

REVIEW ARTICLE

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Article Received on 23/07/2022

Article Revised on 13/08/2022

Article Accepted on 03/09/2022

ABSTRACT

Osteoarthritis (OA) of knee is a degenerative and metabolic disorder, often caused by wear and tear on a joint over life time. Leading cause of pain and disability globally, and leads to a reduced quality of life. Janu sandhigata vata is one among Shula and Shotha pradhana vata vyadhi, which is mentioned in the context of Gatavata in almost all the Ayurvedic classical texts. Osteoarthritis is an abnormality of the synovial joints characterized by softening, splitting and fragmentation of articular cartilage not attributable to direct contact with inflammatory tissue. The prevalence of osteoarthritis among elderly as per the recent study is 56.6%, making it a leading cause of disability. Management of OA in Western medicine includes NSAIDs, Opioid analgesics and injection gluco-corticoids. In Ayurvedic classical texts, the management of Sandhigata vata is mentioned as snehana, upanaha, agnikarma, bandhana, mardana, and many other shamanoushadhi an attempt to understand the disease pathophysiology and available intervention and its advantages and limitation.

KEYWORDS: osteoarthritis, sandigata vata, Shotha, analgesics, snehana, upanaha, agnikarma.**INTRODUCTION**

Janu sandhigata vata is one among Shula and Shotha pradhana vata vyadhi, which is mentioned in the context of Gatavata in almost all the Ayurvedic classical texts. The Lakshana are swelling which on palpation feels like bag filled with air and pain experienced during extension and flexion of joints.^[1]

Osteoarthritis is an abnormality of the synovial joints characterized by softening, splitting and fragmentation of articular cartilage not attributable to direct contact with inflammatory tissue. This is usually accompanied by subchondral sclerosis, bony cysts, joint space narrowing and bony outgrowth at tissue joint margins (osteophytes).^[2]

Osteoarthritis (OA) has similarities with the signs and symptoms of Sandhigata vata. Hence in this study Janu sandhigata vata is taken as special reference with Osteoarthritis of Knee joint.

OA is an important cause of disability and the second most common musculoskeletal problem in the world (30%) after back pain (50%). The reported prevalence of OA in rural India is 5.8%. The major risk factors associated with the knee joint OA are age, female sex,

obesity, non-smoker, occupational knee bending, physical labor and chondrocalcinosis. Symptomatic and radiographic OA increases with age.^[3]

Management of OA in Western medicine includes NSAIDs, Opioid analgesics and injection gluco-corticoids. Full recovery can be expected only in 85% of adults. Role of surgery remains controversial because of poor out come and also it causes economic burden to the patients. Long term usage of above medicines causes gastrointestinal toxicity in 50% of NSAID users, renal and hepatic metabolism impairment. Since disorders of movement cripple the individual with regard to both personal and professional life, it is imperative that these disorders are necessary to treat with effective and economic management.^[4]

In Ayurvedic classical texts, the management of Sandhigata vata is mentioned as snehana, upanaha, agnikarma, bandhana, mardana, and many other shamanoushadhi.

MATERIALS AND METHODS

All the ayurvedic classical texts of Ayurveda like Bruhtraye's and Laghutraye's along with various papers,

journals, and contemporary books which in specific with sexual dysfunction and digital sources.

Definition

Osteoarthritis (OA) is a joint failure in which all structures of joint have undergone pathological change often in concert. Swelling in the joint which is on palpation feels as bag filled with air and there will be pain experienced during extension and flexion of joints, is called as sandhigata vata. The sandhi gata vata located especially in Janu is considered as Janu sandhigata vata.^[5]

NIDANA

According to Charaka samhita excessive intake of ruksha, sheeta, alpa ahara, laghu guna ahara, maithuna, jagarana vishama upachara, asruk sravana (excessive bleeding), langhana, plavana (swimming), adhwagamana, ati vyayama, cheshta, dhatukshaya, chinta, shoka, roga atikarshana, dukha shayana, dukha asana, krodha, diwa swapana, bhaya, vegadharana amadosha, abhigata, abhojana, marmaghata, falling from gaja ushtra, ashwa yana.^[6]

Knee osteoarthritis is classified as either primary (idiopathic) or secondary. Primary osteoarthritis is mostly related to aging. It can present as localized as medial tibio femoral, lateral tibio femoral, patello femoral, generalized or as erosive osteoarthritis. Primary OA is the most common form of arthritis and is a progressive disease that affects 60% of men and 70% of women over the age of 65. Secondary osteoarthritis is caused by another disease or condition.

Post-traumatic

Congenital/malformation

Malposition (varus/valgus)

Postoperative

Metabolic:- Rickets, Hemochromatosis, Chondrocalcinosis, Ochronosis

Endocrine disorders:- Acromegaly,

Hyperparathyroidism, Hyperuricemia.^[7]

PURVA ROOPA

According to Charaka samhita, in the context of vata vyadhi, purva rupa is avyakta.

ROOPA

Swelling in the joint which is on, palpation feels as bag filled with air and there will be pain experienced during extension and flexion of joints is called as sandhigata anila. Astanga Hridaya and Astanga Sangraha have mentioned the features of sandhigata vata same as that of Charaka samhita.^[8]

The initial stages of the OA disease process are clinically silent, which explains the high prevalence of radiographic and pathologic signs of OA in clinically asymptomatic patients. Even in later stages of OA, there is a poor correlation between clinical symptoms and alterations in cartilage and bone integrity, defined

Arthroscopically or by indirect imaging techniques (radiography, magnetic resonance imaging [MRI]) The factors or events that make the OA disease process clinically apparent are unknown but are likely to be heterogeneous in nature and invoke changes within the synovium, bone, and surrounding supporting structures (muscle, ligaments) that produce pain. Pain does not derive from cartilage itself, a tissue without any innervations.^[9]

SAMPRAPTI

Samprapti of sandhi gata vata follows either of two ways viz, Dhatu kshaya janya and Avarana janya based on the nidana.

1. Dhatu kshaya janya sandhigata vata

In old age vata dosha dominates in the body. This will lead to kapha kshaya, jatharagni and dhatvagni get impaired, by which dhatu formed will not be of good quality. Degeneration of body elements takes place due to predominance of vata dosha in its ruksha, khara guna reduction of kapha in quality and quantity.^[10]

Shleshma kshaya in the sandhi will also leads to asthi dhatu kshaya due to ashraya-ashrayi sambandha. This localized vata due to its ruksha, laghu, and kharadi guna decreases the properties of shleshaka kapha producing the disease sandhigata vata.^[11]

2. Avarana janya sandhigata vata

The excessive fat deposited all over the body will produce margavarana of vata dosha. Prakupita vata dosha due to margavarana starts circulating in the body. While traveling it localised in the joint where khavaigunya already exists. This localized vata due to its ruksha, laghu, and kharadi guna which decreases the properties of shleshaka kapha producing disease sandhigata vata.

The pathophysiology of osteoarthritis involves a combination of mechanical, cellular, and biochemical processes. The interaction of these processes leads to changes in the composition and mechanical properties of the articular cartilage. It involves degradation of cartilage and remodelling of bone due to an active response of chondrocytes in the articular cartilage and the inflammatory cells in the surrounding tissues.^[12]

VYAVACHEDAKA NIDANA

There are number of conditions explained in the Ayurvedic classics having similar features to that of Janu sandhigata vata. They are as follows.^[13]

1. Amavata-
2. Kroshtuka sheersha-
3. Asthi majjagata Vata

1. Amavata- Amavata is a disease where stabdhata of the body occurs due to lodging of vitiated ama and vata initially in the trika sandhi.

2. Kroshtuka shirsha - Vata associated with shonita, produces swelling of the knee joint, accompanied with severe pain, resembling the head of the kroshtuka. This disease is called kroshtuka shirsha.

3. Asthi majja gata vata- Aggravated vayu produces bhedasthi parvana, (cracking of joints) constant pain in the bone and joints, diminution of muscle tissue and strength, insomnia.

OA involves a pathologic process that appears largely limited to cartilage and surrounding tissues, with no evidence of systemic involvement. Typically, the ESR is normal and there is no elevation of acute phase reactants.

The hemoglobin and leukocyte counts remain within normal limits. The synovial fluid itself demonstrates no evidence of an inflammatory reaction, with few leukocytes (typically fewer than 2000/mm³) and good viscosity.

Occasionally, fragments of cartilage and crystals of calcium hydroxyapatite or calcium pyrophosphate dihydrate are seen in the synovial fluid.

Rheumatoid factor is absent in most patients with OA, but a significant number of older individuals exhibit low-titer elevations that are not diagnostic of rheumatoid arthritis but are a common accompaniment of aging.

Cartilage matrix components unique to the joints have been identified and sensitive assays have been developed to detect these "markers" in synovial fluid, serum and urine. Further clinical correlations need to be performed to determine the relationship of these markers to the disease process, activity, and state and their possible use for earlier diagnosis and management of OA.

CHIKITSA

Samanya vata vyadhi chikitsa includes Snehana, Svedana, Abhyanga, Basti, Snehavirechana, shirobasti shiroabhyanga, snehika dhoomapana, snehika gandusha, Nasya and Vatahara Aushadha, Ahara and Vihara.^[14]

Sushruta Samhita has quoted specific line of treatment for sandhigata vata as snehana, upanaha, agnikarma, bandhana, mardana and svedana.

Astanga sangraha described similar line of treatment as sushruta samhita, additionally in sankocha condition abhyanga with taila prepared with masha and saindhava lavana is indicated.^[15]

DISCUSSION

All the nidana explained under the vata vyadhi nidana and vata prakopaka nidana. As movement is the main function of Vyanavata, it plays a significant role in the pathogenesis of janu sandhigata vata. It does shoshana of Snehamsa in sandhi, causing reduction of shleshaka kapha.

Aggravated vata when gets lodged at one or more than one joint, it produces the features like swelling and pain during flexion and extension of the joint. When these clinical features appear in janu sandhi then it is termed as janu sandhigata vata. While explaining the Sadhya and Asadhyata of vata vyadhi, Charaka samhita has explained the diseases of asthi and majja dhatu are difficult to cure or incurable, because of gambhira ashrayatva. Janu sandhigata vata is the disease of janu sandhi which comes under madhyama roga marga, i.e. situated in asthi sandhi, hence vitiation of asthi dhatu as in asthi dhatu makes it kruchrasadhy.^[16]

In OA of knee joint, there is structural changes in bony cartilage i.e osteophytes, and reduction of joint space between two bones. Hence this cannot be completely treated and the condition is managed symptomatically.

CONCLUSION

It can be safely inferred, according to the findings in the present report, that Osteoarthritis can be compared with Sandhivaata on the basis of symptoms. Results suggest that Ayurvedic treatment is beneficial in reducing knee OA symptoms. Further studies should be conducted to confirm the magnitude of the effect and to clarify the role of different treatment components and non-specific effects.

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