



## Case Study

### THE ROLE OF PANCHAKARMA IN RESTORING BONE HEALTH IN AVASCULAR NECROSIS OF FEMUR

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#### ABSTRACT

Avascular Necrosis of the Femoral Head is a progressive, debilitating condition characterized by the loss of blood supply to bone tissue, resulting in bone degeneration and joint dysfunction. It commonly affects young adults, and if left untreated, can result in long term disability and the need for joint displacement. The presentation of AVN is nearly similar to *Gambheera Vatarakta*, *Asthimajagata vata* or *Asthi kshaya* depending on the course of the disease. **Materials and Methods:** A male patient aged 35 years presented pain in right hip joint which was associated with stiffness since 1 year 2 months was diagnosed as bilateral Avascular necrosis of femoral head. The patient was treated in 3 phases where *Manjistadi Kashaya seka*, *Vankshana basti*, *Manjistadi kshara* followed by *Ksheera basti* was done. **Results:** Clinical outcomes were assessed using pain scales, range of motion and MRI imaging. There was significant improvement in overall symptoms. **Conclusion:** Conventional treatments often include pharmacological management, core decompression or surgical intervention. This case reports deals with a detailed information regarding *Panchakarma* treatment in managing AVN of the femur.

#### INTRODUCTION

Osteonecrosis is a degenerative condition which is characterized by the death of cellular components of the bone. Pathology is due to an interruption of the subchondral blood supply. The other terms that are used interchangeably are ischemic bone necrosis, avascular necrosis and aseptic necrosis. It most commonly affects the epiphysis of long bones particularly at weight-bearing joints. Complications may include destruction of subchondral bone or the collapse of the entire joint<sup>[1]</sup>. The most commonly affected sites are the femoral head, humeral head, navicular and scaphoid<sup>[2]</sup>.

External trauma might be one of the reasons for this condition as it causes blockage in the blood supply to the bone.

This is the reason for osteonecrosis of the femoral head following fractures of the femoral neck and in patients with Thrombophilia, Antiphospholipid Syndrome, Gaucher's disease and Haemoglobinopathies such as Sickle cell disease. Other important predisposing factors include high dose glucocorticoid treatment, alcohol excess, Cushing's Syndrome, Atherosclerosis, Pancreatitis, Fat embolism, Collagen vascular disease, SLE, HIV and radiotherapy<sup>[3]</sup>.

The presentation is with pain localised to the affected site, which is exacerbated by weight bearing. The diagnosis can be confirmed by MRI, which shows evidence of subchondral necrotic bone and bone marrow oedema. X rays are normal in the early stages, but later may show evidence of osteosclerosis and deformity of the affected bone. Management should focus on controlling pain and encouraging mobilisation. Joint replacement may be required in patients who have persisting pain in association with significant structural damage to the affected joint<sup>[4]</sup>.

Ayurvedic understanding:

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*Vata prakopa* occurs due to the various *Nidanas* causing *Avarodha* to the *Rakta marga*, which in turn gets *Prakopa*. Later, both *Rakta* and *Vata* gets *Prakopa* and causes *Avarana* to one another<sup>[5]</sup>. Since the *Vata* is having *Ashraya ashrayi sambandha* with *Asthi dhatu*, when *Vata* gets *Prakopa*, there is *Asthi kshaya*<sup>[6]</sup>. Firstly, the *Avarana* has to be cleared, then *Chikitsa* has to be given to correct *Vata*. Since there is *Asthi kshaya*, *Tikta ksheera basti*<sup>[7]</sup> can be planned later.

### Case Report

#### Chief complaints

Pain in bilateral hip joint since 1 year 2 months

#### Associated complaints

Stiffness in bilateral hip

#### History of present illness

A male patient of age 35 years was apparently normal 1 year 2 months back. Gradually, he developed pain in right hip joint which was associated with stiffness. After few months, he developed pain in left hip joint also which gradually got radiated to bilateral thigh region. The pain is of pulling type. It aggravates during walking and standing for long time, lying on affected side and alleviates on taking medicine, rest. For further management, he visited the OPD of Panchakarma, Government Ayurveda Medical College, Bengaluru.

#### Past History

H/O-Covid -19 in the year of 2020, taken steroidal medicine for 15 days.

#### Medical history

N/K/C/O Hypertension, Diabetes Mellitus

#### Family history

Nothing specific

**Table 1: Subject's personal history**

Name: xyz	Bowel: Regular
Age: 35 years	Appetite: Good
Marital status: Unmarried	Habits: None

Occupation: Software engineer	Height: 183cm
Diet: Mixed	Weight: 85kg

**Table 2: Ashtasthana pareeksha**

Nadi	Prakruta, 70bpm
Mutra	Prakruta 3-4times/day 1-2 times/night
Mala	Prakruta 1 time/day
Jihwa	Alipta
Shabda	Prakruta
Sparsha	Prakruta
Drik	Prakruta
Akriti	Prakruta

**Table 3: Dashavidha pareeksha**

Prakriti: Vata pitta	Satmya: Madhura katu rasa
Vikriti: Pitta rakta	Ahara shakti: Madhyama
Sara: Madhyama	Vyayama shakti: Madhyama
Samhanana: Madhyama	Vaya: Madhyama (35 years)
Satva: Madhyama	Pramana: Ht- 183cm Wt- 85kg

#### Systemic examination

Central nervous system: Higher mental functions intact, no abnormality detected

Cardiovascular system: S1 S2 heard, no abnormality detected

Respiratory system: NVBS heard, no abnormality detected

Gastrointestinal system: P/A- soft, non-tender

#### Musculoskeletal system

Gait- Antalgic

Curvature of spine- Normal

**Table 4: Hip joint examination**

Inspection	Palpation	Range of movements
Discoloration- Absent	Tenderness- Present	Flexion- Possible with pain
Scar marks- Absent	Warmth- Absent	Extension- Possible with pain
Swelling- Absent	Crepitus- Absent	Adduction- Possible with pain
	Stiffness- Present	Abduction- Possible with pain
		External rotation- Possible with pain
		Internal rotation- Possible with pain

**Table 5: Specific signs elicited in the patients**

Sign	Right	Left
SLR	Positive	Positive

Bowstring	Negative	Negative
Bragard's	Negative	Negative
Trendelenburg sign	Positive	Positive
Heel walk	Possible with pain	Possible with pain
Toe walk	Possible with pain	Possible with pain
Walking time	>5min	3min
Pain scale	4	1
Stiffness	> During activity	Mild

**Table 6: Samprapti ghataka**

<i>Dosha</i>	<i>Vata kapha</i>	<i>Udbhavasthana</i>	<i>Pakvashaya</i>
<i>Dushya</i>	<i>Rakta, Asthi, Majja</i>	<i>Sancharasthana</i>	<i>Sakti</i>
<i>Agni</i>	<i>Jatharagni, Dhatvagni</i>	<i>Vyaktasthana</i>	<i>Sakti</i>
<i>Agnidushti</i>	<i>Mandagni</i>	<i>Adhistana</i>	<i>Sakti</i>
<i>Srotas</i>	<i>Raktavaha, Asthivaha, Majjavaha</i>	<i>Rogamarga</i>	<i>Madhyama</i>
<i>Srotodushti</i>	<i>Sanga</i>	<i>Sadhyasadhyata</i>	<i>Krichrasadhya</i>

**Table 7: Treatment protocol adopted**

Phase 1	1. <i>Sarvanga abhyanga</i> with <i>Balaguduchyadi taila</i> <sup>[8]</sup> followed by <i>Manjistadi kashaya</i> <sup>[9]</sup> seka- for 7 days 2. <i>Vankshana basti</i> with <i>Balaguduchyadi taila</i> - 7 days 3. <i>Manjistadi Kshara basti</i> followed by <i>Ksheera basti</i> - karma pattern
Phase 2	1. <i>Sarvanga abhyanga</i> with <i>balaguduchyadi taila</i> followed by <i>Manjistadi kashaya</i> seka- for 7 days 2. <i>Panchatikta Kashaya basti</i> followed by <i>Ksheera basti</i> - kala pattern
Phase 3	1. <i>Sarvanga abhyanga</i> with <i>Mahanarayana taila</i> followed by <i>Manjistadi kashaya</i> seka- for 5 days 2. <i>Panchatika ksheera basti</i> - kala pattern

**Table 8: Contents of Manjistadi kshara basti, Manjistadi ksheera basti, Panchatikta kashaya basti and Panchatikta ksheera basti**

<i>Manjistadi kshara</i>		<i>Manjistadi ksheera basti</i>		<i>Panchatikta kashaya</i>		<i>Panchatikta ksheera basti</i>	
<i>Makshika</i>	60ml	<i>Makshika</i>	60ml	<i>Makshika</i>	40ml	<i>Makshika</i>	40ml
<i>Saindhava</i>	10gms	<i>Saindhava</i>	10gms	<i>Saindhava</i>	10gms	<i>Saindhava</i>	10gms
<i>Guggulutiktaka ghrita</i>	60ml	<i>Guggulutiktaka ghrita</i>	60ml	<i>Panchatikta ghrita</i>	70ml	<i>Panchatikta ghrita</i>	70ml
<i>Kalka-Shatapushpa+ Manjista+ Pravala panchamrita rasa (1 tab)</i>	20gms	<i>Kalka-Shatapushpa+ Manjista+ Pravala panchamrita rasa (1 tab)</i>	20gms	<i>Kalka-Manjista+ Yastimadhu+ Ashwagandha</i>	20gms	<i>Kalka-Manjista+ Yastimadhu+ Ashwagandha</i>	20gms
<i>Manjistadi Kashaya</i>	300ml	<i>Manjistadi ksheera</i>	300ml	<i>Panchatikta Kashaya</i>	300ml	<i>Panchatikta ksheera</i>	300ml
<i>Gomutra</i>	50ml						

**Table 9: Assessment criteria (Merle d' Aubigne hip score)**

Score	Pain	Mobility	Ability to walk
0	Pain is intense and permanent	Ankylosis in abnormal position	Impossible
1	Pain is severe, disturbing the sleep	Ankylosis in normal position or in a very slight abnormal position	Only with crutches
2	Pain is severe when walking, prevents any activity	Flexion < 40° (Abduction=0°) or very slight joint deformity	Only with 2 canes
3	Pain is severe but maybe tolerated with limited activity	Flexion 40°-60°	Limited with one cane (less than one hour), very difficult without a cane
4	Pain only after walking and disappearing with rest	Flexion > 60°-80° (can tie shoelaces)	Prolonged with one cane, limited without a cane (limp)
5	Very little pain and intermittent, does not preclude normal activity	Flexion > 80°-90°, limited abduction (>25°)	Without a cane but slight limp
6	No pain at all	Normal, flexion > 90°, Abduction > 25°	Normal

**Table 10: Results (Merle d' Aubigne hip score)**

	Phase 1		Phase 2		Phase 3	
	BT	AT	BT	AT	BT	AT
Pain	1	3	2	4	3	5
Mobility	1	4	2	4	3	5
Ability to walk	3	5	4	6	5	6
Total	5	12	8	14	11	16

## DISCUSSION

### **Sarvanga Abyanga with Balaguduchadi taila followed by Manjistadi Kashaya seka**

*Pariseka* is a therapeutic procedure where the *Dravadravya* is made hot and poured over the affected area in a continuous stream. According to *Vridhdha Vagbhata*, *Seka*, *Sweda*, *Langhana*, *Pachana*, *Lepa* are the line of treatment in *Samavata avastha*<sup>[10]</sup>. By doing *Seka*, there will be increased blood circulation locally, thereby reducing the stiffness and increasing the mobility. Ingredients of *Manjistadi Kashaya* includes *Manjishta*, *Triphala*, *Tikta*, *Vacha*, *Devadaru*, *Nisha*, *Amrita*, *Nimba* which are *Tikta rasa* dominant, *Pitta hara* (*Rakta shamana* as *Pitta* and *Rakta* are having *Ashraya ashrayi sambandha*) and does *Rakta shamana*.

### **Vankshana basti**

It is a localized external *Basti* applied specifically over the *Vankshana pradesha*. The warm medicated oil used provides *Snehana* and mild *Swedana* which improves local blood circulation and softens the tissues. By the *Ushna* and *Snigdha guna*, it reduces the *Vata* in the *Vankshana marma sthana*, thereby helps in relieving the pain and stiffness locally. It is a *Lakshanika chikitsa*.

### **Basti**

*Basti* is considered as a prime line of management for *Vata*, *Pitta*, *Kapha* and *Rakta dosha* according to Acharya Sushruta<sup>[11]</sup>. It is planned as a *Samprapti vighatana chikitsa*.

### **Manjistadi kshara basti followed by Ksheera basti**

*Manjistadi Kashaya* includes drugs which are *Raktaprasadaka*, *Pittahara*, and therefore used for *Basti*. *Gomutra arka* diluted with *Ushnajala* is added as *Avapa dravya* which has *Ushna*, *Teekshna* property and works as *Kshara*. Firstly, to remove *Avarana* to *Rakta marga*, *Ksharabasti* is given. Once the *Avarana* to *Rakta* is removed, there will be proper *Poshana* at the site post *Avarana*. Later, for the purpose of *Asthi dhatu poshana ksheera basti* following *Kshara basti* was given. Milk contains calcium, protein and fat which are vital for bones and also, there is direct reference of *Ksheera basti* in *Vatarakta* according to Acharya Charaka<sup>[12]</sup>.

### **Panchatiktaka ksheera basti**

According to Acharya Charaka, *Tikta ksheerabasti* is the line of treatment told in *Asthidhatu kshaya*<sup>[7]</sup>. The drugs in *Panchatiktaka* includes *Guduchi*, *Nimba*, *Vasa*, *Patola* and *Nidigdhika* which are having anti-inflammatory, analgesic, immunomodulatory and antioxidant property. Bitter taste receptors are also



found in bone cells. Some studies suggest that activating these receptors may influence bone remodeling. Bitter herbs and compounds influence hormones involved in bone metabolism.

## CONCLUSION

*Panchakarma*, the cornerstone of Ayurvedic detoxification and rejuvenation therapy, offers a promising and complementary approach in the management of Avascular necrosis. Through its multifaceted procedures- *Abhyanga*, *Swedana* and *Basti*, *Panchakarma* aims to restore the balance of *dosha*, improve circulation, reduce inflammation and enhance tissue regeneration. While modern medical treatments often focus on surgical interventions and symptomatic relief, *Panchakarma* addresses the root cause, potentially delaying disease progression and improving quality of life. Further studies with long term follow ups are essential to validate the therapeutic role of Panchakarma in AVN management.

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