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EFFECT OF MUSTADI UPANAHA AND TAILA DHARA IN AVASCULAR NECROSIS OF HIP JOINT: SINGLE CASE STUDY

Sarmah Jyoti Manab[1], Mahor Bharti[2], Arse Reshma[3], Kumar Pravesh[4]

[1]P.G. Scholar, [2]P.G. Scholar, [3]P.G. Scholar, [4]Associate Professor
Department of Panchakarma, Rishikul Campus, Uttarakhand Ayurved University, Uttarakhand, India

Corresponding Author: reshmaarse0473@gmail.com

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ABSTRACT

Avascular necrosis is a disease in which cellular death of bone component occurs due to interruption of the blood supply. Bone fractures, joint dislocations, alcoholism and long-term use of steroids are the commonly found risk factors of the disease. The disease generally happens in 35 to 60 years old population and commonly affects hip joint. About 10,000 to 20,000 people usually develop osteonecrosis of head of femur yearly in United States. This case deals with a diagnosed case of avascular necrosis of the femoral head in a 68 years old female. Patient had been suffering from pain in the left hip joint since 5 years. She had been under allopathic conservative treatment for her complaints, but symptoms aggravated rapidly since 4 months. So, for further management, she came to Out Patient Department of *Panchakarma*, Rishikul Campus where three sittings of local application of *Mustadi Upanaha* on left hip region along with *Taila Dhara* with *Dhanwantaram Taila* was performed. After three sittings, she got significant relief in joint pain and her quality of life. The assessment was done based on both subjective as well as objective parameters after each sitting. This study reveals that Panchakarma procedure like *Mustadi Upnaha*, Taila Dhara provided a significant relief in this case.

Keywords: Avascular necrosis, *Mustadi upanaha*, *Taila Dhara Panchakarama*

INTRODUCTION

Avascular necrosis also known as osteonecrosis is characterised by osseous cell death due to vascular compromise. Ischemia of the bone tissue occurs leading to infarction which further cause necrosis due to lack of oxidative phosphorylation. Body tissues need oxygen for proper functioning, without which there is impaired metabolic functioning. Avascular necrosis of bone results generally from corticosteroid use, trauma, SLE, pancreatitis, alcoholism, gout, radiation, sickle cell disease, infiltrative disease, (e.g. Gaucher's disease), and Caisson disease[1]. AVN is multi-factorial but can begin with interruption of blood and oxygen supply to vasculature in and around bone and progresses to trabecular thinning (also seen in cases of osteoporosis) and eventually, collapse of bone. The most vulnerable site is the femoral head. The site of necrosis is usually immediately below the weight bearing articular surface of the bone (i.e. the anterolateral aspect of the femoral head). This is the site of greatest mechanical stress.

This patient presented with avascular necrosis of left hip joint with pain referred to the left thigh and knee. The possible cause in this case was history of fall down and left without medical management. It appears that this avascular necrosis may have been initially overlooked.

Radiological features of osteonecrosis generally involve collapse of the articular cortex. Fragmentation mottled trabecular pattern, sclerosis, subchondral cyst, and/or subchondral fracture. This patient's radiographs demonstrated the presence of irregular outline in left femoral head with sclerosis. Bilateral hip joints spaces were reduced (suggestive of avascular necrosis of left head of femur and osteoarthritic changes of right head of the femur).

Treatment is mainly surgical and generally involves a total hip replacement or arthroplasty for end-stage femoral head osteonecrosis using either a cemented or cement less prosthesis. Cemented total hip arthroplasties have been reported as being inferior with high failure rates in younger patients and in patients with femoral head necrosis because of their inferior durability.

Avascular necrosis can be compared in *Ayurveda* as *Vatavyadhi*. Symptoms mainly mimic to the *Asthi-majjagata Vata Lakshanas*. Here *Ruksha, Laghu, Vhala Gunas* of *Vata* gets diminished. Thus, the case presents the clinical features as *Sandhisool, Bhedo Asthi-parvanam*, *Satata ruk, Mamsa bala Kshaya* and *Aswapna*[2] which correlate the symptoms of Aascular necrosis.

Case Report

A female patient of 68 years old having complaint of difficulty in walking upstairs and severe pain in left hip region radiating to thigh in any posture since last 4 months. Patient has been suffering from same complaints (mild to moderate intensity) since 5 years. She had undergone conservative treatment from allopathic hospital for the same. Lastly, her symptoms aggravated since 4 months hampering day to day activities. So, for further management, she came to Out Patient Department of *Panchakarma*, Rishikul Campus. She was nondiabetic, no history of hypertension, thyroid problem. There was neither history of trauma nor other medical or surgical illness as well as no history of long use of steroids etc. But, she had a history of fall down on hip 7 years back. She was bed ridden out of pain for 3 days, relieved by self-medication (pharmacy, home remedy). Obstetric history was $G_4P_3A_1$ L_3. Patient had often taken allopathic medicine for her pain from pharmacy (self-medication).

The Patient, resident of Haridwar, Uttarakhand an elderly lady of Muslim community from middle class family. She is habituated to non-vegetarian diet with addiction to tea (4/5 cup daily) and paan (3/4 daily). Appetite is normal. Bowel habit and micturition is normal. She attained menopause 21 years back. Other features of general examinations are within normal limit. There is no family history noted for the same complaint. On examination the basic parameters such as B.P. (130/80 mmHg), Pulse rate (76/min), Respiratory rate (22/min), Heart rate (76/min) are within normal limit. Pallor, icterus, cyanosis, edema, dehydration, were absent. No local lymphadenopathy, clubbing noted. On systemic examination,

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cardiovascular, respiratory, central nervous system, gastrointestinal system and urogenital system are found within normal limit.

Musculo-skeletal system:

Patient had painful limping gait. She was more comfortable to walk with support. There was no anatomical deformity detected in spine and upper extremities. Mild pain and tenderness were noted in sacral region, left hip region radiating upto left thigh. No swelling, no redness, no muscle atrophy was noted. Painful, restricted movements (all directions) were noted in left hip joint. Muscle power was noted 5/5 in bilateral legs.

During *Dashavidhparikshaya Bhava* examination, patient was observed as,

Pakruti: *Kapha-Vata;* ***Vikriti****: Vata predominant;* ***Sara:*** *Medasarata in Pravar; Mamsa in Madhyam; Rasa, Rakta, Asthi Majja, Shukrasarata in Avar matra;* ***Samhanana****: Madhyam;* ***Pramana****: Madhyam;* ***Satmya:*** *Madhyam;* ***Satva:*** *Madhyam;* ***Ahara shakti:*** *Avara;* ***Vyayama shakti:*** *Avara;* ***Vaya:*** *Vriddhavastha;* ***Samprapti Ghatak; Dosha****- Vata;* ***Dushya****- Rasa, Rakta, Asthi, Majja;* ***Srotas****- Asthivaha, Majjavaha;* ***Agni****- Vishamagni, dhatwagni manda;* ***Rogamarga****- Madhyam;* ***Sadhyasadhyta****- Yapya/ ashadhya*

The patient was suspected of avascular necrosis of the left hip joint with differential diagnosis of hip osteoarthritis, healed fracture. Radiological study revealed that there was avascular necrosis of left hip joint. The cause of the disease was not quite sure, risk factors were elderly overweight (86 k.g.) women with menopause. She had a past history of indirect injury to the hip joint. Patient was advised for surgical intervention, but she was not interested in surgery. She gave us written consent to continue with *Ayurvedic* management.

Intervention

Treatment was planned after considering *Samprapti* and *Doshik* assessment of both *Roga* and *Rogi*. *Mustadi Upanaha, Taila dhara* was applied in three sittings, each sitting was of 21days. *Taila Dhara* was performed by *Dhanwantaram Taila* in the morning time for 30 min and *Upanaha* was being tied in the evening time. 14 days of interval was chosen after each sitting. Follow up of the patient was done after completion and starting day of each sitting. The final follow up was done on 105th day of the treatment schedule. Vitals were checked each day prior to the therapy.

Ingredients of *Mustadi Upanaha*

A) Fine *Churna* of *Musta, Surakitta, Til, Kustha, Devdaru, Tagar* in equal amount
B) *Saindhav Lavan* Q.S.
C) Cow's milk Q.S.
D) Curd (cow) Q.S.
E) *Chatursneh (Ghrit, Taila, Vasa, Majja* in equal amount) [3] Q.S.

Preparation/ Procedure of application of *Mustadi Upanah*

The above-mentioned contents are mixed together and cooked under medium flame until it becomes semisolid form. The material was applied in the affected part, in 4 *Angula* diameter covered with *Eranda Patra* and finally tied with cloth. The *Upanah Dravya* is to be removed after 6 hours and then the part to be washed with lukewarm water.

Ingredient of *Dhanwantaram Taila*

For the whole study prepared *Dhanwantaram Taila*[4] was taken.

Procedure of *Taila Dhara*

In this patient *Pradeshik Taila Dhara* with lukewarm (38^0 - 40^0C) *Dhanwantaram Taila* was poured from *Dharapatra* from 4 *Angula* distance for 30 min. After the procedure the part was cleaned, and she was advised for hot water bath in the next hour.

Observation and Result

Treatment plan of therapy was for 105 days. Patient was treated in three sittings each of 21 days, 14 days interval was advised after each sitting. All the subjective as well as objective parameters were noted accordingly. Pain was significantly reduced, whether tenderness was relieved comparatively late to the pain (table No.1). Pain was assessed by Visual Analogue Scale(Fig No. 1) Walking performance of the patient was significantly improved (table No.1). Range of movement of the affected hip joint were measure with Goniometer (table No.2), where marked improvement was noticed

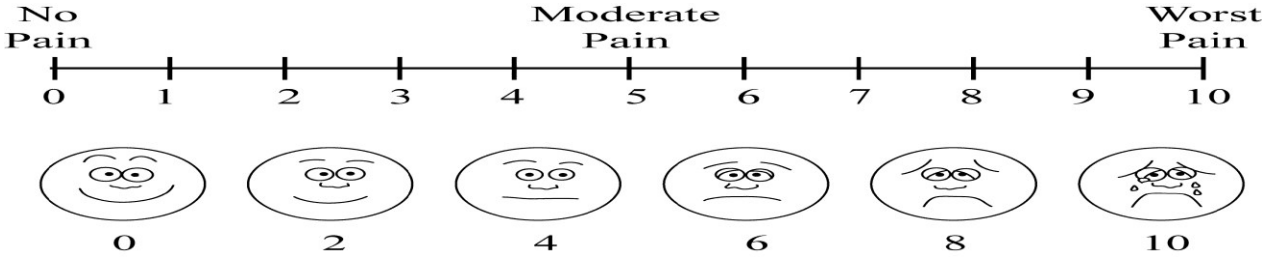
Table 1: Assessment Criteria

	Day 0	Day 21	Day 36	Day 57	Day 71	Day 92	Day 105
Pain	8	5	4	4	3	2	1
Tenderness	+++	+++	++	++	++	+	+
Walking steps in 1 min	10	18	24	30	58	64	80

Table 2: With Goniometer (In Degree)

Left Hip	Day 0	Day 21	Day 36	Day 57	Day 71	Day 92	Day 105
Flexion	60	72	78	84	84	94	100
Extension	4	6	6	8	10	12	12
Internal rotation	10	12	12	18	18	24	26
External rotation	10	12	12	16	18	20	22

Grading of pain is done with Visual Analogue Scale (VAS) Fig. No. 1



Patient was followed up after 5 months. There was no mentioning of deterioration of the sign and symptoms by the patient. The treatment improved her quality of life.

DISCUSSION

Avascular necrosis is characterized by osseous cell death due to vascular compromise. Avascular necrosis of bone results generally from corticosteroid use, trauma, SLE, pancreatitis, alcoholism, gout, radiation, sickle cell disease, infiltrative disease, (e.g. Gaucher's disease), and Caisson disease. The most commonly affected site is the femoral head and patient is usually hip and referred knee pain. This patient presented with avascular necrosis of left hip with pain referred to the left thigh. The possible cause in this case was history of fall down and left without medication. It appears that his avascular necrosis may have been initially overlooked.

Taila Dhara and *Upanah* are the type of *Swedan karma*. In both the therapies combined effect of *Snehana* and *Swedana* is attained. The basic differences are *Taila Dhara* is more *Snehana* than *Upanaha*, whether in *Upanaha* the contact time is more. More ever, the ingredient of *Dhanwantaram Taila* pacifies mainly *Vata Dosha* whether *Mustadi Upanah* embeds with *Vata Shamak* and *Brimhana* quality.

Upanah is a treatment module in Ayurveda which comes under *Swedan Karma*. It is categorized under both *Sagni* and *Niragni Swedan*. *Taila Dhara* is a *Bahyopkrama/bahiparimarjan Chikitsa* explained under *Dravasweda*. Both the *Therapies* are *Vata samak*, by virtue of its *Ushna*, S*snigdhaguna*. It combats with the properties of *Vatadosha* like *Sheeta, Ruksha*, *Laghuguna.* The *Swedana* are mainly of *Guru*, *Ushna*, *Tikshna* and *Sukshma* quality. By virtue of these qualities drug enters the *Dhatus* one by one i.e. *Rasa*, *Rakta*, *Mamsa*, *Medaasthi*, *Majja* and *Sukra. Ushna*, *Tikshna Gunas* of drug intensify the *Dhatwagni.* The *Swedan Karma* itself clears the *Srotas* of the body. *Ushna*, *Tikshna*, *Sara* and *Sukshma* properties of drugs opens up the *Srotas* which are under obstruction. Out of four *Tiryak Dhamanis*, each one is divided into hundred and thousand times thus become

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innumerable. These supply the body like network and their openings are attached to *Roomakupa*. *Virya* of *Bahya Chikitsa like Upanaha* etc. enter into the body after undergoing *Paka* by *Bhrajak Pitta* in the skin.

CONCLUSION

Avascular necrosis is a debilitating condition affecting day to day activities. As the disease is prevalent in elderly age the treatment should be cost effective, comfortable for the patient and with nil to minimal side effect. *Panchakarma* is a ray of hope in managing such cases. The present study sets an example in management of avascular necrosis. It can improve the quality of life of the patient.

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