

UNDERSTANDING THE ETIOPATHOLOGY AND SYMPTOMOLOGY OF
SANDHIGATAVATA W.S.R. TO OSTEOARTHRITIS

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ABSTRACT

In Ayurveda, *Sandhigataavata* is described as a *Vatavyadhi*. *Sandhigataavata* can be defined as a joint disorder with symptoms of *Shotha*, which is palpable as air filled bag (*Vata Purna Driti Sparsha*) and pain on flexion and extension of joints (*Akunchana Prasarna Vedana*). In modern science the similar condition of joint is explained as Osteoarthritis. *Sandhigataavata* occurs due to vitiated *Vata Dosha*. The two main causative factors for vitiation of *Vata* i.e. *Dhatukshaya* (degenerative pathology) and *Maragavarodha* (obstructive pathology in channels). Osteoarthritis is the most common arthritic condition affecting ageing population characterized by progressive degenerative changes in the articular cartilages over the years, particularly in weight bearing joints. It is a degenerative joint disorder with the symptoms of joint pain, swelling, restricted and painful movements. Due to these similarities *Sandhigataavata* and Osteoarthritis can be taken as similar disease condition. The present article is an attempt to explain the etiopathogenesis of *Sandhigataavata* co-relating with Osteoarthritis.

KEYWORDS: *Sandhigataavata*, Osteoarthritis, *Dhatukshaya*, *Moragavaratha*.

INTRODUCTION

In old age, all *Dhatu* undergo *Kshaya* which leads to *Vata Prakopa* and thus make the person prone to much disease. *Sandhigataavata* is one such condition, which usually starts with ageing. It appears mostly in the early forties but due to over use of joint, change in lifestyle, diet and obesity, this disease has now become prevalent in young generation too. *Sandhigataavata* is one of the most common *Vatavyadhi*, which can be co-related with osteoarthritis. Osteoarthritis is a slowly progressive joint disease and a major cause of disability, limiting activity and impaired quality of life especially in elderly people.

Sandhigataavata is described under *Vatavyadhi* in all *Samhitas* and *Sangrah Grantha*. *Acharya Charaka* was first to describe separately with name *Sandhigata-Anila*, with symptoms of *Shotha* which on palpation feels as bag filled with air (*Vata Purna Driti Sparsha*) and *Shula* on *Prasarna* and *Akunchana*.^[1] *Shula* and *Shotha* were also described by *Shushruta*, which resulted in the diminution of movement at the affected joint (*Hanti*).^[2] *Madhavkar* does not explain *Shotha*, although he does mention *Atopa* as a symptom of *Sandhigataavata*^[3], which can be interpreted as an air filled bag.

Thus, the disease *Sandhigataavata* can be defined as a joint disease with symptoms of *Shula*, which aggravates by movements, and *Shotha* with complete restricted movements at later stages. Due to these similar

symptoms *Sandhigataavata* is comparable with Osteoarthritis.

DEFINITION OF SANDHIGATAVATA

वातपूर्णदृतिस्पर्शः शोथः संधिगतानिलो

प्रसारणआकुंचनयोः प्रवृत्तिश्चसवेदना॥ (Ch.Chi.28/37)

There is no clear definition of *Sandhigataavata*, but the *Charaka Samhita*, a classical *Ayurvedic* text, states that after *Nidana Sevana*, aggravated *Vata* enters the *Sandhi* and establishes itself, causing swelling of the joints, which feels like a bag filled with air, and the pain occurs primarily during the flexion and extension of the joints.

CLASSIFICATION OF SANDHIGATAVATA

It can be classified in different ways as there is no classification is mentioned in our texts available.

A) According to pathogenesis of *Vata* it can be classified as below.

- Dhatukshayajanya*: *Kshaya* of *Dhatu*s is the main cause of *Vatavyadhi*.
- Avaranajanya*: The primary cause of *Avarana* of *Srotasa* by *Kapha* or *Meda*.
- Both: *Kshaya* as well as *Avaranajanya*.

B) According to *Nija* and *Agantuja*, it can be classified in two varieties.

- Nija Sandhigataavata*
- Agantuja Sandhigataavata*

NIDANAPANCHAKA OF SANDHIGATAVATA

NIDANA- The study of *Nidana*, *Purvarupa*, *Rupa*, *Upashaya*, and *Samprapti*, collectively known as *Nidana Panchaka*, yields understanding of disease. The aggravating causes for *Vata* that can cause *Sandhigatavata* are as follows.^[4] (Cha. Chi. 28/14-22).

- *Aharaja* :- *Ruksha* - *Laghu* – *Visthambhi* - *Sheeta* – *Katu* – *Tikta*, *Kashaya Annasevena*, *Sheetapana*, *Adhyasana*, *Viruddha* – *Asatmya* – *Pramita Mithya Ahara* etc.
- *Viharaja* :- *Ati Vata* – *Atapa sevana*, *Ati Plavana*, - *Vyayama* – *Vyavay* – *Chesta*, *Vegavidharana*, *Ratrijagarana*, *Divaswapa*, *Marmaghata*, *Abhighata* etc.
- *Manasa* :- *Chinta*, *Krodha*, *Shoka*, *Bhaya* etc.
- *Kalaja* :- *Abhra* (cloudy season), *Aparahna* (evening), *Aparatra* (end of night), *Sheetakala* (winter), *Varsha* (rainy season) etc.

Other than these, the factors which can produce *Avarana* of *Kapha* or *Meda* and the factors which causes *Dhatukshaya* also results in *Sandhigatavata*. *Kshaya* can produce aggravation of *Vata* and *Kha-vaigunya* in *Sandhishthana*, leading to *Sandhigatavata*. *Medovridhi* can also produce *Sandhigatavata*; because of *sthaulya* weight-bearing joints have over burden and may lead to *Sandhigatavata*.

PURVARUPA^[5] The *Purvarupa* manifests in the *Sthanasanshraya* stage of *Shadkriyakala*. *Charaka* has quoted that *Avyakta Lakshanas* of *Vata Vyadhi* are to be taken as its *purvarupa*. Hence, mild or occasional *Sandhishhula* prior to manifestation of disease *Sandhigatavata* may be taken as *Purvarupa*.

RUPA^[6] -The symptoms which demonstrate a manifested disease are included under *Rupa*. A clear understanding of *Rupa* is inevitable for accurate diagnosis. In *Sandhigatavata* the main cardinal symptoms are mentioned which are common for all joints. The main symptoms are as follow.

- 1) *Sandhishhula*: In *Sandhigatavata*, *Shula* is a common symptom. Because of *Vata prakopa*, movements like *Akunchana* and *Prasarana* frequently aggravate pain because of *Vata prakopa*.
- 2) *Sandhishotha*: All *Acharyas* have mentioned the *Vatapurna druti sparsh* form of *Shotha*. Because it is a *Vatika* variety, the swelling seems like a bag filled with air when palpated.
- 3) *Sandhihanti*: *Charaka* has mentioned this symptom as a painful *Prasarana* – *Akunchana Pravritti*. First *Sushruta* explained this symptom followed by *Madhvakara*. However this symptom may not be seen in early stages. When the disease aggravated the vitiated *Vatamay* produce *Stambha* and their inability of movements.
- 4) *Sandhisphutana*: *Sandhigatavata* is localized *Vata Vyadhi* in which *Prakupita Vayu* affects *Sandhi*. This *Sthanasamsraya* is result of *Srotoriktata* present at *Sandhi*. That means *Akash Mahabhuta* is increased at the

site of *sandhi* and *Shabda* is a *Guna* of *Akash*. Hence, in the process of extension and flexion, *Shabda* is heard or palpate

UPASHAYA-All drugs, diet and regimen which give long lasting relief in *Sandhigatavata* may be taken as *Upashaya*. For example *Abhyanga*, *Swedana*, *Ushna Ahara*, *Ushna Ritu* etc.

ANUPASHAYA-All drugs, diet and regimen which exaggerate the disease are taken *Anupashaya* for that disease. Also *Hetus* of that disease can also be taken as *Anupashaya*. The diet having *Laghu*, *Ruksha*, *Sheeta Gunas*, *Anasana*, *Alpasana*, *Sheeta Ritu*, evening time can be considered as *Anupashaya* as they increase pain.

SAMPRAPTI OF SANDHIGATAVATA (PATHOGENESIS): *Samprapti* is the process extending from *Nidana Sevana* to *Vyadhi Vyaktavastha*. Due to *Nidana Sevana*, the *Vatagets Prakupita* which gets accumulated in *Rikta Srotasa* leading to the various generalized and localized disease of *Vata*.^[7]

देहे स्रोतांसि रिक्तानि पूर्यित्वाऽनिलो बली
करोति विविधान् व्याधीन् सर्वाङ्गेकाङ्गसंश्रितान् (Ch.Chi.28/18-19).

Sandhigatavata has no specific *Samprapti* as per the texts available. It is classified under the heading of the *Vata Vyadhi*. It is a type of *Vata Vikara*, where the *Dushita Vata* involves the *Sandhi* and hence, the nomenclature – *Sandhigatavata*. All the factors contributing to the aggravation of *Vata Dosha* in the body are liable to produce the disease *Sandhigatavata*. The *Prakopa* of *Vata* may be due to two causes i.e. 1) *Avarana* and 2) *Dhatukshaya*. In the obese persons, *Sandhigatavata* is commonly seen. It may be due to *Avarana* of *Kapha* and *Meda*.

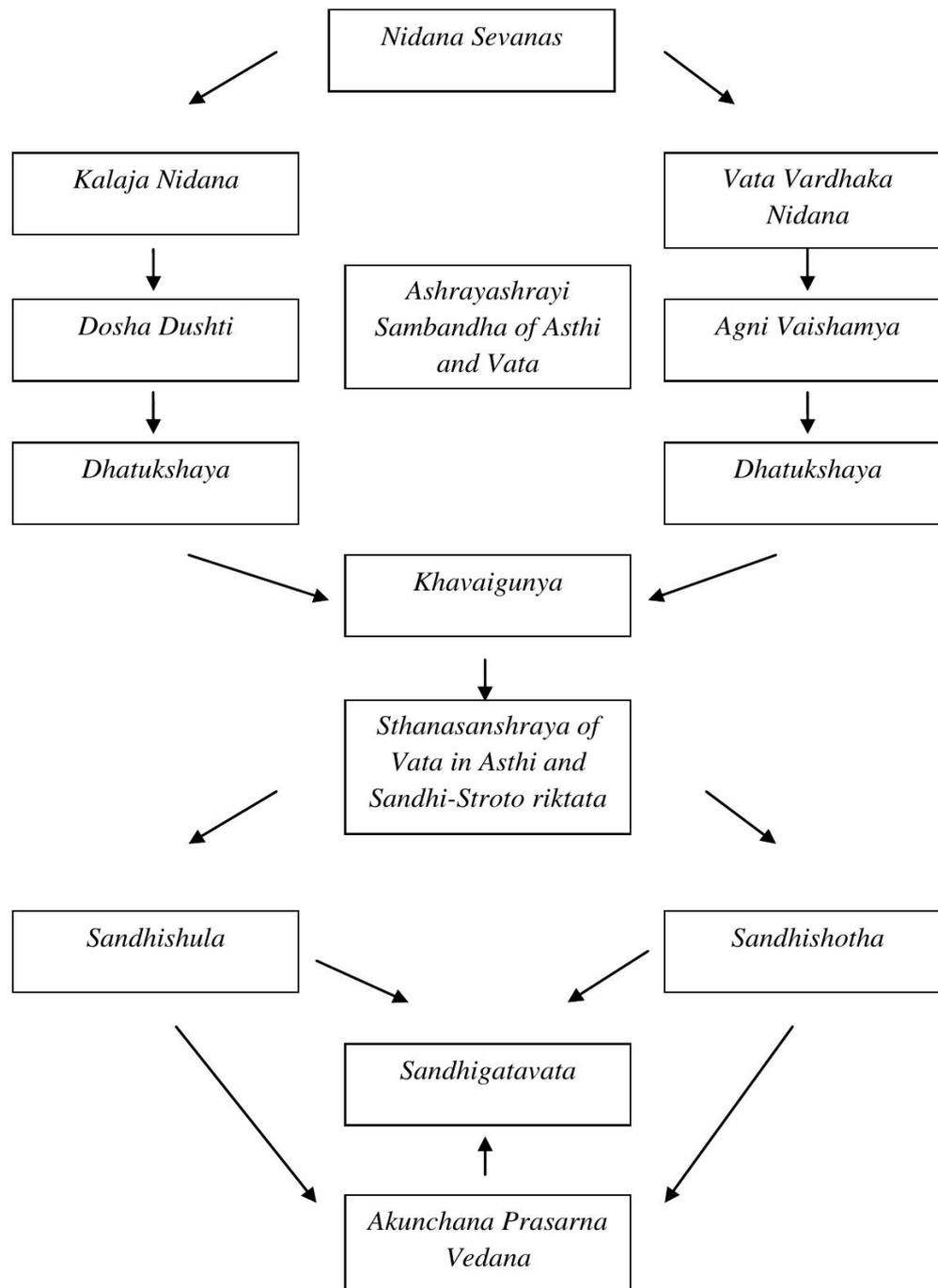
Sandhigatavata being a Degenerative disease and mainly occurring in the old age may also be considered due to the pure *Dhatukshaya*. In such type of disorders *Charaka* mentioned that the *Kha-Vaigunya* is mainly due to empty *Srotasa*.^[8]

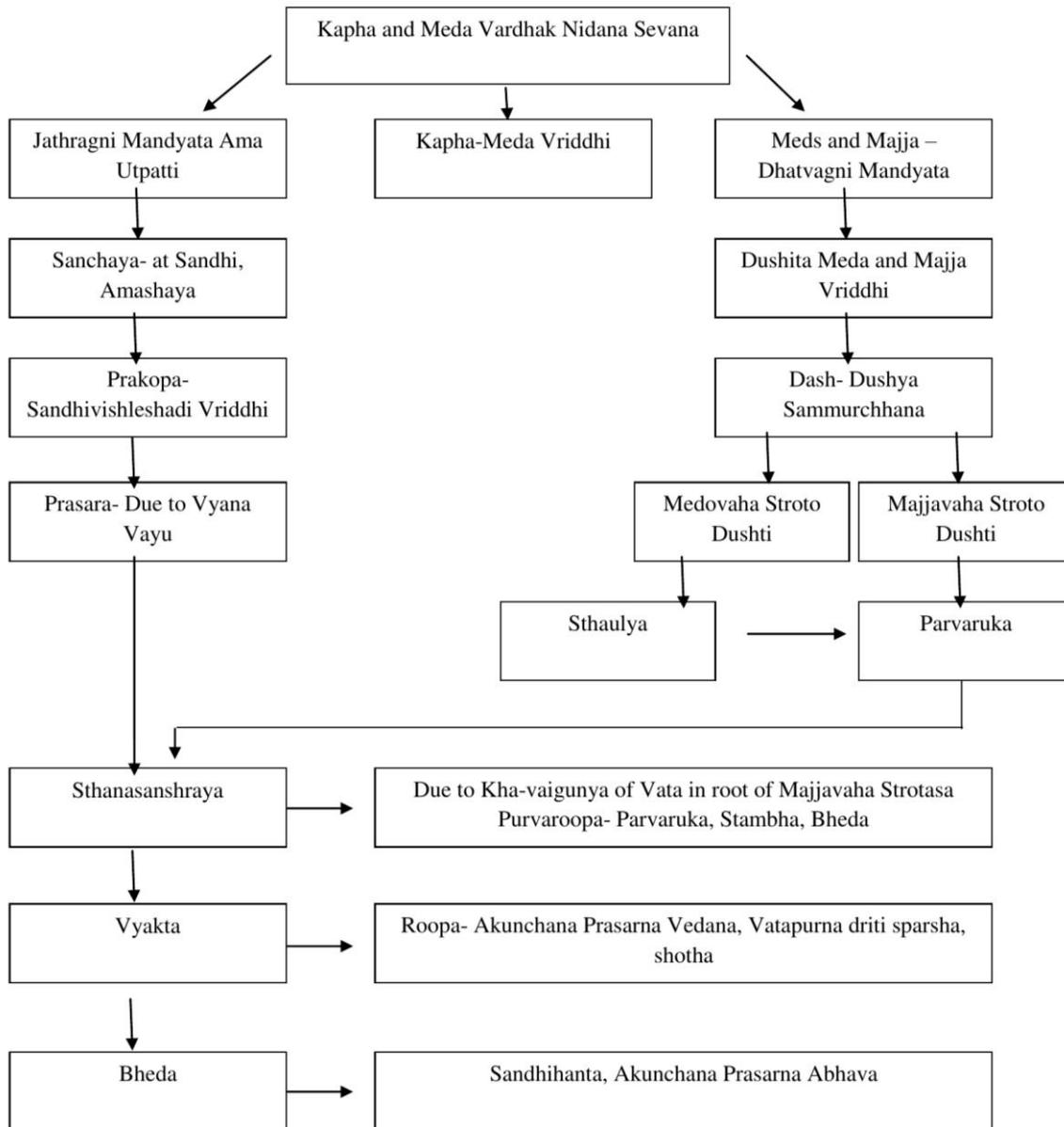
In other words, the *Vata Dosha* is aggravated due to different factors and *Vata* flows out of its *Ashaya* to circulate in the entire body and its constituents. During circulation it gets localized in the roots of *Majjavaha Srotasa*, i.e. *Asthisandhi*. In the *Majjavaha Srotasa* the *Khavaigunya* may already present. Because unless there is *Khavaigunya* of *Srotasa*, the *Dosha* will not take *Ashraya*. The chief qualities of *Vata* are – *Khara*, *Ruksha*, *Vishad* and *Laghu*. *Sandhi* gives *Ashraya* to *Sleshaka Kapha* which has qualities like *Guru*, *Snigdha*, and *Mrudu*. When aggravated *Vatagets* localized in the *Sandhi*, it over powers *Kapha* and adversely affects its qualities. The chief function of the *Kapha* is to sustain or *Dharana*. This chief function of *Kapha* is destroyed by the aggravated *Vata*. Here the *Ruksha* and *Khara Guna*

of *Vata* are considered as antagonist for *Sleshaka Kapha* which eventually results in diminution of *Sleshaka Kapha* (synovial fluid). Due to this diminution of *Sleshaka Kapha* by *Sandhistha Vata*, the symptom *Akunchana Prasaranajanya Vedana* at joints takes place. Excessive accumulation of *Vata* at *Sandhi* by *Sandhistha*

Vata can cause *Vatapurna Driti Vata Shotha*. When aggravated *Vata* is localized into single joint, the disease will be reflected only in one joint, and if *Vata* is present in two or more joints, the disease will be represented by multiple joints involvement.

1) *Dhatukshayajanya Samprapti*^[9]



2) *Avaranajanya Samprapti**Samprapti Ghatak of Sandhigata Vata*

<i>Nidana</i> (etiology)	<i>Vata Prakopaka Nidana</i> (Ch. Chi. 28/15-18)
<i>Dosha</i>	<i>Vata</i> (Ch. Chi. 28/37) particularly <i>VyanaVayu</i> and <i>Sleshaka Kapha</i>
<i>Dushya</i>	<i>Asthi, Majja, Rasa</i> and <i>Meda</i>
<i>Srotasa</i>	<i>Asthivaha, Majjavaha, Rasavaha</i> and <i>Medovaha</i>
<i>Srotodushti</i>	<i>Sanga</i>
<i>Agni</i>	<i>Jatharagni-Manda</i> <i>Dhatwagni-Manda</i>
<i>Doshamarga</i>	<i>Marmasthi Sandhi</i> (Ch. Su. 17/112- 113)
<i>Rogamarga</i>	<i>Madhyama</i> (Ch. Su. 11/48-49)
<i>Udbhavasthana</i>	<i>Pakvashaya</i> (Ch. Chi. 28/37)
<i>Adhithana</i>	<i>Asthisandhi</i>
<i>Pratyatma Lakshana</i>	<i>Akunchana Prasaranajanya Vedana, Vatapurna Dritisparsha Shotha</i> (Ch. Chi. 28/37).

SAPEKSHA NIDANA (Differential Diagnosis)

Factors	Sandhigataavata	AmaVata	Vatarakta	Kostuka Shirsha
Amapradhanya	Absent	Present	Absent	Absent
Jwara	Absent	Present	Absent	Absent
Hrid Gaurava	Absent	Present	Absent	Absent
Prone age	Old age	Any age	-	-
Vedana	At Prasarana & Akunchana	Sanchari & Vrishchika DanshaVata	Punah Punah Utpatti & Shamana	Tivra
Shotha	Vatapurna Driti Sadrashya	Sarvanaga & Sandhigata	Mandala- yukta	Kostuka ShirshaVata
Sandhi	Weight bearing joints only	Maha Sandhi	Laghu Sandhi	Janu
Upashaya	Abhyanga	Ruksha Sweda	Rakta Shodhana	Rakta Shodhana

Definition of Osteoarthritis-OA, a common degenerative disease of the joint, affects approximately 10% of all the adults (men & women) and the prevalence increases with the age. The disease is characterized by focal areas of destruction of articular cartilage, sclerosis of the bone and hypertrophy of the soft tissues.

Osteoarthritis is the most common form of arthritis. It is essentially one acquired from daily wear and tear of the joint; however, it can also occur as a result of injury. It can affect both the largest and the smaller joints of the body. Commonly affected joints include the hip, knee, and first metatarsal phalangeal joint (MTP) and cervical and lumbosacral spine. In the hands, the distal and proximal interphalangeal joints and the base of the thumb are often affected.

CLASSIFICATION OF OSTEOARTHRITIS^[10]

Degenerative joint disease is divided into two types:

Disruption in the equilibrium which results in the disorganized pattern of collagen, and loss of articular cartilage elasticity.

This results in cracking and fissuring of the cartilage which leads to erosion of the articular surface.

Cartilage that has been damaged, cannot recover.

The cartilage will continue to wear away

Once the cartilage has worn away; bony surfaces will start to be affected

The bone will expand and spurs (osteophytes) will develop.

SYMPTOMS

- Pain
- Stiffness
- Oedema
- Crepitus
- Limitation of range of movement of joints
- Mechanical symptoms, such as buckling, catching, or locking
- Deformity

- Limping or Gait disturbances

Pain: Joint pain from OA is primarily activity-related in the early stages of the disease. Pain comes on either during or just after joint use and then gradually resolves. Examples include knee or hip pain with going up or down stairs, pain in weight-bearing joints when walking, and, for hand OA, and pain when cooking.

Stiffness: Stiffness of the affected joint may be prominent, but morning stiffness is usually brief (<30 min). Stiffness increases with the use of joint and it is reduced with rest.

Oedema: Swelling of the joint is often present and occurs as a result of inflammation of synovium and the surrounding bursae of the joint.

Deformity: Deformity may result from the weakness of the muscles and ligaments and from the absorption of the ends of bones. Typical Varus deformities are seen with instability in the later stages of the diseases.

Crepitus: Knee crepitus may be especially heard or felt when coming downstairs. It can be detected by feeling the joint with one hand while it is moved passively with the other.

Limitation of range of movement: Movement in the affected joints increasingly limited, initially as a result of the pain and muscular spasm, but later because of capsular fibrosis, osteophyte formation and remodeling of bone.

Limping and gait disturbances: This is a common symptom which occurs as a result of pain, stiffness and deformity of the joint.

CONCLUSION

Sandhigatavata is explained under *Vatavyadhi* in Ayurvedic *Samhitas*. *Sandhigatavata* is a joint disorder in which joints under stress and strain are affected commonly. Due to symptoms like *Shandishula* (pain), *Sandhishotha* (swelling), *Sandhisphutana* (crepitus) and *Akunchana Prasarna Janya Vedana* (pain during flexion and extension), *Sandhigatavata* can be taken as Osteoarthritis. So, this is an attempt to co-relate the disease *Sandhigatavata* with osteoarthritis.

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