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Role of *shleshmadhara kala* in management of *sandhigata vata* with special reference to oesteo arthritis- a case study.

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ABSTRACT-

Sandhigata vata (Osteoarthritis) is a condition where Sandhis (joints) are afflicted by vitiated Vatadosha. A 49yrs old female patient came to opd with complaints of bilateral knee joint pain, crepitus, restricted movement, and general weakness for 4 years but severe since 5 months. Patient increased the symptoms because of long standing and straining. She was diagnosed as dhatukshaya janya sandhigata vata also known as nirupstambhit sandhigata vata sthansansharya at janu sandhi. Til taila has vatashamak and vedanasthapan & balya property. Hence in this case til tail was used in the patient as shaman snehapaan in 20 ml dose abhukta kaala for 21 days. Among the seven kalas, the Shleshmadhara-kala present in all sandhis facilitates their proper functioning of joints. The ruksha guna at sandhi is controlled and lubrication of the joint is maintained and the movement at the joints becomes more free as well as less painful due to shleshakapha in sandhi, Snehadravaya tail improves the work of shleshmadhara kala, and it is important for reducing the

joint stiffness, this occurs due to 'tulyayonigunatva' of the snehadravaya and shleshmadhara kala. Significant result was found symptoms of sandhi shoola (b/l knee joint pain), vata purna druti sparsha (crepitus), Graha (restricted movement). Shleshmadhara-kala can be correlated with synovial membrane covering the inner surfaces of the joints, the synovial fluid secreted by this membrane can be considered as shleshma. Kala can be a one of treatment site for management of diseases related to it.

Keywords : Dhatukshaya janya sandhigata vata, Shleshmadhara-kala, Osteoarthritis, synovial fluid, Shaman snehapaan.

INTRODUCTION:

In Ayurveda osteoarthritis is correlated to sandhigata vata .. Acharya Charaka described the disease under vata vyadhis. Charaka described the disease with the symptoms such as shotha, akunchana prasaranae vedana, vata purna driti sparsha¹. Due to nidana sevana vata prakopa take place in the joints and give

rise to the symptoms such as swelling in the joints, pain on contraction and extension on palpation it appears as if it is a leather bag filled with air². Osteoarthritis is a middle age common joint disorder which is due to aging and wear and tear of joints. Pain and stiffness which gets worsened after exercise or pressure on joints are the most common symptoms and the other symptoms includes stiffness of joints, difficulty in moving joints and crepitus during movement of joints. Pain and stiffness usually felt during morning hours, after waking up and often last for 30 minutes or less, which can be said as morning stiffness. Pain usually worsen during activity and comes down on rest. In severe form of OA patient gets pain even at rest. For osteoarthritis, contemporary science have certain limitation for managing the disease. They mostly go for the conservative treatment and it may have some adverse effects. Acharya Sushruta pioneer of Rachana Shareera presented the science of Kala Shareera in the chapter "Garbhavyakarana nama shareera" under which he tried to emphasize the concept of kala along with fundamental science. Vagbhat has then added the embryological development of kala.

KALA IN SHUSHRUT SAMHITA: ³

कलाः खल्वपि सप्त भवन्ति
धात्वाशयान्तरमर्यादाः॥५॥

Coverings of snayu, proper encasing (of the fetus) by jarayu and coverings by shleshma are kalas. Kala is antara maryada (boundary) between dhatu and ashaya; in other words, it provides an interface (barrier) between dhatu and ashaya. Its existence is inferred by its

function; that is of supporting the relevant dhatu.

Seven kalas are appearing as structure intervening between dhatu and their seat ashayas⁴. Their names and details as furnished in susruta samhita chapter 4 of sarirsthana is as follows-

1) **Mamsadhara kala**⁵- present inside the muscles and allow the formation of net work of veins, arteries, tendons and other tubular structures.

2) **Raktadhara kala**⁶- present inside the muscles and more in the liver and spleen and holding the blood inside them

3) **Medodhara kala**⁷- present in abdomen and interior of the bones holding the bone marrow (red marrow in small bones and yellow marrow in big bones)

4) **Sleshmadhara kala**⁸- present inside the bony joints providing lubrication for easy movement.

5)-**Purisdhara kala**⁹- present inside the pakvasaya and (intestine) attends to the function of separation the waste (faecal matter) at the unduka.

6) **Pittadhara kala**¹⁰- present inside the amasaya (stomach and duodenum) with holds the ingested food for sometimes in the amasaya and attends the cooking of food.

7) **Sukradhara kala**¹¹- present in the right side of the urinary bladder spoken in terms of modern anatomical knowledge, they may be

Among the seven kalas, fourth is **Shleshmadhara-kala** is very important amongst all of them which is situated in all the sandhis (joints). Thus the Shleshmadhara-kala present in all sandhis facilitates their proper functioning¹²

चतुर्थी श्लेष्मधरा सर्वसन्धिषु प्राणभृतां भवति
॥१४॥

स्नेहाभ्यक्ते यथा ह्यक्षे चक्रं साधु प्रवर्तते ।

सन्ध्यः साधु वर्तन्ते संश्लिष्टाः श्लेष्मणा तथा
॥१५॥

Properly lubricated wheel's axis function properly; similarly, with properly adhered shleshma (kala) the joints work properly.

According to Ashtanga Samgraha and Ashtanga Hrudaya¹³:

Both Acharyas given similar description i.e The moisture that remains inside the spaces in the dhatus (tissues) gets cooked (processed) by the heat present in them (tissues), forms into structure similar to those found in the wood (tree) and become covered with snayu (tendinous sheath), shlesma (kapha) and jarayu (chorionic membrane). It is called as kala, because it is formed from very little quantity of rasa, and essence of dhatus (tissues).

According to Bhavaprakasha Samhita¹⁴:

The kleda (lubricating material, moist substances) present inside the dhatu (tissue), ashaya (organ/viscera), and dhatvantara (places in between organs/tissue) which gets cooked by the dehosma (heat of the body tissues) is known as kala.

According to Sharangadhara Samhita¹⁵:

Shleshmadhara-kala is very important amongst all of them which is situated in all the sandhis (joints).Thus the Shlemadhara-kala present in all sandhis facilitates their proper functioning.

Shleshmadhara kala:

The kala (lining) having importance in the present subject is Sleshmadhara. It is stated to be present in all joints. The

shleshma contained in the sac lubricates the joint and enable them to function smoothly like a wheel which easily rotates upon a well greased axle.20 ml of til tail both the time in abhukta kaal as shaman snehpaan was selected for the present study as it has shown good effects for the Vata Vyadhis. Current trial was conducted to study the etiopathogenesis of Sandhigatavata. Shleshmadhara-kala situated in all joints supported by shleshaka kapha, helps in lubrication .Thus the Shleshmadhara-kala present in all sandhis facilitates their proper functioning of joints.the rukshguna at sandhi is controlled and lubrication of the joint is maintained and the movement at the joints becomes more free as well as less painful due to shleshakapha in sandhi, Snehadravya tail improves the work of shleshmadhara kala ,and it is important for reducing the joint stiffness,this occurs due to 'tulyayonigunatva'¹⁶ of the snehadravya and shleshmadhara kala.

CASE REPORT:

Patient of age 49 years suffering with both knee joint pain since 4 years, consulted our hospital .Patient was suffering with bilateral knee joint pain since 4 years .She is a lecturer by profession and has the history of long standing also patient is overweight too. Patient noticed symptoms like pain while long standing 4 years ago .Initially she felt mild pain ,which later increased when she used to stand long after 1 year . She found audible crepitation while walking for long .Her daily activities like long standing, eating fast foods etc. made to increase the symptoms. She consulted a doctor nearby her home and started

taking some pain killers as per doctor's advice. This gave her only temporary relief .Over the time pain and swelling increased. she was advised to take an X-ray of both knee joint in standing view by her doctor ,which showed osteoarthritis of both knees ,in which right knee is severe compared to left knee.

ASHTA VIDHA PAREEKSHA:

1. NADI: vata kapha Pluse:-73/minute
- 2 .MOOTRAM: 4-5 times / day
- 3 .MALAM: 1 time
4. SPARSHA:-normal
- 5 .DRIK: normal
6. JIHVA: uncoated
7. SABDHA: normal
8. AKRITHI:-Sthool

x- ray of both knee joint in standing view:degenerative changes seen in both knee joints.

ASSESSMENT CRITERIA:-

CRITERIA	SCORE
1.SANDHI SHOOL (JOINT PAIN)	0
No pain	1
Mild pian/occasional pain	2
Moderate /frequent pain	3
Severe pain	
2.SANDHISHOTHA(swelling)	0
Nil,no swelling	1
Mild,feeling of swelling with heaviness of joint	2
Moderate,apparent swelling	3
Severe ,huge swelling	
3.SANDHIGRAHA (JOINT STIFFNESS)	0
Nil,No stiffness	1
Stiffness for 30 minutes	2
Stiffness after sitting or walking for long time	3
Stiffness whole day or whole night or both	
4.SPARSHAYATA (JOINT TENDERNESS)	0

No tenderness	1
Pain on pressure	2
Patient winches in pressure	3
Patient winches and withdraws affected part	
5.AKUNCHANA PRASARANJANYA VEDANA (JOINT RESTRICTION)	0
No restriction	1
Mild restricted	2
Partially restricted	3
Fully restricted	
6.SANDHISPUTANA (CREPITUS)	0
No Crepitus	1
Palpable Crepitus	2
Audible Crepitus	
7.GAMANKASTHATA (PAIN WHILE WALKING)	0
No pain while walking	1
mild pain while walking	2
moderate pain while walking	3
severe pain while walking	

MATERIAL AND METHODS:

Patient was treated on opd basis with oral medications for 21 days

DRUG	Til tailam for panartham
DOSE	20 ml orally both the times a day for 21 days.
AUSHADH SEVAN KALA	Abhukta
ANUPANA	Ushna jala
DIET	Supachaya ahar
FOLLOW UP	After every 7 days to check the recurrence of the symtoms.

OBSERVATION AND RESULT:

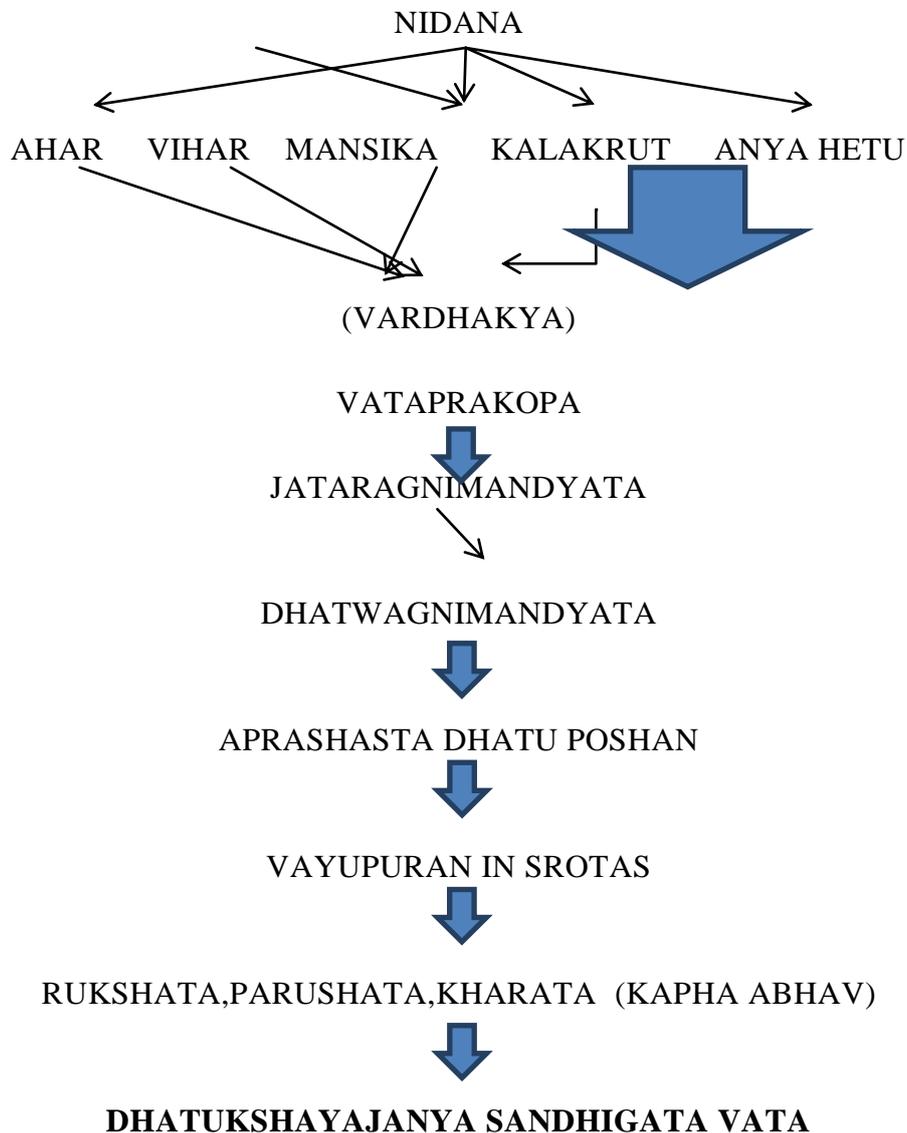
SYMPTOMS	Before Treatm ent	After treatm ent
SANDHI SHOOL	3	1

(JOINT PAIN)		
SANDHISHOTHA(SWELLING)	0	0
SANDHIGRAHA (JOINT STIFFNESS)	2	0
SPARSHASHAYATA (JOINT TENDERNESS)	2	1
AKUNCHANA PRASARANJANYA VEDANA (JOINT RESTRICTION)	3	1

SANDHISPUTANA (CREPITUS)	2	1
GAMANKASTHATA (PAIN WHILE WALKING)	3	1

It is observed that til tila was very much beneficial to reduce the intensity of vatapurna drutisparsha, shula, akunchan prasarna vedana. The effect was long lasting after follow up also.

DISCUSSION:



In Ayurvedic view sandhis are the seat of sleshaka kapha. The most of the osteoarthritis is produced by ruksha guna. This localized vayu due to its ruksh, laghu, karadi guna over powers and undergoes all the properties of shleshaka kapha producing disease dhatukshayajanya sandhigata vata. Significant improvement was observed after treatment. In the present study taila which is described as being as 'marutaghana' without increasing kapha is used due to its sneha property, guru guna and ushna guna which collectively are treating vayu. The idea behind administering the shaman sneha before food, when the patient feels hungry is to increase its rate of utilization. The utilization of fat or lipid for cellular energy is more during starving or during the period between two meals and when the utilization of carbohydrate is less. The Janu sandhi is a variety of Chestavanta sandhi. The shleshaka kapha and shleshmadhara kala will help for the free movement of joint. As per modern concern this joint is hinge variety of synovial joint. The same synovial membrane and synovial fluid may correlate with the shleshmadhara kala.

Shleshaka kapha present in the sandhis provides the lubricant factors, Shleshmadhara kala situated in the joints supported shleshaka kapha, helps in lubrication. It can be correlated to the synovial fluid situated in synovial joint that lubricates the knee joint that reduces the friction between the joints. Snehadravaya taila improves the work of shleshmadhara kala, and it is important for reducing the joint stiffness, this occurs due to

'tulyayonigunatva' of the snehadravaya and shleshmadhara kala.

CONCLUSION:

The present study is an attempt to explore the role of shaman snehpana on shleshmadhara kala. Study of kala is important in study of human physiology along with the anatomy. Anatomically it separates Dhatu and Ashaya where as physiologically it does the dharan of its responsible dhatu. When either of the two functions is disturbed, pathology occurs and so for the treatment purpose, study of kala is important. Kala can be a one of treatment site for management of diseases related to it.

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