

## A Review on Role of Upanaha in Janu Sandhigata Vata

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### Abstract

Osteoarthritis is a degenerative disease affecting weight-bearing joints usually seen in the elderly people and the people who do excessive physical deeds. Ayurveda explains many bahyaparimarjana chikitsa (external therapies) for Sandhigata vata like Daha, Sweda, Sneha and Upanaha. Upanaha sweda or poultice application is one of the treatments described in the management of Sandhigata vata and inflammatory swelling. Pain management is one of the emerging areas of research and development in Ayurveda. Upanaha sweda or Poultice is proved effective in the management of pain and other conditions where external treatment is employed. Here an attempt is made to explain about role of Upanaha sweda and its mode of action in niram Janu Sandhigata vata.

**Keywords:** Osteoarthritis; Sandhigata vata; Upanaha and Transdermal etc.

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### Introduction

Osteoarthritis is a degenerative disease affecting weight-bearing joints, often described as wear and tear arthritis. Knee joint is the most important weight-bearing joint in the body and osteoarthritis of the knee joint is the most common joint disorder usually seen in the elderly people and the people who do excessive physical deeds. In Vriddhavastha, all dhatus undergo kshaya, thus leading to Vata Prakopa and making individual prone to many diseases. Among them Sandhivata stands top in the list.

So osteoarthritis of knee can be correlated to the Janu Sandhi Vata due to the similarities in the symptoms of both. It is characterized by Vatapurna Driti Sparsha, Prasarana Akunchana Vedana, Shotha and Atopa.<sup>1-3</sup> Main gunas of Vata being

Rukshata, Sheeta, Parush and Kharata causes dryness in articular membrane and fluid (Synovial) in joint making movement painful and restricted. The treatment principle lies on restoration of articulation and lubrication along with decreasing the pain and inflammation.

According to Acharya Yogaratnakar Kuryata Sandhigate Vate Dahaswedopanahanam, i.e Dahan, swedana and upanaha are main line of treatment for sandhigatavata. Upanaha is type of sweda which reduces pain, stiffness and heaviness. Upanaha (Application of poultice) is a local treatment in which combination of churnas (powdered herbs) are made into paste using sneha dravya (unctuous materials—oil/ghee/muscle fat/marrow), amla dravya, kinva (fermented liquid), made hot and applied over the required site. This is meant to reduce the local inflammation of the site and also to act as a topical/local analgesic.

## Etymology and Definition of Upanaha

The word 'Upanaha' is split as upa + nah, in which upa is upasarga (prefix) which means near, nah bandhane means to tie or bind. The other meanings of upanaha are bandage, bandage with warm paste of medicaments. The procedure of applying warm herbal paste to the affected parts of the body followed by bandaging is called as Upanaha sweda.<sup>4</sup> Bandage using charma (leather) or pata (cloth), bandage applied for vranapaka (suppuration of wound) Most of the classical texts have considered Upanaha as bandhana (tying) and lepa (application).

## Types of Upanaha

According to Chakrapani<sup>5</sup> 1) Sagni Upanaha, where the drugs are heated first and then applied. 2) Niragni Upanaha, where Ushna Veerya Dravya (drugs with hot potency) are applied without heating.

According to Dalhana there are 3 varieties of upanaha<sup>6</sup>: 1). Pradeha 2). Sankar sweda 3). Bandan.

Charaka considered upanaha as niragni sweda (sudation without heat). Arunadatta also classified Upanaha into two categories: **Sagni-sankara sweda** (fomentation using heated bundle of drugs) done by using Kola (*Zizyphus jujube* Linn.), Kulattha (*Dolichos biflorus* Linn.), Suradaru (*Cedrus deodara* Roxb.), Rasna (*Pluchea lanceolata* DC), etc. drugs explained in Aragvadheeya gana and Anagni—By creating Shareera ushma avarodha (retaining the internal heat within the body) by external force (wrapping a thick cloth/ soft leather/applying). Acharya Charaka and Vagbhath have mentioned specific combination of dravyas Upanaha for kevala vaata vikar. So, this combination of drugs can be used for niram Janu Sandhigata vata or Nirupsthambith Janu Sandhigata Vata.

**Table 1:** Combination of drugs can be used for niram Janu Sandhigata vata.

Acharya	Vaata dosha	Materials used
Charaka	Keavala vata dosha <sup>7</sup>	Godhuma, Yava with Sneha and Kinva
Sushruta	Keavala vata dosha <sup>6</sup>	Vatahara dravyas (herbs pacifying vata) made into paste with kanji (fermented gruel) and lavana (rock salt); Krishara, Paayasa, Utkarika (food preparations), Veshavara (meat preparation) and salvana upanaha.

Vagbhath	Keavala dosha <sup>8</sup>	vata	Vacha ( <i>Acorus calamus</i> Linn.), Kinva (fermented product), Shatahva ( <i>Foeniculum vulgare</i> Gaertn), Devadaru ( <i>Cedrus deodara</i> Roxb.); Dhanyas (food grains) like Tila, Masha, etc., Gandha dravyas (aromatic drugs) like Kushta ( <i>Saussurea lappa</i> C.B.CL), Agaru ( <i>Aquillaria agollacha</i> Roxb.), Tagara ( <i>Valeriana hardwickie</i> Wall.), Surasa ( <i>Ocimum santum</i> Linn.); Erandamula (roots of <i>Ricinus communis</i> Linn.), Eranda ( <i>Ricinus communis</i> Linn), Rasna ( <i>Alpinia galangal</i> Linn.), Mamsa (flesh of animals/birds), Sneha dravya (unctuous materials), Lavana (rock salt), Takra (butter milk), Chukra ( <i>Garcinia indica</i> Linn.), Go Ksheera (milk).
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Sushruta also mentions about Salvana Upanaha in Vatavyadhi chikitsa, in which the quantity of lavana is comparatively more.

**Table 2:** Procedure of Upanaha

- Poorva Preparation upanaha: karma**  
 200 gm of required Vatahara Upanaha churna is taken and it should be mixed with Kanji, Kinva, Sneha, Arista, Veshavara, Utkarika, etc., and made paste. Heat the paste on pan up to mild thick consistency and kept ready.  
**Preparation of the Patient**  
 Patient is asked to lie down in supine position or sit comfortably.  
 The affected part, i.e. Knee joint is given Abyanga and exposed.
- Pradhana karma**  
 Local Abhyanga is done to the knee joint and then apply the luke warm paste about 3 to 5 mm thickness over knee joint completely and Place *Eranda* leaves over the paste and then bandage with thick cotton cloth. It is applied for 12 hours. Any skin rash, itching, redness of joint, swelling etc. observed after application immediately stop the treatment. Complications are managed accordingly.
- Paschat karma**  
 Upanaha is applied in night retained up to morning vice versa, then it is removed and the part will be cleaned with warm water.

The lepa should be applied against the direction of hair follicles.<sup>5</sup> Lepa thus applied facilitates easy absorption of the drug through the Roma Koopa and stays for long duration.<sup>5</sup> The thickness of lepa application on the skin should be equal to the thickness of the buffalo skin (Ardra Mahisha Charma).<sup>9</sup> The thickness of the fresh buffalo skin before tanning is in the range of 3 to 5 mm thick. The special advantage of Upanaha is that it can be applied overnight. Due to the presence of Sneha Dravya Upanaha does not dry up and can be left on the body for a longer duration compared to other lepas. The bandage should neither be loose nor very tight. Classical texts mention the use of charma

(skin) of animals which are of ushna veerya (hot potency), devoid of hair and free from fetid smell or Kousheya (Silk), Aavika (Woolen) or Shakata (Cotton cloth).<sup>5</sup> But, presently we are using cotton cloth for bandaging of upanaha. Susruta opines that Upanaha Sweda is specifically indicated in case of Sankuchyamana (Contractures), Rujartha (pain predominant condition), Stabdha gatra (stiffness),<sup>10</sup> but contraindicated in Pitta Rakta avarana (obstruction to functioning of rakta by pitta).

### Discussion of Vatahara Upanaha Sweda Churnas and their action on Janusandhigatavata

The drugs used for the Upanaha Yoga are having almost all the properties that are mentioned for Sweda dravya's. The vatahara upanaha mentioned by Charaka, i.e. Godhuma, Yava with Sneha and Kinva, and Acharya Vagbhath mentioned vatahara upanaha sweda, i.e. Vacha (*Acorus calamus* Linn.), kinva (fermented product), shatahva (*Foeniculum vulgare* Gaertn), devadaru (*Cedrus deodara* Roxb.); dhanyas (food grains) like Tila, Masha, etc. Gandha dravyas (aromatic drugs) like Kushta (*Saussurea lappa* C.B.CL), Aagaru (*Aquillaria agollacha* Roxb.), Tagara (*Valeriana hardwickie* Wall.), Surasa (*Ocimum santum* Linn.); Erandamula (roots of *Ricinus communis* Linn.), Rasna (*Alpinia galangal* Linn.), Mamsa (flesh of animals/birds), Sneha dravya (unctuous materials), Lavana (rock salt), Takra (butter milk), Chukra (*Garcinia indica* Linn.) Goksheera (milk). Both are having vatahara, shothahara, sthambhahara and shoolahara property. By the reference of Charaka Samhita Chikitsastana "Upanaham cha vatahara dravyer eva kartavyam." It is also believed that any type of pain cannot be without presence of Vata, where treatment modalities like Snehana, Swedana, etc. are indicated. Upanaha Sweda has been mentioned to reduce Stabdha, Gourav and Shoola, etc. conditions. Upanaha Sweda is Vatanashaka by virtue of its Ushna, Snigdha Guna. It combats with the properties of Vata like Sheeta, Ruksha, Khara and Laghu Guna. Due to increased temperature produced, the harmful metabolic products are removed through increased blood circulation and sweat.

The action of the Upanaha depends on the materials used for the application, duration of retaining on the skin surface and thickness of the paste applied. The action of Upanaha is through transdermal drug delivery system.

The advantages of Transdermal Drug Delivery

System are.<sup>11</sup>

1. Avoidance of hepatic first pass metabolism.
2. Avoidance of gastrointestinal incompatibility.
3. Predictable and extended duration activity.
4. Minimizing undesirable side effects.
5. Provides utilization of drugs with short biological half-lives.
6. Narrow therapeutic window.
7. Improving physiological and pharmacological response.
8. Avoiding the fluctuations in drug levels.
9. Termination of therapy is easy at any point of time.
10. Greater patient compliance due to elimination of multiple dosing profile.
11. Ability to delivery drug more selectively to a specific site.
12. Provides suitability for self-administration.

The penetration of drug through the tough, horny layer, stratum corneum is greatest challenge in the epidermal drug transport. Food materials like payasa, krushara, milk, dadhi, amla pishta, Veshavara are Snigdha in action and used in Sagni Upanaha. The biocompatible and bio similar excipients like liposomes and micro emulsions can integrate with the lipids of the biological membrane, which can pass through the intercellular spaces of skin cells and helps in the delivery of the drug. The large sized colloidal carriers get adsorbed into the stratum corneum and release the drug by diffusion. The highly lipid soluble drugs can be applied over the skin for slow and prolong absorption. The liver is also bypassed.<sup>12</sup> Studies have revealed that the lipid medium is highly suitable for penetration of the drug molecule through stratum corneum on this basis, it can be assumed that the oil used in Nirgundipatra upanaha serves as a lipoidal medium for penetration of drug molecules and exerts immediate anti-inflammatory effect.<sup>13</sup> The excreta of animals being organic substances, they may act as good heat retainers, thus would enhance the process of fomentation and produce analgesic effect. The sour or fermented materials used in the Upanaha application help to permeate the active principles from one surface (media) to another. In the present scenario, vinegar is used as fermented material instead of the conventional gruel. Most of the food materials which possess madhura rasa (sweet taste) or vatahara (pacifying vata dosha) in action. Oil acts as heat barrier and also simultaneously facilitates absorption of drugs. It also prevents the Upanaha from drying up and

causing skin irritation.

### Mode of action of Upanaha in Janusandhigata vata

#### *Mode of Action – Absorption through skin*

Acharya Sushruta in Shareera sthana explains – Out of the four Tiryak Dhamanis, each divides gradually hundred and thousand times and thus become innumerable. These cover the body like network and their openings are attached to Romakupa. Through them only Veerya's of Abhyanga, Parisheka, Avagaha, Alepa enter into the body after undergoing Paka with Bhrajaka Pitta<sup>14</sup> in skin. Sushruta in Sutrasthana explains, Lepa like Bahirparimarjana<sup>5</sup> treatments yield result by entering to Romakupa thereby circulating through Swedavaha Srotas Vagbhata in Ashtanga Hridaya while explaining the functions of Bhrajaka Pitta narrated that – Bhrajaka Pitta will do Pachana of drugs used in Abhyanga, Parisheka, and Lepa.<sup>15</sup> Thus with the above references it can be said that drugs used in Upanaha procedure get absorbed through and produce action according to the property of the medicine. Seven days course of Upanaha Sweda was given to the patients of both the groups. Suspending the drug in an oily vehicle can enhance absorption through the skin. Because hydrated skin is more permeable than dry skin.

#### *Drug Delivery<sup>11</sup>*

The primary barrier to absorption of exogenous substances through the skin is stratum corneum. Rate of absorption is directly proportional to concentration of drug in vehicle, partition coefficient, diffusion coefficient and thickness of the stratum corneum. Physiological factors that affect percutaneous absorption include hydration, occlusion, and age, intact versus disrupted skin, temperature and anatomic site. Among vehicles greases are anhydrous preparations that are either water insoluble or fatty. Fatty agents are more occlusive than water-soluble. They restrict transepidermal water loss and hence preserve hydration of the stratum corneum. Absorption depends upon lipid solubility of the drug since the epidermis as a lipid barrier. The dermis however is freely permeable to many solutes. Suspending the drug in an oily vehicle can enhance absorption through the skin. Because hydrated skin is more permeable than dry skin. Application of medicaments, heat and massage definitely helps in eliminating the number of noxious elements

through skin. The application of heat in different forms of Swedana promotes local circulation and metabolic activities and also opens the pores of the skin to permit transfer of medicaments and nutrients towards to needed sites and elimination of vitiated Doshas and Malas through skin and perspiration.

**Physiological effect of Heat<sup>16</sup>:** Heating the tissues results in increased metabolic activity, increased blood flow and stimulation of neural receptors in the skin or tissues and many other indirect effects.

**Increased metabolism:** The increase in metabolism is greatest in the region where most heat is produced, which is in the superficial tissues. As a result of the increased metabolism there in any increased demand for oxygen and foodstuffs, and an increased output of waste products, including metabolites.

**Increased blood supply:** As a result of increased metabolism, the output of waste products from the cells is increased. These include metabolites, which act on the walls of the capillaries and arterioles causing dilatation of their vessels. In addition, the heat has a direct effect on the blood vessels, causing vasodilatation, particularly in the superficial tissues where the heating is greatest. Stimulation of superficial nerve endings can also cause a reflex dilatation of the arterioles. As a result of vasodilatation there is an increased flow of blood through the area so that the necessary oxygen and nutritive materials are supplied and waste products are removed.

**Effects of heating on nerves:** Heat appears to produce definite sedative effects. The effect of heat on nerve conduction has still to be thoroughly investigated. Heat has been applied as a counter irritant, which is the thermal stimulus, may affect the pain sensation as explained by the gate theory of Melaka and Wall.

**Indirect effects of heating:** Muscle tissue – Rise in temperature induces muscle relaxation and increases the efficiency of muscle action, as the increased blood supply ensures the optimum conditions for muscle contraction. General rise in temperature – As blood passes through the tissues in which the rise of the temperature as occurred, it becomes heated and carries the heat to other parts of the body, so that if heating is extensive and prolonged a general rise in temperature occur. Fall in blood pressure – If there is generalized vasodilatation the peripheral resistance is reduced, and this causes a fall in blood pressure. Heat reduces the viscosity of the blood, and this also tends to reduce the blood pressure.

Increased activity of sweat glands— There is reflex stimulation of the sweat glands in the area exposed to the heat, resulting from the effect of the heat on the sensory nerve endings. As the heated blood circulates throughout the body it affects the centers concerned with regulation of temperature, and there is increased activity of the sweat glands throughout the body.

### Conclusion

Upanaha is effective topical application in the management of Janu sandhigata vata. Due to its Ushna, Snigdha and Mrudu guna counter acts with sheeta, ruksha and khara guna of vata and relieves Sthamba, Shotha and shoola of Janu sandhi. It acts by transdermal drug delivery system through lipid media. Upanaha dravya due to their virya enter into the body through Romakupa undergo paak by Brajak pitta and yield effect according dravya used. Application of Upanaha to affected part causes local vasodilatation, stimulation of superficial nerve endings, increased blood flow and increased nutrients supply increases metabolism. As a result of increased metabolism, the output of waste products from the cells is increased through skin and perspiration.

### References

1. Vaidya Kashinath Shastri, Charaka Samhita, Uttarard, Chaukhambha Sanskrit Samsthana, Reprinted-2009, Chikitsa Sthana 28\37, p.667.
2. Vaidya Anna Moreshwar Kunte and Krishna Ramachandra Shastry-Annotated. Ashtanga Hrudaya Sarvanga Sundari and Ayurveda rasayana of Arunadatta and Hemadiri, Chaukhambha Sanskrit Samsthana, Reprint-2011, Nidana Sthana 15/14, p.531.
3. Vaidya Lakshmipati Shastry, Yogaratnakar, Chaukhambha Sanskrit Sansthan, Varanasi, Edition 7th, Reprint-1999.p.505.
4. Dr B A Lohith, The Text book of Panchakarma, Chaukhambha orientalia Varanashi, p-137.
5. Acharya Pavhena Trivikramatmajena Yadav, Susruta Samhita, Chaukhambha Sanskrit Sansthan, Varanashi, Reprint 2012, Sutra Sthana 18/04,p.85.
6. Acharya Pavhena Trivikramatmajena Yadav, Susruta Samhita, Chaukhambha Sanskrit Sansthan, Varanashi, Reprint 2012, Chikitsa Sthana 32/12,p-513.
7. Vaidya Kashinath Shastri, Charaka Samhita, Poorvard, Chaukhambha Sanskrit Sansthan Reprint-2011, Sutra Sthana 14/35-37,p-202.
8. Vaidya Anna Moreshwar Kunte and Krishna Ramachandra Shastry-Annotated. Ashtanga Hrudaya Sarvanga Sundari and Ayurveda Rasayana of Arunadatta and Hemadiri, Chaukhambha Sanskrit Sansthan, Reprint-2014, Sutra Sthana 17/2-5,p.253.
9. Acharya Pavhena Trivikramatmajena Yadav, Susruta Samhita, Chaukhambha Sanskrit Sansthan, Varanashi, Reprint 2012, Sutra Sthana 18/11,p.85.
10. Acharya Pavhena Trivikramatmajena Yadav, Susruta Samhita, Chaukhambha Sanskrit Sansthan, Varanashi, Reprint 2012, Chikitsa Sthana 32/22,p.514.
11. Himanshi Tanwar and Ruchika Sachdev, Transdermal Drug Delivery System: A Review, International Journal of Pharmaceutical Science and Research, www.ijpsr.com.
12. Dr K D Tripathi, Essentials of Medical Pharmacology, Jaypee Brothers Medical Publishers, 6th edition, Reprint 2010, Chapter 1,p.9.
13. Benson HA, Transdermal drug delivery: Penetration enhancement techniques, Current Drug Delivery, 2005;Jan 2(1):23-33.
14. Acharya Pavhena Trivikramatmajena Yadav, Susruta Samhita, Chaukhambha Sanskrit Sansthan, Varanashi, Reprint 2012, Sharira Sthana 9/9,p.385.
15. Vaidya Anna Moreshwar Kunte and Krishna Ramachandra Shastry-Annotated. Ashtanga Hrudaya Sarvanga Sundari and Ayurveda rasayana of Arunadatta and Hemadiri, Chaukhambha Sanskrit Sansthan, Reprint-2014, Sutra Sthana 12/14,p -194.
16. Sreeraj, S.R, Physiologic and Therapeutic effect of heat, www.slideshare.net.

