



Review Article

A COMPREHENSIVE REVIEW ARTICLE ON SANDHIGATAVATA WITH SPECIAL REFERENCE TO OSTEOARTHRITIS

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ABSTRACT

The most common disease currently affecting a large population is *Sandhivata*. The term *Sandhivata* (considered as Osteoarthritis -OA in Ayurveda) is derived from two words *Sandhi* and *Vata*. *Sandhi* is considered as joint and *Vata* is one amongst the three *Dosha* namely *Vata*, *Pitta* and *Kapha*. *Sandhivata* affects most commonly the weight bearing joints, primarily the knee joint. *Sandhivata* is challenging to treat due to its chronicity, incurability, and complication. Treatment in contemporary health science (modern or allopathy) is aimed primarily to alleviating only symptoms temporarily and is accompanied by a variety of negative side effects, toxic effects, and unpleasant reactions. The aetiopathogenesis and symptomatology of *Sandhivata* are succinctly described in the Ayurvedic classics. One such chronic, inflammatory, and degenerative condition that significantly affects a person's quality of life is *Janu Sandhivata*, Which can be very well correlated with OA of the knee joint. Treatment approach in Ayurveda system of health care emphasis on *Aahaara* (diet)- *Vihara* (physical activities) as foremost measure in treating any disease followed with use of *Samshmana*, *Samshodhana* or *Shalya karma*. The current study focuses on a thorough analysis of *Sandhivata* with the aim of assessing and highlighting the effectiveness of various *Ayurvedic* treatments in patients with OA. An effort has been made to review numerous formulations mentioned in the Ayurvedic classics (like *Kwatha*, *Guggulu Kalpana*, *Ghrita*, *Taila*, *Gutika*, *Rasa Aushadhi* and *Panchakarma* procedures like, *Abhyanaga*, *Swedana*, *Basti*, *Janubasti*, *Rasayana* therapy, *Agnikarma*) pathological condition of *Sandhivata*, which may be helpful for clinicians and researchers for their clinical practice.

INTRODUCTION

According to epidemiology, the prevalence of OA is 22% to 39% in India. Women are more likely than males to develop OA.^[1] OA primarily affects people over the age of 40. By the age of 40, almost everyone has some type of pathologic alteration in their weight-bearing joints.^[2] In India, about 15% of the population suffers from arthritis due to inadequate nutrition.^[3] It is marked by symptoms like *Shula* (joint pain), *Shotha* (swelling), *Prasaarana Aakunchanayopravruttscha Vedana* (painful joint movement), and

Vata Poornadriti Sparsha (the diseased *Sandhi* resembles a bag stuffed with air). The aetiopathogenesis and symptoms of *Sandhivata* are briefly discussed in the Ayurvedic classics. Clinically OA in contemporary science is comparable to the description of *Sandhivata* found in traditional sources. The *Samhitas* and *Sangraha Granthas* together provide a description of *Sandhivata* under *Vatavyadhi*. All *Dhatu*s (tissues) undergo state of *Kshaya* (emaciation) in *Vriddhavastha*, which makes people more susceptible to various diseases and causes *Vataprakopa* (aggravation of *Vata*) and OA is one of them. Pain, edema, crepitus, and restricted joint motion are some of the symptoms. In Ayurveda, notions like "*Dhatu saithilyam*" (tissue flaccidity) and "*Dhatu kshayam*" (tissue emaciation) were used to describe degenerative disorders.^[4] OA is characterised by progressive breakdown of articular cartilage and

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formation of cartilage lesions (eburnation) at the joint margins (osteophytes), which results in chronic disability at older ages. The highest layer of cartilage tears and wears away. OA is of two types, primary (idiopathic) and secondary. In primary (idiopathic) osteoarthritis, the foremost common kind of the disease, no predisposing factor is clear. Secondary OA is pathologically indistinguishable from primary OA but is due to an underlying cause. [5] Age, gender, body weight, recurrent stress, and hereditary variables have all been identified as risk factors that are significant in the development of OA. [6]

AIMS AND OBJECTIVES

To analyze the *Nidana* (causes), *Samprapti* (pathophysiology) as well as the numerous therapy techniques stated in Ayurveda for the treatment of *Sandhivata* (osteoarthritis).

MATERIALS AND METHODS

The existing literature including the *Charaka Samhita*, *Sushruta Samhita*, *Astang Hridaya* and *Samgraha*, *Yogaratanakar*, *Bhavaprakash* and *Sharangadhar Samhita*, *Chakradatta*, *Bhaishajya Ratnavali* and other pertinent current books are all reviewed. Published articles on *Sandhivata* or Osteoarthritis and internet sources (CAM, PubMed, Google Scholar, MEDLINE etc) were used to review the treatment approaches mentioned to manage OA or *Sandhivata*.

OBSERVATIONS

Nidana (Causative Factors)

- Sannikrishta hetu-** *Ati Vyayama* (excessive physical activity), *Abhighata* (joint injury), *Marmaghata* (joint injury at a key site), *Pradhavana* (running).
- Viprakrishta hetu** – *Rasa* – *Kashaya*, *Katu*, *Tikta*, *Guna* - *Rooksha*, *Sheeta*, *Laghu Ahara* - *Alpahara*, *Vishamashana*, *Adhyashana*, *Pramitashana*, *Manasika* - *Chinta*, *Shoka*, *Krodha*, *Bhaya*, *Viharaja* – *Atijagarana*, *Vishamopacara*, *Ativyavaya* (excessive coitus), *Shrama* (physical activity), *Divasvapna* (day sleep), *Vegasandharana* (suppression of urges). [7]
- Other factors *Vataprakopa* can also be caused by living in *Jangaladesha* and at the end of the *Greeshma*, *Varsha* and *Shishir Kaal*. [8]

Risk Factors

- Injury (*Aghata*)
- Over use (*Atiyoga*)
- Age (*Ayu*)
- Obesity (*Sthoulya*)
- Genetics
- Occupational factors

Rupa (Clinical Features)

Sandhivata come under *Vatavyadhis* and so may not present any *Poorvaroop* (pre-clinical symptoms). The classical signs and symptoms are as below-

- The *Lakshana* of *Sandhivata* are described in *Charakachikitsasthana* as- *Vatapurnadratisparsha* (tenderness), *Shotha* (swelling), *Prasarana Kunchanpravritisavedna* (pain during extension and flexion of joints). [9]
- In *Sushruta Nidansthan Lakshana* are described as *Hanti sandhi* (stiffness), *Sandhi sopha*, *Sandhishola* (pain in joints), *Asthishosha* (degeneration). [10]
- In *Ashtangasangraha* and *Hridaya*, the *Lakshana* are described as- *Vatapurnadrati*.
- *Madhav nidan* has described the *Lakshan* of *Sandhivata* as *Hantisandhi*, *Sandhishool*, *Sandhiaatop* (crepitus).

Types

Although the *Bheda* (types) of *Sandhivata* are not defined in *Ayurveda* texts however it can be classified on the basis of the following

1. Based on *Samprapti*

- *Dhatukshayajanya* - Due to degeneration.
- *Avaranajanya* - *Avarana* of *Kapha* by *Vayu*.
- *Dhatukshaya* as well *Avaranajanya* [11]

2. It comes in two different types in the *Nija* and *Agantuja* lines

- *Nija* - As a result of the vitiation of *Vata* caused by *Dhatukshaya*, *Avarana* etc.
- *Agantuja* - As a result of trauma

Samprapti

There are several *Shatkriyakala* stages that occur from the beginning of *Dosha Dushya Dushti* until the evolution of the *Vyadhi*, which are explained by *Samprapti* and in *Sandhivata* it can be:

Dhatukshaya Janya

Old age is characterized by a predominance of *Vata Dosha*, diminished *Kapha* and impaired *Agni* and all of which contribute to suboptimal *Dhatu* production and ultimately degeneration. As *Kapha* decreases so the *Shleshakkapha* in the joints also decreases causing *Asthisandhi Kshaya*. If one continues to engage in *Vata*-aggravating activities the *Prakupita Vata* does *Sthanasamshraya* in the *Khavaigunayayukta Sandhi*.

Avaran Janya

Usually the weight-bearing joints in obese people develop *Sandhivata*. Due to its overproduction of *Medadhatu* that will result in obstruction and fails to nurture the *Uttrotar dhatu* that leads to *Kshaya*. *Avarana* of *Vata* will be brought on by the excessive

fat. [12] This vitiated *Vata* will cause *Sandhivata* when it settles in the joints.

Samprapti Ghatakas

- *Nidana* (causes): *Vata Prakopaka Nidana*
- *Dosha* (tissue): *Vata* esp. *Vyanavayu, Shleshaka Kapha*
- *Dushya*: *Asthi, Majja, Meda*

- *Srotas* (channel): *Asthivaha, Majjavaha* and/or *Medovaha*
- *Srotodusti*: *Sanga*
- *Agni* (digestion): *Mandagni*
- *Dosha Marga*: *Marmasthi Sandhi*
- *Roga Marga*: *Madhyam*
- *Udbhavasthana*: *Pakvashaya*
- *Vyaktasthana*: *Asthi – Sandhi*

Table 1: Sapeksha Nidana

Factors	<i>Janu</i> (OA)	<i>Sandhivata</i>	<i>Amavata</i>	<i>Vatarakta</i>	<i>Kroshtukshirsha</i>
<i>Amapradhanya</i>	-		+	-	-
<i>Jvara</i>	-		+	-	-
• <i>Hridgauraya</i>	-		+	-	-
Prone age	Old age		Any age	Any age	Any age
Vedana	<i>Prasaranaakunchana pravritti</i>		<i>Vrischikdanshavata and Sanchari</i>	<i>Mushikadamshavat vedana</i>	<i>Tivra</i>
Shotha	<i>Vatapurna driti sparsha</i> (affected <i>Sandhi</i> resembles a bag filled with air)		<i>Sarvang and Sandhivata</i> (Osteoarthritis)	<i>Mandala yukta</i> (circular patches)	<i>Koshtruksa shirsvata</i>
Sandhi	Weight bearing joint (knee joint)		Starts from small joints and later on affects bigger joints.	Small joints	Only <i>Janu</i> (knee joint)
Upashaya	<i>Abayanga</i>		<i>Ruksha Svedana</i> (dry sudation)	<i>Rakta shodhna</i>	<i>Rakta shodhna</i>

Sadhya-Asadhyata

As *Sandhigatavata* is a *Vatavyadhi* which occurs mainly in elderly individuals and is located in *Marma sthana, Madhyama roga marga, Asthi* and *Majja Dhatu Ashrita* therefore it is classified as *Kastasadhya*.

Management of Sandhivata

The primary goal should be lifestyle modification because in Ayurveda, *Nidanaparivarjana* is the first line of treatment. This can be accomplished by dietary modification, *yoga* and regular exercises.

Pathya Apathya (Diet and physical activities pacifying or aggravating the condition) [13]

- **Pathya Aahara:** *Godhuma* (wheat), *Mamsa* (meat), *Raktashali, Godugdha* (cow's milk), *Ajadugdha* (goat milk), *Ghritha* (ghee) *Draksha* (grapes), *Ama* (mango), *Madhuka, Ushna Jala, Sura, Surasava, Madhura – Amla – Lavana Rasa pradhana ahara.*
- **Pathya Vihara:** *Atapa Sevana, Mridu Shayya, Ushnodaka Snana* etc.
- **Apathya Aahara:** *Yava, Kodrava, Chanaka, Kalaya, Sheeta Jala, Ati Madya Pana, Sushka Mamsa, Katu-TiktaKashaya Rasa pradhana ahara.*
- **Apathya Vihara:** *Chinta, Ratri Jagarana, Vega Vidharana, Shrama, Anashana, Vyavaya, Vyayama, Chankramana, Kathina Shayya.*

Yoga

Yoga has been shown to be effective in the treatment of chronic diseases, both physiologically and mentally. Numerous studies have demonstrated that *Yoga* has a greater positive impact on OA patients than physical therapy alone. *Ebnezar J et al* noted that the patients in the experimental group noted a higher reduction in pain, morning stiffness, and anxiety, according to the results.[14] According to the American College of Rheumatology, individuals with knee and/or hip OA, particularly those who are overweight or obese, are strongly advised to exercise. Exercises for maintaining balance, yoga, cognitive behavioral therapy, etc. were suggested with conditional recommendations.[15]

Table 2: Various Procedures (Shodhana)

Treatment	Su.Sa.	A.Sa.	A.Hr.	Yo.Ra.	Bh.Pr.
<i>Snehana</i>	+	-	-	+	+
<i>Swedana</i>	-	+	-	+	+
<i>Upanaha</i>	+	+	+	+	+
<i>Bandhana</i>	-	+	+	-	-
<i>Abhyanga</i>	-	-	+	-	-
<i>Agnikarma</i>	+	+	+	-	-
<i>Mardana</i>	+	+	-	+	+

- *Basti Chikitsa*, which is regarded as a half treatment, works best for *Vatavyadhi* [16] and is also efficient for OA. *Snehanbasti* will aid in both promoting strength and reducing discomfort.

Studies using *Ksheer Balataila Basti* have shown that it significantly lessens the symptoms of *Sandhivata*. [17] *Rajayapana Basti* has helped in reducing the symptoms of OA due to its *Rasayana* and *Bhringhana* effect and stopped further deterioration of *Dhatu*s and increased the quality of life. [18] *Panchatikta Ghrita* along with local *Abhyanga* and *Nadi Swedana* has proved better relief in the disease *Sandhivata* (OA). [19]

- According to *Charak "Samprapti Vighatana"* is the main *Chikitsa*. Due to the fact that *Sandhigatavata* is primarily caused by *Dhatukshaya* or *Avarana*, common *Vatavyadhi* treatments such as *Snehan*, *Swedan*, *Mriduvirechan*, *Niruha basti*, *Vataharaausadhis*, *Ahar*, and *Vihar*, among others, can be used in order to treat it. [20]

Shamana Aushadh

- *Guggulu* preparations like *Vatariguggulu*, *Yograj guggul*, *Trayodashangaguggulu*, *Rasnadiguggulu* etc are beneficial.
- Single herbs like *Ashwagandha*, *Nirgundi*, *Shallaki*, *Bala*, *Shunthi*, *Haridra* have proven results in *Sandhivata*.
- *Kwath* preparations like *Dashmool kwath*, *Erandmuladi kwath*, *Maharasnadi kwath*, *Rasnasaptak kwath* etc are helpful.

DISCUSSION

All *Samhitas* including the *Sangrahagrantha* provide descriptions of *Sandhivata* under *Vatavyadhi*. *Aharaja*, *Viharaja*, *Manasa*, and other *Vata Prakopaka Nidanas* are mentioned in detail for the occurrence of *Vatavyadhi*. A condition known as *Sandhivata* typically affects the region of *Vridhdhavastha* where *Dhatukshya* takes place and results in *Vataprakopa*. Due to the *Ashraya-Ashrayi Sambandha* between *Vata* and *Asthi*, *Asthi* is where *Vata* is located. *Asthidhatu's Sneha* is diminished by an increase in *Vata* since *Vata* has

Viparita gunas, or opposite attributes to *Sneha*. Therefore, *Snehadiguna shoonya* is present in *Sandhivata* in addition to *Sleshaka kapha kshaya* (lack of synovial fluid) in the *Asthi*, which is the cause of producing *Sandhivata*. The most prevalent type of arthritis is osteoarthritis. This degenerative joint condition followed by the multifactorial etiology-induced failure of the articular cartilage. Old age, obesity, female sex, significant joint trauma, repetitive stress, genetic factors, past inflammatory joint diseases, and metabolic or endocrine problems are risk factors for osteoarthritis. In the *Sandhivata Samprapti*, *Vata* becomes aggravated as a result of *Dhatukshaya* and emerges from its *Ashaya* to circulate throughout the entire body. It localizes in the *Janusandhi* where *Khavaigunya* is already present since the *Dosha* will not take *Ashraya* unless and until there is *Khavaigunya* in the *Srotas*. The features of *Sleshakakapha* present in the *Sandhi*, including *Guru*, *Snigdha*, *Sheeta*, *Picchila*, and *Mridu*, are the exact opposite of the virtues of *Vata*, such as *Ruksha*, *Laghu*, *Sukshma*, *Khara*, and *Vishada*. The exacerbated *Vata* overpowers and undoes the properties of *Kapha* when *Dushya Sammucchana Dosha* occurs in *Asthi Sandhi*, which results in *Sandhivata*. The *Kapha dosha* is responsible to maintain or *Dharana*, which is disrupted by the increased *Vata*.

CONCLUSION

In order to promote joint movement the fundamental method of treating *Sandhivata* is to reduce the alleviated *Vata dosha* and elevate the *Shleshakakapha* in the joints. Since this is an age-related degenerative disorder, it may continue for a lifetime, but by modifying their lifestyle along with *Shodhana* and *Shamana chikitsa* the symptoms of *Sandhivata* can be stopped in its early stage to improve the quality of life.

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