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Research Article

Ayurvedic Research

### Comparative study of sandhigata vata described in ayurveda in relation to osteoarthritis

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#### ABSTRACT

Ayurveda, the complete life science has given special emphasis to the functional aspect of vayu. Due to the prakopana of vayu due to asatmya aahara and vihara different kinds of disease occurs in the human body and sandhigata vata is one among them. The clinical features attributed in Ayurveda clearly relates to the features described by modern counterparts in relation to osteoarthritis. The aim of the article is to discuss the features described in Ayurveda regarding sandhigata vata in relation to osteoarthritis.

**Keywords:** sandhigata vata, Osteoarthritis, Ayurvedic.

#### INTRODUCTION

Ayurveda, the complete life science has given special emphasis to the concept of vata and its physiological and functional aspect in the life of a human being. Vata has its two functional entities that are “Gati and Gandha”. Gati means movement and Gandha means conduction. As soon as the life comes in the mother’s womb the functional aspect of the vayu comes into action and is responsible for the placement of all the parts of the body in their proper position. Proper development and nourishment are solely dependent upon the proper functioning of vayu.<sup>1</sup> The human body is made up of innumerable channels and these channels are responsible to carry all kind of nourishment as well as proper information’s to all the different part of the body and for the proper

functioning of these channels karma, swabhaw and vayu is responsible.<sup>2</sup>

#### Ayurvedic Review

Ayurveda has given proper importance to asthi (Bones) for proper sharira dharana. Explaining this phenomenon Ayurveda has described that as the tree is solely dependent upon the roots in the same way human body is solely dependent upon asthi. All the sharira chestas to a great extent are dependent upon the proper functioning of asthi. Ayurveda has described the human body to be made up 300 types of bones. Kapal, Ruchak, Tarun, Balay and Nalay are the five types of asthi distributed throughout the human body.<sup>3</sup> Sandhi is of two types – Chestayukta and sthira. There are 210 sandhi’s distributed throughout the body. Proper functioning of this

sandhi's is necessary for the proper functioning of the bones. Without these sandhi's the sharira chestas will be hampered and de-organized in the day to day life of a human being.<sup>4</sup> Ayurveda has regarded vata as ayu (life) and this vata is also responsible for the proper strength of the body. There are five types of vayu – Prana, Apana, Vyana, Samana and Udana and these five types of vayu are responsible for different kinds of functional aspects of the human body. When the vayu become de-organized the proper functioning also become de-arranged and is responsible for the formation of different kinds of diseases in the day to day life of a human being and formation of sandhigata vata as a disease process is one among them.<sup>5</sup> Sandhigata vata is a madhyama marga gata roga and it happens due to the lodging of vayu in sandhi pradesha.<sup>6</sup> The sandhi pradesha become swollen and formation of oedema also develops. There is difficulty in flexion and extension of the joints and all the features of kupita vata can be seen in the affected areas.<sup>7</sup>

### Modern Review

Bone is a living structure. It is continuously being broken down by osteoclasts and built up again by osteoblasts. It has a blood supply and a nerve supply, and is therefore subject to diseases and problems just like the rest of the body. Perhaps because of its relatively low rate of turnover it is unusual for a primary bone tumor to occur, but bone is a common site for secondaries. Similarly, bone infection is rare but when it does occur it is very difficult to eradicate. Articular cartilage has no blood supply at all. It receives its nutrition from synovial fluid. Its powers of healing are therefore limited. Once damage occur, repair is difficult if not impossible. Further, breakdown is inevitable, slowly at first, then more rapidly. Osteoarthritis is the common pathway for all the diseases which damage the articular cartilage. The patient complains initially of pain on movement, and over a period the joint become stiffer and stiffer, gradually fixing in the position of maximum comfort. The muscles around the joint tend to waste and weakness sets in, further hampering the patient's mobility. Eventually the joint may actually collapse, the limb shortens and the joint may lose its normal alignment.<sup>8</sup>

### Cardinal features of osteoarthritis on x-ray<sup>9</sup>

- Loss of joint spaces.
- Subchondral sclerosis
- Osteophytes
- Cysts

### Radiological Features Of Osteoarthritis<sup>10</sup>

- Joint narrowing
- Osteophyte formation
- Subchondral sclerosis
- Cyst formation

### Typical characteristics of pain and clinical signs of osteoarthritis<sup>11</sup>

- Patient over age 45 (often over age 60).
- Insidious onset over months or years.
- Variable or intermittent over time
- Mainly related to movement and weight bearing, relieved by rest.
- Only brief morning stiffness and brief 'gelling' after rest.
- Usually only one or a few joints painful (not multiple regional pain).

### Clinical Signs<sup>12</sup>

- Restricted movement
- Palpable, sometimes audible, coarse crepitus.
- Bony swelling around joint margins.
- Deformity, usually without instability.
- Joint-line or periarticular tenderness.
- Muscle weakness or wasting.

### Examinations

On inspection the joint may be slightly red and there may be swelling of the soft, tissues, combined with muscle wasting. The limb is held in the position of comfort and may even be deformed. There may be some heat over the joint, and careful examination usually reveals at least a small effusion. The osteophytes around the joint may be palpable and the joint line itself is often tender to palpation. Movement will be markedly limited and crepitus may be both palpable and audible. In osteoarthritis, the knee tends to fall into varus (bow leg). The hip tends to flex into internal rotation, and the limbs may actually shorten if there is bone loss.<sup>13</sup>

## Treatment

### Ayurvedic procedure

- If the vata dosa occurred without any obstruction by other dosas that is pitta and kapha, then the treatment procedures should be started by the sewana of ghritha, taila, vasa or majja.<sup>14</sup>
- After proper snehana, application of anuwasana vasti, snigdha nasya and dietary regimen prepared with sneha should be given to the patients.<sup>15</sup>
- After proper snehana, application of vata hara taila should be applied in the part affected by vata dosa and after that proper swedana should be given to the patient.<sup>16</sup>
- After the application of the above procedures if the patient is not getting relief then mridu virechana can be given to the patient.<sup>17</sup>
- If the patient is weak enough to undergo virechana therapy then in this kind of patient application of Niruhavasti is advised.<sup>18</sup>
- Application of Nawan Nasya and Dhupana is always advised in vata vyadhi patient.<sup>19</sup>
- If the vata dosa occurred due to the obstruction by pitta dosa then the treatment procedure should be done in interchanging manner that is – application of cold substances, then hot substances again cold and the process should be continued in regular manner.<sup>20</sup>
- If the vata dosa occurred due to the obstruction by kapha dosa then the treatment procedure should be done by the application of tikshna swedana, niruha vasti, vamana, virechana, ghritha, tila taila and mustard oil.<sup>21</sup>
- If the vata dosa occurred due to the obstruction of pitta and kapha dosa then at first the treatment of pitta dosa should be done followed by kapha dosa.<sup>22</sup>

### Aahara and vihara

Sewana of ghritha, taila, vasa and majja, parisheka (Snan), abhyangan, vasti prayoga, snehana, swedana, residing in a place where there is no direct contact of air (niwatsthana), sewana of mangsa rasa, dugdhapana, sewana of madhura, amla and lawana dravyas.<sup>23</sup>

### Single herbs

Guggulu, Rasna, Shigru, Laksha, Amlaki, Guduchi, Eranda, Aswagandha, Haridra, Vacha, Nirgundi, Haritaki, Bibhitaki, Sonth, Pippali.<sup>24</sup>

## MODERN PROCEDURES

### Osteoarthritis treatment without medications

- Rest — Arthritis symptoms are typically worsened by activity and are improved with rest. However, a complete lack of activity can lead to a loss of muscle and joint stiffness. If arthritis flares and causes significant pain and inflammation, the healthcare provider may recommend rest for 12 to 24 hours, followed by a return to usual activities.
- Weight loss — Obesity is strongly linked to the development of arthritis of the knee. Weight loss, even modest weight loss, appears to lower this risk. It is not known if weight loss slows the worsening of arthritis in joints that are already affected. However, weight loss may reduce joint pain in weight bearing joints, such as the hips and knees.
- Physical therapy and exercise programs — Physical therapy and exercise improve flexibility and strengthen the muscles surrounding the joints. People who exercise regularly despite their arthritis will typically have less pain and better function than those who are inactive.
- Orthoses — Orthoses are devices that help to keep the joints aligned and functioning correctly. There are many different types of orthoses that can reduce symptoms and that can help maintain function in people with osteoarthritis (OA).
- Well-cushioned shoes and orthotic shoe inserts may reduce stress on the joints of the spine and leg.
- Splints that immobilize the joints can reduce pain and inflammation, and many splints can be worn throughout the day and night. Braces can help stabilize unstable joints.
- Assistive devices — Canes, walkers, electric-powered seat lifts, raised toilet seats, and tub and shower bars can reduce the stress on joints and can make it easier to perform daily tasks. A physical therapist may suggest these and other assistive devices, depending upon the severity and location of your arthritis.
- Vitamins — Studies have linked certain vitamins to joint health, but the role of vitamins in arthritis

treatment is uncertain. OA is less likely to worsen in people who have a high dietary intake of vitamin C (ascorbic acid) and a high dietary intake and high blood levels of vitamin D. However, it is unknown if supplementation with these vitamins has the same effects or if high dietary intakes of vitamins can prevent the onset of OA.

- Heat therapy – Heat relieves pain and stiffness in arthritic joints. Heat can be applied to the joints with hot packs, hot water bottles, heating pads, or electrically heated mittens.
- Cold therapy – Cold relieves pain in arthritic joints and reduces muscle spasms. Cold can be applied for short periods using ice packs or coolant sprays. People with certain medical conditions, such as the Raynaud phenomenon, should not use cold therapy.
- Transcutaneous electrical nerve stimulation (TENS) — A TENS unit delivers a mild electrical current to the skin, stimulating nerve fibers in the skin that may interfere with the transmission of pain signals from the arthritic joint. The use of TENS as an arthritis treatment is controversial. Some studies have found that those who use TENS for arthritis of the knee have reduced knee pain, a greater ability to bend the knee, and a reduced duration of morning stiffness. However, another study found that TENS was no more effective for relieving pain than the drug naproxen (Aleve, Anaprox) or a placebo.
- Dietary supplements — Glucosamine and chondroitin are dietary supplements that have received a lot of attention for their potential benefit in reducing pain and in slowing the progression of arthritis.

#### **Osteoarthritis treatment with medications**

- Pain relief medications — Analgesics relieve pain but do not have any effect on inflammation. These drugs are often recommended when arthritis pain does not respond to non-pharmacologic measures. Drugs in this class include acetaminophen and opioid (narcotic) analgesics.
- Non-steroidal anti-inflammatory drugs — NSAIDs relieve pain and reduce inflammation. Many of the nonprescription products that are available for

treating arthritis pain are NSAIDs. These drugs are often recommended before analgesics for people who have osteoarthritis (OA) and evidence of inflammation. They are also recommended for some people with non-inflammatory OA who do not get adequate pain relief with simple analgesics.

- Joint injections — two types of injections are used for people with arthritis pain: glucocorticoid (steroid) injections and injections of a liquid known as hyaluronate.<sup>25</sup>

#### **DISCUSSION**

From the above features it become clear that sandhigata vata is nothing but the disorders of the joint that can affect any kind of weight bearing areas. The clinical features attributed in Ayurveda clearly demarcates to the clinical features stated by modern counterparts. In some the etiological factors are misnomer that is happening without any proper cause and it can be related to features attributed in Ayurveda concerned with prakriti because many of the diseases happening in human body depends upon the prakriti of the person. Sandhigata vata occurs in person those who are physiologically and anatomically are vatic prakriti and it can be seen in day to day regular practice. The clinical features stated in osteoarthritis by modern counterparts clearly demarcate the features stated by Ayurveda in relation to sandhigata vata. Pain, swelling, redness, difficulty in flexion and extension of the joints, burning sensation, heaviness with tingling sensations are some of the features described in Ayurveda regarding sandhigata vata clearly relates to the clinical features stated by modern counterparts in relation to osteoarthritis.

#### **CONCLUSION**

From the clinical point of view the sandhigata vata can be demarcated as osteoarthritis. The disease feature is very annoying and troublesome for the patients suffering from this kind of ailments. The treatment modalities described in Ayurveda and in modern should need proper research based evaluation so that a fruit result can be obtained in the near future for the healthy benefit of the patient suffering from these kinds of ailments. This article needs further discussion so that a fruitful conclusion can be obtained in the near future.

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