

Evidence Based Ayurvedic Treatment Guideline for Management of *Sandhivata* (Osteo-arthritis)

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Abstract

Sandhivata (osteoarthritis), a degenerative disorder of the joints especially affecting weight bearing joints like knee joint, elbow joint etc. results in painful and restricted movement of the affected joint. Old age, malnutrition, obesity, working pattern, etc. are the contributing factors for manifestation of *Sandhivata*. *Sandhivata* has been mentioned in Ayurved under title of *Vatavyadhi*. Various Ayurvedic formulations like *Kwatha*, *Guggulu Kalpana*, *Ghreeta*, *Taila*, *Gutika*, *Rasa Aushadhi* and *Panchakarma* procedures like, *Abhyanaga*, *Swedana*, *Basti*, *Janubasti*, *Rasayana* therapy, *Agnikarma* have been mentioned in classics for treatment of *Sandhivata*. Use of these various formulations and treatment modalities, considering *Vikara Prakruti*, *Vikara Adhisthana* and *Vikara Sammutthana* can provide expected results in such joint deteriorating condition. An attempt has been done to review various formulations mentioned in Ayurveda classics for treatment of *Sandhivata* and tried to establish the guideline for rational use of these treatment modalities in specific pathological condition of *Sandhivata*, which may be useful for clinician and researcher for their clinical practice and future research plan respectively.

Keywords: Ayurvedic Treatment; Vata Vyadhi; Cartilage Lesions

Introduction

Sandhigata Vata is one of *Vata Vyadhi* characterized by the symptoms such as *Sandhishoola* (joint pain) and *Sandhishopha* (swelling of joint). Osteoarthritis (OA) is degenerative joint disorder, represents failure of the diarthrodial (movable, synovial-lined) joint. OA of knee joint comes under the inflammatory group which is almost identical to *Sandhigata Vata* described in Ayurveda with respect to etiology, pathology, and clinical

features. Osteoarthritis (OA) is the most common form of arthritis, which is degenerative in nature. It is characterized by progressive disintegration of articular cartilage, formation of new bone in the floor of the cartilage lesions (eburnation) and at the joint margins (osteophytes), and leads to chronic disability at older ages [1]. Clinical manifestations of OA range from mild to severe, and affect the joints in hands and weight bearing joints such as knees, hips, feet and spine. OA is a clinical syndrome characterized by joint pain, tenderness,

limitation of movements, crepitus, occasional effusion and variable degrees of inflammation without systemic effects [2]. According to epidemiology, the prevalence of OA in India is 22-39%. Radiographic evidence of OA is present in majority of people over age 65; among them, 80% people are over 75 years. Approximately, 11% of those over 65 have symptomatic OA of the knee. In India, 5.3% males and 4.8% females are aged more than 65 years [3]. OA strikes women more often than men and it increases in prevalence, incidence and severity after menopause. The aetiology of OA is multi-factorial. Various morphological as well as biochemical changes result in a softened, ulcerated and malfunctioning articular cartilage [3]. It has been postulated that age, gender, body weight, repetitive trauma and genetic factors are the risk factors which play an important role in the manifestation of OA [4].

Sushruta has described the disease in *Vatavyadhi* chapter under the heading of *Sandhigata Vata*, while *Charaka* has described *Sandhigata vata* under the *Vatavyadhi* as *Sandhigata Anila* [5]. The diseases produced by morbid *vatadosha* are more common in *Jaravastha* (old age). The vitiated *vata* combines with other vitiated *dosha*, *rakta*, *ama*, etc and gets located in the joint to produce the disease. Being a disease related to *madhyamarogamarga*, *Sandhigata vata* is either *Kasthasadhy* or *Asadhy*. On the basis of symptomatology and nature of the disease, *Sandhigata vata* is much similar to OA, which is the most common degenerative joint disease in older people.

Aim and Objective

To review the various treatment modalities mentioned in Ayurved for treatment of *Sandhivata* and to establish evidence based guideline for its rational utility.

Material and Methods

Charaka samhita, Sushruta Samhita, Astang Hridya and Samgraha, Yogaratnakar, Bhavaprakash and Sharangadhar Samhita Chakradatta, Bhaishajya Ratnavali and other relevant modern books, published articles on *Sandhivata* or Osteo-arthritis and internet sources were used to review the treatment approaches mentioned to manage osteoarthritis or *Sandhivata*.

Results and Discussion

Sandhivata is a *vatavyadhi* occurring due to vitiation of *vata* either due to consumption of *vatavardhaka Ahara* and

Vihara or due to *avarana* of *vata*. Various therapeutic measures mentioned for *Sandhivata* are based on its pathogenesis mechanism. The patients of *Sandhivata* on bases of their pathology can be broadly divided in three categories;

- *Bahu Doshaja Sandhivata* (*Sandhivata* occurring due to excessive morbid *Dosha*)
- *Madhyama Doshaja Sandhivata*
- *Alpa Doshaja Sandhivata*

Treatment plan according to above categories;

- *Nidana Parivarjana*

Pathya Apathya

- **Pathya Aahara:** Godhuma, Mamsa, Raktashali, Godugdha, Ajadugdha, Ghrita, Draksha, Ama, 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-Tikta-Kashaya Rasa pradhana ahara.
- **Apathya Vihara:** Chinta, Ratri Jagarana, Vega Vidharana, Shrama, Anashana, Vyavaya, Vyayama, Chankramana, Kathina Shayya.
- Bahu Doshaja Sandhivata: Samshodhana
- Madhyama Doshaja Sandhivata: Langhana, Pachana and Shamana
- Alpa Doshaja Sandhivata: Langhana and shaman therapy

Samsodhana Therapy

Osteoarthritis or *Sandhivata* mainly occurring due to obesity having *Bahu Dosh* condition requires *Samshodhana*. Following *Panchakarma* treatment can be effective for treatment of *Sandhivata* of obese patients;

- *Vamana:* By *Madanaphala Pippali Yoga*
- *Virechana:* *Abhayadi Modak and Trivruta Avaleha, Argavdhadi Kashaya, Triphala Kashaya*
- *Asthapana Basti:* *Dashamuladi Niruha basti, Erandamuladi Niruha Basti*

Raktamokshana Therapy

If there is involvement of *Rakta Dhatu* in *Samprapti* of *Sandhivata*, *Rakta Mokshana* by *Jalauka* (Bloodletting through leech) from affected joint can provide instant relief in pain and help to break down pathology. Rai PK, et

al. carried out a clinical research titled 'Efficacy of leech therapy in the management of osteoarthritis (*Sandhivata*)'. A series of 32 patients with osteoarthritis were selected for that clinical study from the S.S. Hospital, Banaras Hindu University, and Varanasi. Leech was applied on affected part in that clinical trial. During the whole study period it has been observed that pain and stiffness start decreasing after the first sitting of leech therapy and after the last follow-ups there was a significant decrease in symptoms including pain, stiffness, and tenderness. The scar of the leech bite was also observed on the bite site but it became clear in 2-3 weeks after the completion of last sitting of leech therapy. In some patients itching was also observed and subsided after 2-3 hours of removal of leech. The bleeding of the bite site was also observed up to more than 1 hour in few cases. No radiographical changes occurred after completion of the study. On basis of that pilot study they concluded that leech therapy is beneficial in reduction of pain, tenderness, stiffness, crepitus, and swelling in the patients of osteoarthritis. With the help of leech therapy, quality of life of the arthritis patients can be improved. The hazards of prolong use of analgesic; anti-inflammatory drugs by using leech therapy can be avoided.

Agnikarma Therapy

Patients of osteoarthritis having severed joint pain can be treated effectively by *Agnikarma* on affected joint with *Pancha Dhatu Loha Shalaka*. A research work conducted by Nilesh Jethava *et al* entitled 'Role of *Agnikarma* in *Sandhigata Vata* (osteoarthritis of knee joint)' concluded that *Agnikarma* (therapeutic heat burn) provides instant

relief from pain by balancing local *Vata* and *Kapha Dosha* without any untoward effects. A total of 28 diagnosed patients of *Janugata Sandhivata* were registered and randomly divided into two groups. In Group-A, *Agnikarma* was done with *Rajata Shalaka* while in Group-B *Agnikarma* was performed by *Loha Shalaka* in four sittings. Assessment in relief of signs and symptoms was done by weekly interval, and Student's t-test was applied for statistical analysis. Group-A provided 76.31% relief in pain while Group-B provided 83.77% relief. Relief from crepitus was observed in 57.13% of patients of Group-A, while 57.92% of patients of Group-B. There was statistically insignificant difference between both the groups. *Loha Shalaka* provided better result in pain relief than *Rajata Shalaka* [6].

Shamana Therapy

After *Shodhana* or *proper Langhana* and *Pachana*, *Shamana* therapy can effectively manage the remaining symptoms.

Drugs used for *Pachana* or *Agnidipana* in patients of *Sandhivata*:

- *Rasna*
- *Lasuna*
- *Panchatikta Drvya Kashaya*
- *Agnitundivati*
- *Sanjivani vati*
- *Lasunadi vati*
- *Hingvastaka Churna*
- *Shivakshara Pachana Churna* etc can be used to correct *Agni* before starting the *Shamana* therapy.

Drugs Used as Shamana therapy for Treatment of Shandhivata

Guggulu Kalpana	Sneha Kalpana	Kwatha	Rasa Aushadha
<i>Yogaraja Guggulu</i>	<i>Dashmuladi taila</i>	<i>Dashamula Kwath</i>	<i>Navajivana rasa</i>
<i>Panchatikta Guggulu</i>	<i>Panchatikta Ghrita</i>	<i>Rasna Saptaka kwath</i>	<i>Godanti Bhasma</i>
<i>Rasnadi Guggulu</i>	<i>Rasna tail</i>	<i>Phalatrikadi Kwath</i>	<i>Prvala Pisti</i>
<i>Gokshuradi Guggulu</i>	<i>Lashunadi tail</i>	<i>Maharasnadi Kwath</i>	<i>Muktashukti Bhasma</i>
<i>Mahayogaraja guggulu</i>	<i>Nirgundi tail</i>	<i>Erandmuladi Kwath</i>	<i>Samir pannaga rasa</i>
<i>Tryodashanga guggulu</i>		<i>Punarnavastaka kwath</i>	<i>Bruhata vatchintamani rasa</i>
<i>Saptavinshati Guggulu</i>		<i>Gokshuradi Kwath</i>	<i>Vatavidhvansa rasa</i>
<i>Laksha guggulu</i>			
<i>Abha Guggulu</i>			

Table 1: Drugs Used.

Local Applications or procedures	Churna	Rasayan Aushadha	Avaranahar and Sthoulya hara
<i>Shulahara taila</i>	<i>Asvagandha churna</i>	<i>Lasuana</i>	<i>Triphala guggulu</i>
<i>Lepa Guti</i>	<i>Chopachini churna</i>	<i>Methika</i>	<i>Varuna shigru kwath</i>
<i>Janu Basti</i>	<i>Bala Churna</i>	<i>Shilajatu</i>	<i>Vidandadi Lauha</i>
<i>Janu Abhyanga</i>	<i>Shallaki Churna</i>	<i>Asvagandha</i>	<i>Kanchanara guggulu</i>
<i>Patra Pinda Sweda</i>	<i>Guggulu powder</i>	<i>Bala</i>	<i>Kanchanara twak kwath</i>
<i>Upanaha Sweda</i>	<i>Rasana Churna</i>	<i>Kshira-Ghrita Abhyasa</i>	<i>Madhudaka</i>

Table 2: Local Procedures.

Rational Use of above Mentioned Formulation in Treatment of *Sandhivata*

According to *Sadvidhakriyakala* of *Sandhivata*, the use of above mentioned treatment modalities can be effective, if used properly.

- Mild severity of symptoms of *Sandhivata* having less degeneration of cartilages of joints is a condition occurring due to *Kostha Dusti*. These types of patients have joint pain when they have flatulence or indigestion. They can be treated effectively with *Pancha vidha kashaya kalpana* like, *Kwath*, *Churna* etc. mentioned above.
- Moderate severity of symptoms having moderately degeneration of cartilages of joints resulting in crepitating sound on movement of joint is a condition of *Shakaha Dushti* and should be managed with *Sneha kalpana* like *Ghrita*, *Taila* etc. *Anuvasan Basti* with *Panchatikta Taila*, *Nirgundi tail* and *Matra basti* with *Tila taila*, *Erand taila* etc can also be beneficial to manage this condition.
- Severe degeneration of joints leading to unbearable pain and other symptoms like restricted movement of joint, inflammation etc are due to involvement of *Marmasthisandhi* (*Madhyama Rogamarga*) in pathogenesis of *Sandhivata*, which requires fast acting and *Sukshama Guna*, *Vyavayi Guna* dominant drugs, which can easily reach to micro channels of bone nutrition and show its effect to reduce the symptoms. The *Guggulu kalpana* and *Ras-Aushadh* should be used for such type of pathological condition of *Sandhivata*.
- *Rasayana Aushadha* like *Pravala pisti*, *Mukta shukti*, *Godanti Bhasma*, *Hiraka Bhasma* etc being good source of calcium, should be used having malnutrition and osteoporosis condition associated with *Sandhivata*.

Evidences of above Mentioned some Ayurvedic Interventions for Treatment of *Sandhivata* (Osteoarthritis)

Some evidence based clinical researches conducted for treatment of *Sandhivata* are mentioned here to support above guidelines.

1. Pradeep L, et al. concluded in their research work entitled 'Effect of *Anuvasana Basti* with *Ksheerabala Taila* in *Sandhigata Vata* (Osteoarthritis)' that *Anuvasana Basti* with *Ksheerabala Taila* has provided significant improvement in the subjective symptoms of *Sandhigata Vata*. A total of 30 subjects with OA knees were recruited for the study among which 25 subjects (16 female and 9 male) completed the whole course and 5 dropped out. The patients were treated with *Anuvasana Basti* with *Ksheerabala Taila* 120 ml for 10 days. 5 g of *Saindhava* was added to *Ksheerabala Taila* while administering *Basti*. The *Basti* was given daily between 2 pm and 3 pm in the afternoon after food. The subjects were not given any other medications or topical treatments during the trial. The patients were assessed pre-test, post-test and after the follow-up period of 20 days. There was significant reduction ($P < 0.05$) in subjective symptoms such as pain, swelling, tenderness, crepitus and walking velocity. There was insignificant change in radiological findings. In the overall effect of the therapy, 56% (14) had mild improvement, 48% (08) had moderate improvement and 12% (03) had no improvement [7].
2. A clinical research entitled 'Clinical evaluation of *Boswellia serrata* (Shallaki) resin in the management of *Sandhivata* (osteoarthritis)' conducted by Gupta PK, et al. concluded in their research work that Patients' mobility was improved significantly in both the groups, which indicates the efficacy of Shallaki over chief complaints. Remission in *sandhishula*, *stambha* and radiological improvement was found to be better in oral Shallaki group. Remission in *sandhishotha* was maximum in group B patients treated with Shallaki both orally and locally, whereas equal improvement in *sparshasahyata* was observed in both the groups. Some patients in group A showed complete relief. Overall effect of therapy suggests that Shallaki provided moderate improvement in maximum subjects [8].
3. Babul Akhtar, et al. in their research work entitled 'Clinical study on *Sandhigata Vata* w.s.r. to Osteoarthritis and its management by *Panchatikta Ghrita Guggulu*'. In this study total 49 patients having

the complaints of Osteoarthritis were randomly divided into 2 groups. In Group A, patients were treated with *Panchatikta Ghrita Guggulu Vati* along with *Abhyanga* and *Nadi Swedana* and in group B patients were treated with only *Abhyanga* and *Nadi Swedana*. The data shows that *Panchatikta Ghrita Guggulu* along with local *Abhyanga* and *Nadi Swedana* i.e. group A has provided better relief in the disease *Sandhigata Vata* [9].

4. Shah MR, et al. conducted a research work on 'A Clinical study of *Matra Vasti* and an ayurvedic indigenous compound drug in the management of *Sandhigatavata* (Osteoarthritis)'. In this clinical trial, *Matra Vasti* (therapeutic enema) was given with *Bala taila* as *Vasti* is the best treatment for *vatavyadhies*. It has *vatashamaka* and *rasayana* properties. Indigenous compound drug containing *Guggulu*, *Shallaki*, *Yastimadhu*, *Pippali*, *Guduchi*, *Nirgundi*, *Kupilu* and *Godanti* was given in one group along with *Matra Vasti*. In this study, 33 patients of *Sandhigatavata* completed the treatment. Patients were randomly divided into two groups. Sixteen patients in Group-A (*sarvanga Abhyanga-swedana + matravasti*) and 17 patients in Group-B (*sarvanga Abhyanga-swedana+ matravasti + indigenous compound drug*). The results of the study indicate that the patients of both the groups obtained highly significant relief in almost all the signs and symptoms of *Sandhigatavata* [10].
5. Kshipra Rajoria, et al. conducted a clinical study entitled 'Clinical study on *Laksha Guggulu*, *Snehana*, *Swedana* & Traction in Osteoarthritis (Knee joint)' to assess the efficacy of *Laksha Guggulu*, *Snehana*, *Swedana* & Traction in the management of Osteoarthritis (Knee joint). For the present work, 30 clinically diagnosed patients were selected and randomly divided into three groups. Group a treated with *Laksha Guggulu* orally, Group B treated with *snehana* & *swedana* traction, Group C treated with *Laksha Guggulu*, *Snehana*, *Swedana* & Knee Joint Traction. The various criteria worked upon were joint pain, oedema, tenderness, restriction of joint movement, stiffness, local crepitation, walking distance. Significant results were obtained on pain in joint movement, restriction in joint movement, joint stiffness, and local crepitation nearly in all the groups with best result in combined group or group C [11].

Conclusion

Osteoarthritis or *Sandhivata*, according to its progressive condition require specific treatment to get cured. *Panchavidha kashaya kalpana* can be effective in *Kosthagata* or primary condition of *Sandhivata*, *Sneha*

Kalpna can be useful in *Shakhagata* or moderately degenerative condition of *Sandhivata* and *Guggulu kalpana* as well as *Rasa Aushadhi* can effectively treat the terminal or *Marmasthi Sandhigata* stage of *Sandhivata*. Selection of drug for treatment of *Sandhivata* on bases of its *Sadavidha kriyalakala* can provide accurate and instant result to get rid from this disease.

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