cartilaginous joint: Symphysis pubis, Inter vertebral discs.

**Synovial Joints:**

This type of joints provides maximum range of movement.

e. g. Most limb joints, Tempero-mandibular joint.

Structures present in synovial joint are,

1. Articular cartilage.
2. Synovial fluid.
3. Intra articular disc.

**Articular cartilage:**

In synovial joint, the articular surface is covered with a layer of articular cartilage.

In normal cartilage, there are no cell divisions. But in this chondrocytes there are continuous process of destruction and synthesis of the cartilage matrix throughout life.

**Constituents:**

It is an avascular tissue that consists of cartilage cells Chondrocytes, Type II collagen and smaller amounts of other proteins which is present in the matrix of proteoglycans.

The matrix consists of:

1) Type II collagen fibers:

   It forms the meshwork in between the proteo glycan molecules.

2) **Hydrated gel of proteo glycan molecules:**

   In this, the important one is Aggrecan.
   Aggrecan consists of:
   A] Core protein.

   The important GAG is Chondroitin sulphate and Keratan sulphate.
3) Hyaluronan:
   A long GAG in which numerous aggrecan will be connected.

4) Link protein:
   N-Terminus of aggrecan joins to the hyaluronan by small glycoprotein called Link protein.

Articular cartilage has two essential functions:

   It provides a smooth bearing surface so that with the movement, bone glide effortlessly over each other. Articular cartilage prevents concentration of stresses, so do not shatter when the joint is loaded. Large complexes of aggrecan and lyajuronan form the articular cartilage. Aggrecan has a strong, negative charge because of the sulphate and hydroxyl groups in glycosaminoglycan. And also it binds large number of water molecules. So it occupies the maximum possible volume available. So the expansive force of charged and hydrated aggrecan and restrictive force of collagen gives the articular cartilage an excellent shock absorbing properties.

**Synovial fluid:**

   Surfaces of articular cartilage separated by space called Synovial fluid. It is basically ultra filtrate of plasma into which synovial cells secrete Hyaluronan and rotocglycan. It lubricates the joint.

**Intra articular discs:**

   Intra articular discs are the fibro cartilagenous disc which is present within the joint space. It is present in some joints only and acts as shock absorbers.

**Joint capsule:**

   Joint capsule is a fibrous structure, richly supplied by blood vessels, lymphatics and nerves. It joins the two bones of the synovial joint. Ligaments and a regional thickening of joint capsule stabilize the joint. Inner surface is lined by synovial membrane.

   This membrane contains outer layer of blood vessels and loose connective tissues. Inner layer consists of Type A and Type B synoviocytes. Most of inflammatory and infiltration by lymphocytes, polymorphs and macrophages. Many contain bursae which are hollow sacs lined by synovium.
NIDANA

In Ayurvedic classics, the term Nidana has been defined in two different senses one of these definitions explains Nidana or that which gives a complete knowledge of a disease or that which helps in diagnosing a disease.

The other part defines Nidana as those which have a tendency to produce a process after inducing a chain of pathological events in the body like Dosha prakopa etc or in short, the etiological factors of the disease. The ahita ahara vihara which vitiates the doshas and the dushta doshas which tend to vitiate the dushyas are included into the category of Nidana.

Being an important member of the Nidana Panchakas aiding in roga pareeksha, Nidana not only helps in diagnosis and differential diagnosis, but also helps in determining the prognosis of the disease. Nidana has an important role to play in Chikitsa also, as the shortest route of avoiding or getting rid of the disease is said to Nidana parivarjana.

In this context, the terminology Nidana covers the etiological factors causing The disease entity Sandhigata vata. Sandhigata vata is one of the vata vikara Vata vyadhi can be an effect of either of the two pathological events namely Dhatukshaya or Margavarodha. Each occurring due to different sets of nidana and so does Sandhigata vata. Since separate etiological factors have not been mentioned with respect to Sandhi gata vata, the same nidanas which have been explained in then text of vata vyadhi should be considered.

Notes:
. vata prakopaka nidana
• + vata vyadhi nidana.

The nidanas can be categorized into:
A) Aharatha
B) Viharatha
C) Manasika
D) Kalakrutha
A) Aharatha:

Ahara is an important factor responsible for the maintenance of health, as it is Pancha bhoutika. Bala and ayush is gained by ahara. It is the form of nutrition to the basic elements of the body or the shareeraja dhatu. Dhatu kshaya is a main cause of vataprapakoa. So here the cause of dhatu kshaya is been considered keeping in view of their final effect on the functions of vata. Therefore different factors relating has been tabulated.

A) Rasa visheshatha nidana:

Table No: 2 showing Rasa visheshatha nidana:

<table>
<thead>
<tr>
<th>Rasa</th>
<th>Ch</th>
<th>Su</th>
<th>A.S</th>
<th>B.P</th>
<th>M.N.</th>
<th>Y.R</th>
<th>Ba.Raj</th>
<th>H.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kashaya</td>
<td>-</td>
<td>*</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Katu</td>
<td>-</td>
<td>*</td>
<td>*</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tikta</td>
<td>-</td>
<td>*</td>
<td>*</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* vata prakopaka nidana. + vata vyadhi nidana.

Kashaya, katu and tikta are the rasas, which vitiates vata and also leads to snehadigunashunyata. So this nidanas can be the cause for sandhigatavata.

B) Guna visheshatha nidana:

Table No: 3 Showing Guna visheshatha nidana:

<table>
<thead>
<tr>
<th>Guna</th>
<th>Ch</th>
<th>Su</th>
<th>A.S</th>
<th>B.P</th>
<th>M.N.</th>
<th>Y.R</th>
<th>Ba.Raj</th>
<th>H.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ruksha</td>
<td>+</td>
<td>*</td>
<td>*</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Shitha</td>
<td>+</td>
<td>*</td>
<td>*</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Laghu</td>
<td>+</td>
<td>*</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Sukshma</td>
<td>-</td>
<td>*</td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* vata prakopaka nidana. + vata vyadhi nidana.

The gunas like laghu, ruksha, khara etc. leads to the kshaya of the sneha guna of body, which further leads to dhatukshaya and also vitiation of the vata dosha. So these gunas can also cause sandhigata vata vyadhi.
C) Veerya visheshatha nidana:

Table No: 4 showing Veerya visheshatha nidana:

<table>
<thead>
<tr>
<th>Veerya</th>
<th>Ch</th>
<th>Su</th>
<th>A.S</th>
<th>B.P</th>
<th>M.N.</th>
<th>Y.R</th>
<th>Ba.Raj</th>
<th>H.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shita</td>
<td>-</td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- vata prakopaka nidana. + vata vyadhi nidana.

Sheeta veerya is the factor for the vitiation of Vata dosha. So this can be considered as one of the viprakashta nidana for Sandhi gatavata.

D) Time and forms of ahara:

Table No: 5 showing Time and forms of Ahara:

<table>
<thead>
<tr>
<th></th>
<th>Ch</th>
<th>Su</th>
<th>A.S</th>
<th>B.P</th>
<th>M.N.</th>
<th>Y.R</th>
<th>Ba.Raj</th>
<th>H.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpa</td>
<td>-</td>
<td>*</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Pramitha</td>
<td>-</td>
<td>•</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Abhojana</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virodhi</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apatarpana</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

- vata prakopaka nidana. + vata vyadhi nidana

The forms of Ahara like Virodhi, Alpa, cause Vata vitiation thus produces Sandhi gata vata.

E) Type of ahara:

Table No.6 Showing Type of Ahara:

<table>
<thead>
<tr>
<th>Nidana</th>
<th>Ch</th>
<th>Su</th>
<th>A.S</th>
<th>B.P</th>
<th>M.N.</th>
<th>Y.R</th>
<th>Ba.Raj</th>
<th>H.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaka</td>
<td>-</td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vallura</td>
<td>-</td>
<td>•</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Varaka</td>
<td>-</td>
<td>•</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Uddalaka</td>
<td>-</td>
<td>•</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Koradusha</td>
<td>-</td>
<td>•</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Shyamaka</td>
<td>-</td>
<td>•</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Nivara</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mudga</td>
<td></td>
<td>*</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adhaki</td>
<td></td>
<td>*</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harenu</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalaya</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nishpava</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vishtambhi</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virudaka</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truna dhanya</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chanaka</td>
<td></td>
<td>*</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Karira</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tumba</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kalinga</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cirabhita</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisa</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saluka</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jambava</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tinduka</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thriputa</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satheena</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Makustha</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mangalyaka</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masura</td>
<td></td>
<td>*</td>
<td></td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* vata prakopaka nidana. + vata vyadhi nidana.
2) Viharatha nidana:

Various viharas can stimulate or irritate those anatomical sites where a function of vata (movements) is more required. Particularly the weight bearing joints which tend to become the target. Initially the injury may be at the molecular level which further aggravates being able to involve the tissues of the sandhi generally in case of irreversible injury.

Vyana vata is responsible for different cheshtas (movements). Here viharaja nidana means the atiyoga, ayoga or mithyayoga of these cheshtas which leads to the vata prakopa. Viharaja nidana is also leads to abhighata of body parts (sandhi) which also become one of the pre disposing factors for sandhigata vata.

Table No. 7 Showing Viharaja nidana:

<table>
<thead>
<tr>
<th>Nidana</th>
<th>Ch</th>
<th>Su</th>
<th>A.S</th>
<th>B.P</th>
<th>M.N.</th>
<th>Y.R</th>
<th>Ba.Raj</th>
<th>H.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ati vyayama</td>
<td>+</td>
<td>*</td>
<td>*</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Ativyavaya</td>
<td>+</td>
<td>-</td>
<td>*</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Langhana</td>
<td>+</td>
<td>*</td>
<td>*</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Prajagara</td>
<td>+</td>
<td>*</td>
<td>*</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Plavana</td>
<td>+</td>
<td>*</td>
<td>*</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>(pratarana)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atiyadhva</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Ativi cheshta</td>
<td>+</td>
<td>-</td>
<td>*</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Dukhasayya</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Dukha ashana</td>
<td>+</td>
<td>-</td>
<td>*</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>(vishamasana)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diva swapna</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Vega</td>
<td>+</td>
<td>*</td>
<td>*</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>sandharana</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vego udeerana</td>
<td>-</td>
<td>-</td>
<td>*</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Abhighata</td>
<td>+</td>
<td>*</td>
<td>*</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Shrama</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Kreeda</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>
3) Manasika Karana:

Manas is Udbhayendriya, which is the main part to attain ganhanotpatti. Manas is controlled by Vata (Niyantha pranetha cha manasaam). Indriyas are also controlled by vata only.

So manasika nidana considered as one of cause of Vata vyadhi because Asatmyendriyartha samyoga is one type of nidana.

Table No: 8 Showing Manasika nidana:

<table>
<thead>
<tr>
<th>Nidana</th>
<th>Ch</th>
<th>Su</th>
<th>A.S</th>
<th>B.P</th>
<th>M.N.</th>
<th>Y.R</th>
<th>Ba.Raj</th>
<th>H.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinta</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Shoka</td>
<td>+</td>
<td>-</td>
<td>*</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Krodha</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Bhaya</td>
<td>+</td>
<td>-</td>
<td>*</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>
*vata prakopaka nidana. + vata vyadhi nidana.

4) **Kalaja:**

Kala is of two types: Nityaga and Avasthika, Nityaga kala pertains to the kalsa related to rutus and Avasthika kala is related to pathological state of doshas according to the age of person.

Table No.: 9 Showing Kalaja nidana:

<table>
<thead>
<tr>
<th>Nidana</th>
<th>Ch</th>
<th>Su</th>
<th>A.S</th>
<th>B.P</th>
<th>M.N.</th>
<th>Y.R</th>
<th>Ba.Raj</th>
<th>H.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pradosha samaya (Varsa rutu)</td>
<td></td>
<td>*</td>
<td>*</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3rd part</td>
<td></td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dinakshana</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shishira</td>
<td></td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Grishma</td>
<td></td>
<td>-</td>
<td>*</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bhuktanta</td>
<td></td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pravruta</td>
<td></td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sheeta Kala</td>
<td></td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vruddha</td>
<td></td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Usha Kala</td>
<td></td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Aparahna</td>
<td></td>
<td>*</td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Jeema anna</td>
<td></td>
<td>*</td>
<td>*</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Apararatri</td>
<td></td>
<td>-</td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Purvavata</td>
<td></td>
<td>-</td>
<td>*</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* vata prakopaka nidana. + vata vyadhi nidana.
Influence of the time factor (kala) on the doshas has been given importance in Ayurvedic classics. In general the vata is 'predominant at varsha rutu, evening or at the end of the digestion.

Here old age will be main precipitating factor for production of Vatavyadhi.

Although other nidanas can also cause vitiation of vata, it is considered as Vyabhichari causes for Vatavydhi. In Vruddhavastha, the dhatus are in the state of Ksheena, that which provides platform for the diseases. They are more prone to get Sandhi gata vata.

There are six ritus in which tridoshas are having its own state of kshaya or vruddhi. By considering this, vata is having sanchaya in Greeshma, prakopa in Varsha and shamana in Sharat. By this we can analyse that due to the rukshata in Greeshma vata gets Sanchaya, due to sheetata of Varsha gets Prakopa and ushnata of sharada rutu the Vata shamana. In Vata prakopaka ritus, person prone to get Sandhi gata vata. The possible effect of these factors may be due to not adopting the rules of Rutu charya and the purification measures in the ruitu sandhi as advocated in classics.

Prakruti is also given importance while disease is considered. Vata prakruti persons are more prone to vata vyadhi. While explaining Vata prakruti, Charaka told that Anavasthita sandhi(loosening of joints), because of chala guna and satata sandhi shabada gami (continuous crepitus in joints while walking) because of vaishadya guna of Vata.

POORVARUPA

The unclear signs and symptoms produced by the vitiated doshas during the process of sthana samshraya, which indicate the forth coming disease are called as Poorva rupa. This marks the beginning of amalgamation of vitiated doshas and dushyas. In the context of vata vyadhi, it has been said that the under manifestation of signs and symptoms or avyakta lakshanas should be regarded as poorva rupa. Even in case of sandhigata vata also, feebly manifested signs and symptoms of the disease can be considered as poorva rupa. In sandhigata vata, shoshana of shareera takes place due to the localization of the prakupita vata, as a result of which the person starts feeling laghuta. Lakshan as of sandhigata vata i.e shotha, shula etc are also found in avyakta.avastha.
RUPA

In the disease process, the same unclear signs and symptoms of poorva rupa when gets clearly manifested so as to indicate an existing disease will be called as rupa. In short the signs and symptoms of a completely manifested disease are called as rupa or lakshanas. The same rule holds good with sandhigata vata also, where in the symptoms of the disease like shotha, shula etc which were unclear and feeble during the sthana samsraya gets clearly manifested defining the disease.

Table No: 10 Showing Roopa of Sandigata vata according to various Acharyas:

<table>
<thead>
<tr>
<th>Lakshanas</th>
<th>Ch²⁷</th>
<th>Su³⁸</th>
<th>A.S³⁹</th>
<th>A.II⁴⁰</th>
<th>B.P⁴¹</th>
<th>Y.R⁴²</th>
<th>M.N⁴³</th>
<th>Baraj</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandhi Soola</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Shotha or shopha</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vatapurna druti</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>sparsha</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hanti sandhin</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Prasarana</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>akuncanayoho</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pravrttisavedana</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atopa</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Shareera</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>gandhaliptata</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Anga peeda</td>
<td>-</td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Romaharsha</td>
<td>-</td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Vilepana</td>
<td>-</td>
<td>*</td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

The cardinal symptoms are as follows:
1. Vata poorna druti sparsha
2. Sandhi shoola
3. Sandhi sphutana or Atopa
4. Prasarana Akunchana pravruthi savedana
5. Sandhi shotha or shopha
1) **Hanti sandhi:**

In the commentary-Nibandha sangraha and Atanka darpana, they give the explanation that, Hanti sandheen means abhava in Prasarana akunchana etc functions of the Sandhi. In Madhukosha commentary, it means complications of sandhi like Sandhi vishlesha, Sandhi sthambha etc. Gayadasa gives opinion about Sandhi vishlesha as there will be difficulty of movement without the dislocation.

Vata is responsible for the Gati especially vyana vata leads to Pancha cheshta of the body (Prasarana, akunchana, Unnamana, Vinamana, Tiryakgamana). So impairment of Vyana vata leads to difficulty in movement.

2) **Sandhi shoola:**

Shoolia is the main symptom of the Vata vitiation. All the Acharyas mentioned that there is no Shoola without the vitiation of vata.

Sandhi shoola is the main symptom in the Sandhigata vata. In Asthi-Majjagata vata also this is the main symptom. So we can conclude that the sandhi shoola is produced due to the effect of Ashrayee dhatu kshaya (Asthi) due to the vitiation of Vata.

3) **Atopa or Sandhi sphutana:**

This specific symptom is explained by Acharya Madhava. Shabda is the indriyartha which indicates the predominance of qualities of Vata. Sandhigata vata is localized vata vyadhi in which prakupita vayu affects Sandhi. This sthana samshraya is the result of srotoriktata present at sandhi; that means akasha mahabhuta is increased at the site of sandhi.

The Atopa can be correlated to the crepitus in a joint. This is due to the Osteophyte formation at the time of remodeling of joint. This becomes evident only when there is marked degeneration.
4) Prasarana akunchana pravruthi savedana:

There is a natural elasticity or contractility in the joint by virtue of which the movement in different direction can be performed. This is destroyed due to the vitiated vata, with the result the patient is not able to move his joint freely especially in the extension and contraction. If he tries to move, there will be severe pain. This phenomenon has been explained by different terminologies such as Stambha etc.

5) Sandhi shotha:

It is one of the main symptoms in Sandhigata vata. Sushruta explained it as Sandhi shopha because Shopha is the swelling which is Ekadesna sthitna. Acharya Charaka explained as shotha.

By commenting on shotha, Arunadatta explains that, the swelling looks like the air filled bag.

In Ashtanga samgraha, Vagbhata includes shopha as one of the Vyana vata vikara.

6) Vata purna druti sparsha:

Sparsha is of two types, Ushna sparsha and Sheeta sparsha. In Yogaratnakara, there is reference that the person who is suffering from vata roga will have Sheeta sparsha. In Sandhigata vata, usually the joints will be look like air filled bag to touch and cold.

Acharya Basavaraja also explained some other symptoms like Shareera Gandha liptata, Romaharsha, Vilepana which shows the chronicity of the disease.

UPASHAYA AND ANUPASHAYA

Upashaya is the temporary relief which is gained by the procedures such as oushadhi etc. It is also considered as therapeutic test to attain correct diagnosis of the disease when it becomes difficult due to its effects in manifestation of signs and symptoms.

Anupashaya and Upashaya is the application of Ahara, Oushadha, Vihara, prescribed either antagonistic or similar to the nidana, to the hetu, vyadhi or to both hetu
and vyadhi together. It is considered as Upashaya when it decreases the symptoms and when it aggravates the symptoms it is called Anupashaya.

For example when abhyanga, swedana, ushna ahara etc reduce the symptoms of Sandhigatavata. In samavastha, like in Amavata the same treatments aggravate the condition. So it is a treatment and also a diagnostic approach.

**SAMPRAPTI**

For the better understanding of the disease, the knowledge of Samprapti i.e. the etio pathogenesis of the disease is essential.

Samprapti can be defined as the process of disease from its inceptive phase to fully manifestation. This process starts from the Nidana sevana or consumption of the etiological factor causing dosha prakopa, circulates through out the body, localization then manifestation and differentiation. To the pathological point of view, dosha, dhatu, srotas is essential in relation of Sandhigata vata.

Srotas is also called as Dhatuavakasha, which is formed from the Akasha mahabhuta. Akasha and Vayu mahabhuta are interrelated and Vayu is situated in the emptiness [Riktata] created by the Akasha mahabhutha.

In Samprapti, 'Riktata of srotas' present in the sandhi is considered as the 'Khavaigunya', which is the platform for manifestation of disease Sandhigata vata. Chakrapani gives explanation about Riktata as Thucchata' or 'Snehadi guna shunyata'.

While explaining vata prakopa lakshanas, Charaka has mentioned the term "Sushirata" which may be taken as Riktata.

In sandhigata vata, we can take the Snehadi guna shunyata in two different conditions. As the sneha is the main guna of the shleshma, shunyata can be considered as the Sleshma kshaya. Shleshaka kapha is present in the sandhi which is responsible for the integrity of joints and proper lubrication. The depletion of this leads to Riktata of srotas.

Dhatus are the snehayukta dravya present in the body. As the sandhi is made up of different dhatus, upadhatus and other essential factors, the intake of the dhatu kshayakara nidana will lead to there will be dhatukshaya which in turn causes snehadi guna shunyata.
[riktata]. In short, one can say that the loss of snehana of the joint is responsible for the pathogenesis of Sandhigata vata.

Vata prakopa can occur in two ways.

1) Dhatukshayajanya and

2) Margavaranajanya (obstruction)

Vagbhata clearly explains that Dhatukshaya nidanas are also responsible for the vitiation of the vata along with the riktata. The prakupita vata situates in the rikta srotas present in the sandhi thus producing the symptoms of Sandhigata vata.

In margavarodhajanya condition, the other doshas such as Kapha and Pitta fills the Srotas present in the sandhi and does the Avarana of vata. Due to avarana, the avrutta vata becomes strong and vitiated, leads to further dhatu shoshana thus producing the symptoms of the Sandhigata vata.

Medo roga (sthoulya) may also lead to Sandhigata vata as vata vyadhi is said as one of the complication of the medoroga. Due to the Avarana of meda to the pathway of the vata, there will not be proper nourishment to other dhatus leading to vata vikaras.

Samprapti Ghatakas:
Dosha Vatavruddhi, [Vyanaapana], Kapha kshaya [sleshaka kapha].
Dushya Asthi, Snayu [sandhi avayava].
Srotas Important srotas are asthi vaha, majja vaha other less important are medovaha and mamsavaha srotas.
Agni Dhatwagni
Rogamarga Madhyama.
Udbhavasthana Pakwashaya.
Vyaktasthana Sandhi.
Chart No. 1 Showing Etio-pathogenesis of Sandhigata vata:

Nidana

Ahara  Vihara  Manasika  Kala  Gada  Kruta

Vata prakopa  Dhatu kshaya  Anyadosha prakopa

Vata prasara  Rikta  

Fills in the Strotas  Avarana of vata

Vata prakopa

Sthana samshraya in sandhi

Sira  Asthi  Snayu  Kandara  Sleshma  Sleshma dhara kala

Sleshma dhara kala

Vatapurna  Shotha  Stambha  Aatopa  Shula

32
UPADRAVA

Upadrava is the Complication of a disease. The Dosha which causes the main disease is itself responsible for the upadrava.

Upadrava will be manifested in three ways i.e. complications that starts along with the disease, complications after full manifestation of the disease and complications produced after cure of the disease.

Asthi shithilata, peshi kshaya can be considered as the complication which manifests along with Sandhigata vata and Sandhi vishlesha will be its after effect. Complications such as deformity and immobility of joints will interfere the routine works.

SADHYASADHYATA

Sushrutha and Vagbhata have included Vata vyadhi under the Ashta maha gada because of its ashukarita and Upadrava. As the disease Sandhi gata vata is one of the Vata vyadhi, it is difficult to cure.

Charaka while explaining sadhyasadhyata, mentions that 'Khuda vata is Kashta sadhya or asadhya. Commenting on Khuda vata, Chakrapani opines that Khudavata itself is Gulphavata or Sandhi gata vata.

Acharya Hareeta concludes that the Mamsa gata, medo gata vata is Sadhya, rest of Gata vata is Kashta sadhya or Asadhya for treatment.

As Sandhi gata vata is the disease of Madhyama roga marga. It is considered as Kashta sadhya.

CHIKITSA

The main scopes of the Chikitsa are two. They are promotion and preservation of health in healthy individual and elimination of the disease ailing and afflicted i.e. curative treatment. According to the Amarakosh chikitsa is Ruk pratikriya where as in Vaidyaka shabda sindhu, it is defined as 'roga nidana prateekara'.

The term rogapanayana and ruk pratikriya convey nearly the same meaning viz. measures calculated to the removal of disease and treatment of the disease respectively. The term roga nidana pratikriya stresses on the removal of causation factors of the diseases.
Acharya Sushruta was the first to mention the treatment principles of Sandhigatavata. Although Charaka has not mentioned about specific chikitsa, the general Vatavyadhi chikitsa is taken into consideration.

Treatment principles according to different Acharyas are tabulated below:

Table No: 11 showing Chikitsa sutra of Sandigatavata

<table>
<thead>
<tr>
<th>Chikitsasutra</th>
<th>Ch</th>
<th>Su&lt;sup&gt;51&lt;/sup&gt;</th>
<th>A.S.&lt;sup&gt;52&lt;/sup&gt;</th>
<th>A.H&lt;sup&gt;53&lt;/sup&gt;</th>
<th>B.P&lt;sup&gt;54&lt;/sup&gt;</th>
<th>Y.R&lt;sup&gt;55&lt;/sup&gt;</th>
<th>B.R&lt;sup&gt;56&lt;/sup&gt;</th>
<th>C.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sneha</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Abhyanga</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Upanaha</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Agnikarma</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Bandhana</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Unmardana</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sweda</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Raktavasechan</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pradeha</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Shamana</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

1) **Snehana**

The procedure which induces qualities like Snigdha, Mruduta, Kledata and Vishyandata in the body, following the internal and external administration of sneha dravyas are called as Snehana<sup>57</sup>. Snehana is said to be the best treatment in case of all the diseases produced by the Vata, since it is totally antagonist to the qualities of Vata. Snehana is also said to be tridoshagna as it alleviates vata, pitta and kapha due to its Snigdha, Shaitya and samskarasyanuvartana (yogavahi) respectively. According to prayoga bheda there are two types of snehana procedures, they are Bahya sneha - in this the sneha dravyas are applied externally as done in procedures like abhyanga, avagaha, shirobasti etc.

Abhyantara sneha - In this the sneha is administered internally in the form of pana and basti.
In the disease Sandhigata vata, the administration of Snehana will be very effective since Prithwi and Ambu mahabhoota, which are mainly present in the Snehadravyas are exactly opposite to the Akasha mahabhuta predominantly prevails in the main factor in the disease pathology i.e. Sroto riktata. There are two types of sneha i.e sthavara and jangama\(^5\). Among these snehas, four snehas are considered as pravara and also their quality has been mentioned. Among these, ghrita is considered as best one and it is pittanilahara, rasashukra ojo hitha. Taila is marutaghna,balya, sthirakara and it does not increase kapha. Vasa is best known for eradicating the maharuja which is affecting to Asthi, Sandhi, Sira, Snayu, Marma and balavan maruta which is situated in the srotas. Majja is considered as bala- rasa- meda- shleshma and majja vardhaka.

2) Abhyanga:

Abhyanga is a type of snehana karma where massage is done by applying the taila on the body\(^5\). It is said that by abhyanga both kapha and vata will be pacified. It is also considered as balakari and dhatu pushtikara\(^5\). Dalhana had given the explanation regarding the time required for the Sneha dravyas to enter deep to the dhatus following Abhyanga. According to his explanation, sneha is situated in romakupa up to 300 matrakala. In 400 matrakala it enters twacha, in 500 to rakta, in 600 matrakalato mamsa. It reaches medodhatu in 700 matra kala. The sneha reaches asthi in 800 matrakala. In 900 matrakala sneha enters into majja thus inducing snigdhata in all the dhatus. Thus it is considered as the dhatu pushtikara.

Since Sandhigatavata is a disease of Madhyama roga marga where the Asthi, majja and sandhis are involved; the penetration of sneha dravyas deep into the dhatus during abhyanga as said above will be of high therapeutic value.

In 5\(^{th}\) century B.C. Hippocrates wrote: "The physician must be experienced in many things, but assuredly in rubbing, because rubbing can bind a joint that is too loose and can loosen a joint that is too rigid"

Upanaha

The word meaning of Upanaha is bandhana.\(^6\) According to Sushruta, it is one among 4 types of swedana karma. In this moola kalka, kanji, pishta, lavana is added with sneha and thick application is done over the affected part. Then that area is tied in a cloth.
In case of Pittanugata vata kakolyadi, surasadi or eladi gana dravyas are used. In kaphanugata vata tila, atasi etc dravyas and in kevala vata veshavara, salvana upanaha is advised. He is also explained that Upanaha is best for Vata.

Acharya Charaka explains Upanaha as one of the Niragni swedana. By commenting on this Chakrapani explains there are two types of Upanaha. They are Saagni and Niragni upanaha. In Saagni upanaha, tila or masha kalka are made into hot and kept on affected part. This is also called as the Sankara sweda. In Niragni upanaha, ushna veerya drugs are applied and tied by charma, cloth etc.

Vagbhata explains Vachadi Upanaha in kevala vata.

Acharya Shivadas Sen explains the mechanism of the Upanaha as swedana. Due to the blocking of the heat generated by the body, there will be production of the sweda in that part.

Agni karma:

The procedures done with the help of agni or the drugs having Agni guna is called as Agnikarma. The severe complications of Sira, Snayu, Asthi and Sandhi caused by the vitiation of vata are cured by the Agni karma.

In snayu- asthi and sandhi gatavata and kaphaja vikara, by using Kshaudra (Honey), Guda (jaggery) or Sneha, the procedure of Agnikarma should be done. It is indicated in all ritus except in Sharada and Grishma."

The importance of this procedure is the diseases which are not cured by the other procedures like Bheshaja, Shastra, Kshara, and Rasa can be cured by using this procedure. 116

Bandhana:

Bandhana leads to Sarnhathi. It is the procedure in which the effected part will be tied by using Rajju etc.

By doing Bandhana procedure, there will be strength to the joints and also pressure to the joints will be minimized.

VIMARDANA

It is the procedure of massaging of effected part by Hastatala after application of oil. By the gentle massage there will be proper circulation to the joints.
Swedana :

Swedana is of two types according to Agni samyoga. They are
1) Agni sweda- They are of 13 types, namely Sankara, Prastara, Nadi, Parisheka, Avagaha, Jentaka, Ashmagnana, Karshoo, Kuti, Bhoo, Kumbhika, Koopa and Holaka.
2) Niragni sweda: They are of 10 types namely, Vyayama, Ushnasadana, Gurupravarana, Kshudha, Bahupana, Bhaya, Krodha, Upanaha, Atapa, Yuddha.

In Ashtanga Sangraha, Vagbhata has said that swedana is the best remedy to remove the stabdhata of the Sandhi (Sandhi stabdhata paham).\(^\text{62}\)

In case of Sandhigata vata, by doing swedana, there will be Vata nigrahana which results in decreasing the pathology.

Raktavasechana :

Acharya Vagbhata (Ashtanga samgraha) explained it as avashtika chikitsa. In sira-snayu-sandhi gata vata, if the person is having Svapa (numbness), raktavasechana is indicated in alpa pramana. If the person feels angamlana with numbness, raktavasechana is contra indicated because there will be the chance of shosha.

After raktavasechana, pradeha is applied by taila, lavana, agara dhuma.

PATHYAAPPATHYA

Pathya means wholesome or conducive to health. Pathya is related to Patha which is having different meanings. It indicates the channels of circulation which is called as Srotas. Chakrapani comments that Patha is the dosha and dhatus which is present in srotas. He also quotes that Pathya is the Swastha rakshana and also Vyadhi prashamana.

So the food and activities which is performed and which is Anpayakari (not harmful) to person and also to disease is called as Pathya\(^\text{63}\) it depends on the Matra, Kala, Kriya, Bhumi,Deha, Desha and Gunantara

Pathya has been given importance that no medicine is needed if Pathya is followed properly and there is no use of medicine if Pathya is not followed properly.

Although specific Pathya is not mentioned for Sandhi gatavata, the wholesome food and regimens explained for Vatavyadhi is taken as Pathya.
Table No: 12 Pathya for Sandhi gata vata:

<table>
<thead>
<tr>
<th>Ahara</th>
<th>Yogaratnakara</th>
<th>Bhaishajya ratnavali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sneha</td>
<td>-</td>
<td>Taila</td>
</tr>
<tr>
<td>Shaka varga</td>
<td>Patola, Kushmanda, Shigru, Carthaka</td>
<td>-</td>
</tr>
<tr>
<td>Shuka dhanya varga</td>
<td>Godhuma, Rakta shali</td>
<td>Godhuma, purana dhanya</td>
</tr>
<tr>
<td>Shimbi dhanya</td>
<td>Masha, Kulatha</td>
<td>Masha, Kulatha</td>
</tr>
<tr>
<td>Mamsa</td>
<td>Kukkuta, Tittiri, Barhi, Chataka, Jangala mamsa</td>
<td>-</td>
</tr>
<tr>
<td>Matsya varga</td>
<td>Shilendra, Nakra, Khudisha,</td>
<td>-</td>
</tr>
<tr>
<td>Phala varga</td>
<td>Dadima, Parooshaka, Badara, Draksha</td>
<td>-</td>
</tr>
<tr>
<td>Gavya varga</td>
<td>Ghrutha, Dugdha, Kilaata, Dadhi, koorchika</td>
<td>-</td>
</tr>
<tr>
<td>Oushadha dravya</td>
<td>Lashuma, Tambula, Matsyandika</td>
<td>Brihati, Vastuka, Kasamarda, Dunduka, Mishi, Kataka</td>
</tr>
<tr>
<td>Lavana</td>
<td>Saindhava</td>
<td>-</td>
</tr>
</tbody>
</table>

Apathya for Sandhi gata vata:
In Yogaratnakara and Bhaishajya ratnavali, some of unwholesome foods are explained which is enlisted below.

Table No: 13

<table>
<thead>
<tr>
<th>Apathya ahara</th>
<th>Yogaratnakara</th>
<th>Bhaishajya ratnavali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vihara</td>
<td>Chinta, Prajagara, Vegavidharana, Sharama, Vyavaya, Chankramana, Khatwas (sleeping in cot). Hasthyashwayana</td>
<td>Sheeta pravata</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dwija gharshana</td>
</tr>
<tr>
<td>Karma</td>
<td>Checardi</td>
<td>-</td>
</tr>
<tr>
<td>Food intaken</td>
<td>Anashana</td>
<td>Guru, Abhisyandi</td>
</tr>
</tbody>
</table>

38
<table>
<thead>
<tr>
<th>Shuka dhanya</th>
<th>Nava dhanya</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shimbi dhanya</td>
<td>Mudga, Nivara, Shyamaka, Kuruvinnda, Kalaya, Chanaka</td>
</tr>
<tr>
<td>Shaka varga</td>
<td>Koshataki, Kareera</td>
</tr>
<tr>
<td>Jala varga</td>
<td>Thataka, Thatini, Pradushta salila</td>
</tr>
<tr>
<td>Rasa</td>
<td>Kashaya, katu, Tikta</td>
</tr>
<tr>
<td>Other substances</td>
<td>Kshoudra, Kangu, Nimba</td>
</tr>
</tbody>
</table>

**DIFFERENTIAL DIAGNOSIS**

For the accurate diagnosis of the disease, Vyavacchhedaka nidana (differential diagnosis) is important. By seeing difference in the causative factors, mode of onset, clinical features, upashaya- anupashaya, we can conclude the differential diagnosis. Sandhi gatavata is the disease pertaining to joints, other joint diseases such as Vatarakta, Amavata will be considered for the differential diagnosis.

**Table No: 14**

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Sandhigata vata</th>
<th>Vatarakta-</th>
<th>Amavata-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosha</td>
<td>Vata</td>
<td>Thridoshaja</td>
<td>Vata-Kaphaja</td>
</tr>
<tr>
<td>Onset</td>
<td>Gradual</td>
<td>Gradual</td>
<td>Sudden</td>
</tr>
<tr>
<td>Progression</td>
<td>Constant</td>
<td>Increase &amp; Decrease</td>
<td>Constant</td>
</tr>
<tr>
<td>Joint involvement</td>
<td>Big</td>
<td>Small</td>
<td>Big</td>
</tr>
<tr>
<td>Spreading (joint)</td>
<td>-</td>
<td>Small to Big</td>
<td>Big to Small</td>
</tr>
<tr>
<td>Swelling</td>
<td>Articular &amp; Puffy</td>
<td>Articular, Engorged</td>
<td>Extra articular, Pitting</td>
</tr>
<tr>
<td>Pain</td>
<td>Mild</td>
<td>Severe, Burning</td>
<td>Severe, Like Scorpion bite</td>
</tr>
<tr>
<td>Crepitus</td>
<td>Severe</td>
<td>Moderate</td>
<td>Absent</td>
</tr>
<tr>
<td>Stiffness</td>
<td>Severe</td>
<td>Severe</td>
<td>Moderate</td>
</tr>
<tr>
<td>Skin involvement</td>
<td>Not involved</td>
<td>Involved</td>
<td>Not involved</td>
</tr>
<tr>
<td>Deformity</td>
<td>Present</td>
<td>Present</td>
<td>Absent</td>
</tr>
<tr>
<td>Function</td>
<td>Painful, Restricted</td>
<td>Restricted, Immobile</td>
<td>Painful, Restricted</td>
</tr>
<tr>
<td>Response to oil</td>
<td>Marked relief</td>
<td>Moderate relief</td>
<td>Aggravates</td>
</tr>
</tbody>
</table>

39
OSTEOPHARTHRITIS

Osteoarthritis is a degenerative disorder of the joint and it is classified as

1. Primary
2. Secondary

Primary Osteoarthritis:

Primary OA is also called 'wear and tear' arthritis and degenerative joint disease. In this, due to risk factors there will be degradation of articular cartilage which leads to joint narrowing, remodeling of joint by forming osteophytes and eventually a non functioning, painful joint. Although OA is a non inflammatory process mild inflammatory changes occur in the synovium. It is also called idiopathic OA as no predisposing factor is apparent.

Secondary OA:

It has known underlying cause including congenital or acquired incongruity of joints, trauma, crystal deposits etc. But it cannot be distinguished from primary OA pathologically.

Osteoarthritis is considered as the dynamic repair process of synovial joints. It is more prevalent in aged persons and it is considered as the very common form of arthritis. Osteoarthritis is characterised by:

A Loss of articular cartilage where there is maximum pressure.
A Formation of new bone (Osteophyte) with remodeling of joints.

Most effected joints are knee and hip joint where as knee is most effected than hip. Osteoarthritis is very common in Elbow, Glenohumeral joint and Ankle joint also.

Effected joints:

Interphallangeal joints

*Heberden’s nodes:* Enlargement of distal interphallangeal joints.
*Bouchard's nodes:* Enlargement of proximal interphallangeal joints.

Erosive osteoarthritis: This is present in distal and/or proximal interphallangeal joints.

*Generalised osteoarthritis:* Characterised by involvement of three or more joints or group of joints.

*Thumb base osteoarthritis:* In this, there will be squared appearance of thumb base.
**Hip osteoarthritis:** In this, the pain will be in inguinal area but may be referred to buttock or proximal thigh. Flexion may be painless initially but internal rotation will have pain. Loss of internal rotation occurs early, followed by loss of extension, adduction, and flexion due to capsular fibrosis and/or osteophytes.

**Knee osteoarthritis:** Knee osteoarthritis will be manifested in three ways.

- **In medial femotibial compartment:** It leads to vagus deformity [Bow-leg]
- **In lateral femotibial compartment:** It leads to valgus deformity [Knock-knee]
- **In patellofemoral OA:** There will be positive shrug sign.

**Spine osteoarthritis:** This involve Apophysial joint, Intervertebral disc and also there may be involvement of paraspinous ligaments.

**Pathogenesis:**

For the normal functions of the joint, there should be normalcy of the joint tissues such as cartilage, bone synovium, capsule, ligament, and muscles.

In the case of Primary osteoarthritis, the cause is considered as unknown. But in case of Secondary osteoarthritis, a clear cause of Trauma or ligament rupture may be important. By the mechanical, metabolic, genetic and constitutional loads there may be damage to the parts of synovial joint and there may be need to repair.

Some times due to the causes, there will be slow but efficient process of manifestation that lead to anatomically altered but pain free functioning joint. This is called as Compensated osteoarthritis.

Some times due to the chronic causes or due to poor repair response, there will be progressive tissue damage and association with more frequent symptoms and this is called as **OA patient with Joint failure.**

**Cartilage changes:**

In normal cartilage, there are no cell division but in the articular cartilage, chondrocytes metabolically active the cells that are responsible for the synthesis of cartilage matrix throughout life. Matrix degradation is done by proteolytic enzymes such as Aggrecanase, which degrades the aggrecan, matrix proteinases [degrades metal I proteins], Collagenase, and Stromelysin.

Chondrocytes increase their production of matrix components and devide to produce nests of metabolically active chondrocytes. So there will be maximum
degradation and also production of Aggrecan components. But there will be fall in the concentration of the Aggrecan. The decrease in the size of hydrophilic Aggrecan molecules increases the water concentration and swelling pressure in cartilage. There will be further destruction of the Type II collagen and it makes the cartilage incapable to bearing weight. By this condition of cartilage there will be fissuring of the cartilage surface [Fibrillation], development of deep vertical clefts, localised chondrocyte death and decreased cartilage thickness. These all changes are maximum in weight bearing part of the joint rather than whole part. The changes in cartilage surface leads to the deposition of Calcium pyro phosphate and Apatite crystals especially in mid and superficial zones. The bone below the compromised cartilage increases its trabecular thickness. Holes (cysts) may develop. As a result there is increased pressure in bones because cartilages fail in load transmitting function. So there will be production of new fibrocartilage in the margins of the joints which undergoes endochondral ossification and forms as Osteophytes. This remodeling and cartilage thickening slowly alter the shape and the size of the joints. The synovium also shows various changes in manifestation of Osteoarthritis. Osteochondral bodies commonly occur in synovium. The Joint capsule also thickens and contracts usually retaining the stability of remodeling joint. The skeletal muscle which gives the strength to joint will shows some fibre atrophy.

Clinical features:

1. Joint pain:

Joint pain is mainly related to the movement, weight bearing and it is relieved by the rest. Here usually only one or a few joints are painful.

The causes for joint pain in osteoarthritis patients are,

Source
1. Synovium Inflammation.
2. Sub chondral Medullary hypertension, Micro fractures
3. Osteophyte stretching of periosteal nerve endings.
4. Ligaments Stretch.
5. Capsule Inflammation, Distention.
2. Restricted movement:
   Restricted movement is due to Capsular thickening and also by the blocking of Osteophytes.

3. Crepitus:
   Crepitus will be palpable or sometimes audible due to the rough articular surfaces.

4. Bony swelling:
   Bony swelling is seen around joint margins due to the presence of osteophytes.

5. Joint tenderness:
   Tenderness is present in joint line or periarticular surfaces.

6. Joint instability.

7. Wasting of muscles.

8. No or only mild synovitis. Radiographic findings of Osteoarthritis:
   The main use of a Radiograph is to assess the severity of structural changes in the joints.
   · Focal narrowing of the joint space without evidence of destruction of margins.
   · Formations of osteophytes at the margins of articular surface osteophytes are osseous outgrowths of cortical and cancellous bone, which blends with normal bone beneath it.
   · Sub chondral sclerosis.
   · Cyst like lesions are seen.
   · Osteo chondra’ (loose) bodies are sometimes seen .
   · Deformities of joints are seen .
   · Chondrocalcinosis may be an additional feature particularly in Knee OA

Treatment:
There is no specific treatment for OA. Treatment is mainly advised for reducing the pain, minimise the disability and also to reduce structural abnormalities. The following steps are considered as the management of Osteoarthritis.

For reducing the Pain:
Uses of NSAIDs are advised. (Non Steroidal Anti-inflammatory drugs) which are medications as well as having pain relieving (analgesic) effects, have the effect of reducing inflammation when used over a period of time.
Full explanation about Osteoarthritis:
- This is to avoid risk factors such as Trauma, Obesity etc.
- Advice about appropriate exercise
- This should cover both strengthening and aerobics, to strengthening of joints.
- Total joint replacement is required for the minority of people with large joint Osteoarthritis.

(1) Preface:

In 21st century dietary system, varieties of foods, transportation, style of work, daily expenditure season's changes are alter alot. But the perpetual concept of Tridosha Siddhanta mentioned in Veda is still applicable."

The purposes of Ayurveda are to cure the diseases, good dietary system and good daily expenditures of human beings for four yuga i.e. Ages, therefore Ayurveda is serviceable in 21st century.

The formation and degeneration of body and diseases is mentioned in Charak Samhita Rasayan Addhyaya Pada two that Total human being diseases are performed due to dietary consumption system.

(1) Excessive intake of sour, Pungent Salty Rasas.
(2) Food with excess Kshara.
(3) Dry vegetables or preserved vegetables.
(4) Dry meat or preserved meat.
(5) Food with excessive starch contains.
(6) Grain prior to one year like wheat Barley.
(7) Legumes like beans, gram etc.
(8) Incompatible food.
(9) Dry food.
(10) Food with various forms like paste, powder of sesame.
(11) Non obeisance / obesinal food
(12) Sprouted food grains.
(14) Excessive consumption of food.
(15) Daily alcohol consumption.
(16) Abhisheyandi food, Mucusy food.
(17) Improper meal timings.
(18) Over coiter.
(19) Excessive exercise
(20) Excessive Anger, Sorrow frightened.

Due to this

↓

Vitiation and Increase of Vatadi Doshas.

↓

loosening in muscles and tendons

↓

loosening of joints

↓

Vitiation of Rakta Dosha

↓

Less formation of Bone marrow in Bones

↓

Lossening of Body

↓

Low production of shukra dhatu

↓

Dyspnoea

↓

Loss of Immunity Power

Thus human beings cannot enjoy the life of hundred years and he suffers from several diseases.
Details of ingredients of Balamoola Shashtishali pindasweda:

Bala – (Sida Cordifolia Linn.)

Properties:

Guna: guru, snigdha, picchila,
Karma: vatashamana by snigdha & madhura properties, pittashamaka by sheetaveerya, and madhura properties hence used in diseases induced by vata and pitta.


Part used: Root, seeds and leaves

Dose: powder 1 to 3 gms.

Formulations: Balaquath, baladighruta, chandana bala lakshadi tail

Dosha: alleviates vata & pitta

Dhatu: Rakta, mansa, shukra, oja

Mala: Purisha

Bala is of snigdha guna, sheeta in veeryas, madhur in rasa, (sweet in taste), vrushya (aphrodisiac), Tridoshnashak, works on raktapitta, kshayrognashak and also helps in eleveting bala (power) and Oja and Anuloman specially acts on rakta, meda, asthi, majja dhatus act as medo dhatwagni vardhana so it can promote regeneration of cartilage it is sandhania, vrushya and rasayan so can help in breaking the pathogenesis of these disease as wall as can be helpful in arresyting the degenerative pathology.

Milk (dugdha): which is a dravya in jeevaneeya varga. Generally milk is sweet, unctuous, cold preenana (increase rasa dhatu), brumhana (increase mansa dhatu) vrushya (increase shukra dhatu), medhya (increase memory), balya (increase strength), manskar, jeevaneeya (raktagani, raktavahasrotogami and potent pacifier of pitta), sandhanaka (catalyses of healing).

Cow’s milk is jeevaneeya, rasayana (nourishes all dhatus), useful for emaciated and debilitated people, increases intellect, strength and it increases oja dhatu. Its having vata pacifying property.

Tila (sesame) oil: Sesamum indicum Linn.:
Properties :-

Guna : guru, snigdha.

Rasa : madhura, Uparasa : kashaya, tikta, Vipak : madhura, Dosha : vatashamaka, kaphapittaparakopaka, tridoshghna (after processing)

Uses : excellent snehan, analgesic, wound healer, useful in dental health, skin and hair, increases meda, mansa

Strotopgamitva –

Dosha : vataghna, kaphapittavardhaka,

Dhatu : mansa, shukra, meda, majja, asthi, raktta, rasayana,

Mala : Keshya, purisha, mutra

Tila Taila (Seasamum indicum) is useful for bath, abhyanga (massage) and avgaha sweda. Likely it is used in Basti (medicated enemas), paan, nasya (oleation), used for karnapuran and netra-tarpan. It goes to deeply seated dhatus, nourishes the joints, useful in joint dislocations, controls pain and stiffness. Unctuousness enhances the effect of internal medicine. It is not only that medicated tila taila, it’s very useful in the treatment of number of diseases.

Shasti-shali : shashti-shali means the shali rice which grows in 60 days.

Properties :-

Guna : snigdha, vrushya, baddha, pathyakara, laghu, sheeta, mutral

Rasa : madhura, uparasa : alpa kashaya, veerya : sheeta

Vipak : madhura, Dosha : tridoshaghna

Pindasweda

Dhatukshayajanya Janu Sandhigata Vata most commonly occurs in old age where Vatavruddhi and dhatukshaya is predominant, considering all these factors the Balamoola shashti-shali pinda sweda and appropriate diet and behavior or life is planned in this disease.

Balamoola shashtishali pindasweda : in which shashtishali processed in Balamoola quath and siddha milk is used for swedana. It provides swedana, snehana and brumhana simultaneously, it is widely used in vata vitiated conditions.
It is brumhan type of swedana useful in nourishing the joints controlling the pain and stiffness helps in eliminating the metabolites accumulated helps in enhancing the effect of internal medicine.75

Bala is of snigdha guna, sheeta in vcerya, madhur in rasa, (sweet in taste), vrushya (aphrodisiac), Tridoshnashak, works on raktapitta, kshayarognashak and also helps in eleveting bala (power) and Oja.

Balamoola used in pindasweda is ushna and snigdha guna. Acts as vatashamak and decreases the stiffness of the joint. Balamoola also helps in removing the accumulated metabolites from the joints. Also helps in reducing pain.

Materials required :

- Shashtishali 200 gm
- Balamoola 200 gm
- Cow’s Milk 1.5 ltrs.
- Tila (sesame) oil [For purva-karma] 30 ml
- Earthen pot, wide mouthed vessels, cotton cloth, twines

**Preparation of medicine**

**Preparation of quath**

Take 200 gm of crushed balamoola in an earthen pot. Add 3 liters of water to it. Put it on mild fire and reduce to half to get 1.5 liter quath.

**Preparation of shashtishali Rice**

Take 200 gm of shashtishali rice in vessel. Add 750 ml bala quath and 750 ml of cow’s milk to it. Keep the vessel in mild fire until the rice gets cooked well to semi-solid consistency.

**Preparation of pottali**

Divide the cooked rice in 4 equal parts. Prepare 4 pottlies as per proper pottali preparation method.

**Procedure**

Ask the patient to lay down on the swedana table, apply oil on head and body (samvahana). Do gentle massage for five minutes (as per our study aim do gentle
massage on knee joint / joints). Take the remaining 750 ml balamoola quath and 750 ml cow’s milk in wider mouth vessel. Dip the pottali in the mixture. Heat the vessel on mild fire. Take heated pottali in the vessel. Check the temperature of the pottali by keeping it on hand. If feels comfortable, apply it over the knee joint / joints in circular manner. While doing the process apply equal pressure on the pottali so that the contents will come out through the cloth. The process is done for 30 minutes for joint / shashtishali using thick cotton cloth. As soon as the process is completed do the abhyanga with warm tila (sesame) oil. The knee joint / joints covered with a thick blanket so that temperature loss can be prevented.

Benefits of the Balamoola shashtishali pindasweda:
It provides swedana, snehana and brumhana simultaneously.

Mahayograj Guggul:-

Mahayograj Guggul helps in degenerative disorder of bones act as a asthi sandharak helps in bone repair it will also help to halt the degenerative changes and repair of degenerative cartilage it also helps in reduction of pain.

All dravyas used in Mahayograj Guggul act as brumhan dravyas. They helps to halt the progression of degeneration in joints. Guggul act as anti inflammatory agent. So helps in reducing the pain. Mahayograj Guggul acts on Asthi and stops their degeneration.

Preparation

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shunthi</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Pippalmul</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Pippali</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Chavya</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Chitrak</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Hingu</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Ajmoda</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Sarshap</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Jeerak</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Krishnajire</td>
<td>2.5 g</td>
</tr>
<tr>
<td>Renukbeej</td>
<td>2.5 g</td>
</tr>
</tbody>
</table>
Indrayava : 2.5 g  
Patha : 2.5 g  
Vidanga : 2.5 g  
Gajpimpali : 2.5 g  
Katuka : 2.5 g  
Ativisha : 2.5 g  
Bharangi : 2.5 g  
Vacha : 2.5 g  
Murva : 2.5 g  
Triphala : 50 g  
Guggulu : 100 g  
Vanga bhasma : 40 g  
Roupya bhasma : 40 g  
Loha bhasma : 40 g  
Abhrak bhasma : 40 g  
Mandur bhasma : 40 g  
Rassindur : 40 g  
Nag bhasma : 40 g

All ingredients without guggul mixed totally. Then give fire to purified guggul and pour the mixed medicine into it and make the tablets from the mixture. Keep this tablets into ghee coated earth pot.

Anupan : Koshanjal is given alongwith Mahayograj guggul

Route of administration : Oral.
List of Previous work done on this disease, drugs of related subject.

Previous work done:

Literary work includes work done on Sandhigata Vata, Pindasweda, Guduchi, Basti, Guggul, Gokshura etc.

Clinical work includes the clinical trials conducted on Sandhigata Vata using some Guggul kalpa, Basti, Upanaha sweda and some Rasayana drugs etc.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Name</th>
<th>Year</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Concept of Dhatu and Dhatvagni with special ref. to Asthidhatu and Asthidhatvagni</td>
<td>Bhatt M. G.</td>
<td>1955</td>
<td>GA University</td>
</tr>
<tr>
<td>2) Vatasanshaman &amp; Vedanasthapana</td>
<td>Avasthi V. S.</td>
<td>1960</td>
<td>GA University</td>
</tr>
<tr>
<td>3) A comparison study of Mallasindur prepared by two different methods in relation to its effect on Sandhigata Vata.</td>
<td>Gour. J</td>
<td>1963</td>
<td>BHU, Varanasi</td>
</tr>
<tr>
<td>4) Vata Vyadhi with special reference to Sandigatavata</td>
<td>Karunalata H.W.</td>
<td>1963</td>
<td>GA University</td>
</tr>
<tr>
<td>5) Snehan therapy in Nervous system diseases</td>
<td>Vasanta S.</td>
<td>1966</td>
<td>GA University</td>
</tr>
<tr>
<td>6) Sandhigata vikara</td>
<td>Vanjakshama T.</td>
<td>1966</td>
<td>GA University</td>
</tr>
<tr>
<td>7) Shotha &amp; Shoola chikitsa in Sandhigata Vata roga</td>
<td>Shrama M. B.</td>
<td>1967</td>
<td>GA University</td>
</tr>
<tr>
<td>9) Clinical evaluation of Tinosporacordifolia in Amavata and Sandhigata Vata</td>
<td>Mhaiskar V. B.</td>
<td>1980</td>
<td>GA University</td>
</tr>
</tbody>
</table>

Karmarkar B.
<table>
<thead>
<tr>
<th></th>
<th>Study</th>
<th>Author</th>
<th>Year</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Study of Shuddha Guggul on Rheumatoid arthritis</td>
<td>Pandit, C. P. Shukla</td>
<td>1981</td>
<td>GA University</td>
</tr>
<tr>
<td>11</td>
<td>A clinical study of the effect of Sihanad Guggul on Sandhivata.</td>
<td>Maheshwari V.</td>
<td>1983</td>
<td>AP University</td>
</tr>
<tr>
<td>12</td>
<td>A study of Matra Basti with special ref. to its effect on Vatavyadhi.</td>
<td>S. S. Patil</td>
<td>1985</td>
<td>RG University</td>
</tr>
<tr>
<td>13</td>
<td>Sandhishool &amp; Sandhi Shoth &amp; Amrutadi Guggul.</td>
<td>Deshpande R. R.</td>
<td>1985</td>
<td>Pune University</td>
</tr>
<tr>
<td>14</td>
<td>Study on Sandhigata Vata with special reference to its management</td>
<td>Suryanarayan K.</td>
<td>1986</td>
<td>GA University</td>
</tr>
<tr>
<td>16</td>
<td>Evaluation of Snehan &amp; Swedan in the management of Sandhivata &amp; Amavata.</td>
<td>Pathak Bhavana</td>
<td>1989</td>
<td>BHU Varanasi</td>
</tr>
<tr>
<td>17</td>
<td>A study on Sandhi vata &amp; its management</td>
<td>Tirumaleshwar B. S.</td>
<td>1989</td>
<td>RG University</td>
</tr>
<tr>
<td>19</td>
<td>Aetiopathogenesis of Sadhigata Vata (O. A) &amp; its treatment with some Indigenous drugs.</td>
<td>Chakraborty B.</td>
<td>1991</td>
<td>RG University</td>
</tr>
<tr>
<td>20</td>
<td>Role of Guduchisiddha Kshirabasti in treatment of Sandhigata Vata vyadhi.</td>
<td>Pendse N. M.</td>
<td>1991</td>
<td>Pune University</td>
</tr>
</tbody>
</table>
21) Clinical study of Shunthi Yoga in treatment of Sanghigatavata

22) Clinical effect of Shastishali in Sandhivata

23) Study of Upnahasweda in Sandhigata Vata

24) A clinical study on effect of some Rasayana drugs along with Abhyanga & Swedan wsr to Sandhigata Vata

25) To evaluate the efficacy of Trayodashanga guggul & Swedan Karma by plain & medicated wax bath in cases of Sadhivata

26) The effectiveness of Commiphora Mukul of Oestoarthritis of the knee, An outcome study

27) The effect of Sahachara Tail on Sandhigata Vata

28) A clinical evaluation of Majjabasti with particular Reference to Sandhigata Vata

Vinod Bihari 1991 Utkal University.

Sinha A.K. 1993 Utkal University

Kulkarni S. B. 1994 Pune University

Khuje S. I. 2001 Mumbai University

Rani Sushma 2002 Lucknow University


Sharma. L. 2004 BVDU, Pune

Vaidya S. 2005 Pune University

Somesh

Purpose of selected subject

In our routine practice we commonly get the patients complaining of joints and degeneration of bones.
This is now increasing day by day. If we look, defective food habits, malnutrition factors, deficiency of essential vitamins and minerals in male, health of female is also badly neglected. Improper diet, post delivery negligences worsens their condition more. Also due to menopause leads to calcium deficiency which precipitates degenerative bone diseases

There are multiple therapies for the degeneration of bones. But I have chosen this subject for dissertation because Ayurvedic sages inspired me for definite remedy of degenerative joint diseases and this is my effort to put a rayon effective treatment for the same.

We have limited the scope of work to knee joint only as –

a) It is the load-bearing joint of the body.
b) Most commonly affected joint in Osteoarthritis
c) Easy availability of the patients.
d) Limitations of staff, funds and time.