



Management of Osteonecrosis of the Femoral Head Using Ayurvedic Treatment: A Case Report

Pankaj Yadav¹, Vaishali Kuchewar¹, Mayuri Amol Deshpande² and Parveen Nandal¹

¹Department of Kayachikitsa, Mahatma Gandhi Ayurveda College, Hospital and Research Centre, Salod, Wardha - 442001, Maharashtra, India; py84442@gmail.com

²Department of Kayachikitsa, Mahatma Gandhi Ayurved college and research centre, Datta Meghe Institute of Higher Education and Research (Deemed to be University), Salod, Wardha - 442001, Maharashtra, India

Abstract

Background: Osteonecrosis, popularly also called as Avascular necrosis is defined as insufficiency in arterial feeding of the head of the femur which creates a complex of symptoms, characterized by pain, impaired function, and structural breakdown, resulting in considerable deterioration, even necrosis of bone. Osteonecrosis can occur by a number of reasons. They can be traumatic (after femoral neck fractures or hip joint dislocations), idiopathic, corticosteroid-induced, alcohol-induced, and infection-related. In *Ayurveda* classics, this disease can be precisely correlated with *Asthimajjagat Vata*, which basically occurs due to the deficiency of *Asthi* and *Majja dhatu*s. **Case Report:** This is a case report of a 52-years-old female patient who visited to the OPD, with pain in lumbar region that radiated to both lower limbs, pain in both hip joints and she couldn't walk a short distance and sit without the support of hand. She had a history of fall 2 years back after which the complaints started. **Results and Observations:** The patient got significant relief in his range of movement, abduction, adduction, flexion, extension, internal rotation and external rotation are improved after the treatment. **Discussion:** Combination of *ksheera* and *tikta rasa dravya* can produce *snigdha* and *soshana* property at the same time. All this contributes to the *samprapti vighatana* of this condition. **Conclusion:** The main aim of this study is to encourage the classical *Ayurvedic* remedies in the management of Osteonecrosis. This case study demonstrates the management of Osteonecrosis through classical *Ayurvedic* treatment.

Keywords: *Asthi*, *Asthimajjagat Vata*, Avascular necrosis, *Majja*, Osteonecrosis

1. Introduction

Osteonecrosis is an illness that results from decreased blood circulation to the bone, either partial or full. Blood transports the oxygen and essential nutrients to the bones. When there is disruption in the blood supply, the tissues of bone (osteo) starts to disintegrate (i.e., necrosis). Osteonecrosis is known more commonly by avascular necrosis, ischemic bone necrosis and "aseptic necrosis"¹. Avascular necrosis is a set of symptoms highlighted by discomfort, impairment, and skeletal disintegration induced by reduced oxygen supply or other insufficiency in arterial feeding of the head of the femur that lasts long enough to induce significant bone degradation, even necrosis. Osteonecrosis can occur by a number of reasons. They can be traumatic (after femoral

neck fractures or hip joint dislocations), idiopathic, corticosteroid-induced, alcohol-induced, infection-related, Gaucher's disease, and linked diseases². In *Ayurveda* classics, this disease can be correlated with *Asthimajjagata Vata* where dysfunctioning of *Vata Dosha* in *Asthi* and *Majja Dhatu* leads to symptoms *Asthi Bheda* (pain) and *Aswapna Satat Ruka* (severe pain at night) and *Manas Kshaya. Basti* is the best procedure for balancing *Vata Dosha*. So *Panchatikta Ksheer Basti* is the line of treatment of *Asthimajjagata Vata* in this case³.

2. Case Report

A 52-years-old female patient visited to the OPD, with pain in lumbar region that radiated to both lower limbs. She had a history of fall 2 years back after which the

*Author for correspondence

complaints started. She couldn't walk a short distance, sit without the support of hand, or even lie down on either side. In the supine posture, she felt ease. She felt pain in both hip joints when her medical history was taken. MRI of both hips with pelvis showed Stage 3 bilateral avascular necrosis. On further assessment, clinically the disease was diagnosed as avascular necrosis, which according to *Ayurveda* texts can be considered as "*Asthimajjagat Vata*". This disease can be differentially diagnosed with inflammatory *synovitis*, complex regional pain syndrome, Osteomyelitis and Neoplastic bone conditions.

3. Materials and Methods

Diagnostic parameters: Range of motion of hip joint and the time taken for flexion of hip joint, distance

between both legs after complete extension of hip joint and walking time were assessed during the treatment schedule. There was a considerable reduction in active and passive range of motion. The patient's muscular mass and tone were normal. All other systemic examination was within normal limits.

4. Treatment Protocol

The management was based on three rejuvenating components: *Rasa* (nutrition), *Agni* (digestion and metabolism), and *Strotas* (microchannels). The complete treatment protocol is mentioned in the Table 1. The *panchkarma* procedures done during IPD and the treatment medicine in discharge are shown in Tables 2 and 3.

Table 1. Shows treatment protocol During IPD

S. No.	Medicine	Dose	Frequency	Anupan	Duration
1	Shiv Gutika	500mg	Twice a day after meal	Warm water	15 Days
2	Kaishor Guggulu	500mg	Thrice a day after meal	Warm water	15 Days
3	Tab. Shallaki Forte	500mg	Twice a day after meal	Warm water	15 Days
4	Asthiposhak Vati	500 mg	Twice a day after meal	Warm water	15 Days

Table 2. Shows panchkarma procedures done durin IPD

Treatment Procedures	Ingredients	Site	Duration
<i>Mrudu Snehan</i> (light massage)	<i>Dashmool Tail</i>	Whole Body	15 Days
<i>Swedan</i> (fomentation) with <i>Shashti Shali Pinda Sweda</i>	Milk and red rice	Lumbar, hip region and thigh	15 Days
<i>Matra Basti</i> (Medicated enema)	PanchtiktaGhrit (40ml)+ksheer (40) ml = 80ml	Anal region	15 Days
Nirgundi Patra pottli <i>swedan</i>	<i>Nirgundi Patra + Dashmool Tail</i>	Lumbar, hip region and thigh at Night	15 Days

Table 3. Shows treatment medicine on discharge

S. No.	Medicine	Dose	Frequency	Anupan	Duration
1	Shiv Gutika	500mg	Twice a day after meal	Warm water	1 month
2	Panchtikta Ghrita Guggulu	500mg	Twice a day after meal	Warm water	1 month
3	Tab. Shallaki Forte	500mg	Twice a day after meal	Warm water	7 Days
4	Asthiposhak Vati	500 mg	Twice a day after meal	Warm water	1 month
5	Sarivadyasava	20 ml	Twice a day after meal	Warm water	15 Days

5. Outcome

Range of movements assessed subjectively. On admission, the patient was having difficulty in walking. But on the day of discharge, she was able to walk for some time comfortably. Earlier, the patient cannot sit for longer duration. But on discharge, she was able to sit even without support. On admission, the patient was not able to stand for a long time, while after treatment, the patient was able to stand without support for a long time. On the day of admission, the patient cannot sit on chair comfortably, whereas on discharge, the pain was reduced and she was able to sit on chair comfortably.

Distance between both legs was assessed using the measuring tape by asking the patient to abduct the hip joint to the maximum on both the sides on 1st day and on the day of discharge

The time taken for flexion of hip joint was assessed by a stopwatch for both the legs separately on 1st day and the day of discharge (Table 4 and Figure 1)

The range of movement of hip joint of the patient was assessed at the time of admission and at the time of discharge (Tables 5 and 6).

Table 4. Shows abduction measurement of hip joint

On admission		
Right side	Left side	Both sides together
46 cm	47 cm	54 cm
On discharge		
Right side	Left side	Both sides together
59 cm	61 cm	67 cm

Table 5. Shows flexion time of hip joint

On admission	
Right leg	Left leg
1.7 seconds	3.3 seconds
On discharge	
Right leg	Left leg
Less than 1 second	Less than 1 second



Figure 1. Measurement from right to left greater toe distance.

Table 6. Shows range of movement of hip joint

S. No.	Range of Movements of Hip Joint	Side of Joint	On admission	On Discharge
1	Abduction	Right leg Left leg	10 ⁰ 20 ⁰	20 ⁰ 25 ⁰
2	Adduction	Right leg Left leg	10 ⁰ 15 ⁰	25 ⁰ 30 ⁰
3	Flexion	Right leg Left leg	100 ⁰ 105 ⁰	110 ⁰ 115 ⁰
4	Extension	Right leg Left leg	15 ⁰ 10 ⁰	25 ⁰ 20 ⁰
5	Internal rotation	Right leg Left leg	15 ⁰ 15 ⁰	20 ⁰ 25 ⁰
6	External rotation	Right leg Left leg	10 ⁰ 20 ⁰	20 ⁰ 25 ⁰

This assessment shows that the patient got significant relief in his range of movement through this treatment.

6. Discussion

Osteonecrosis, also known as bone infarction, is the loss of bone tissue caused by a blood supply disruption. Because the blood supply to the femoral head is disrupted so quickly, avascular necrosis might develop. *Twak* and *Mansa* involvement (superficial trauma) and chronicity of condition are shown in the history of traumatic jerk in the hip region (grade III) down the deep tissues (*Rakta, Mansa, Meda, Asthi*)⁴.

The pathogenesis in *Ayurveda* can be expressed as the use of corticosteroids causes the production of *aama* and *srotorodha*. As a result, the femoral head's *Rakta dhatu* (blood tissue) circulation is reduced, which there by causes the nutrient supply to that area of the body to be reduced, and its volume decreases, resulting in *asthi dhatu kshaya*. Because of its unctuous character, *abhyanga* performed before *Patra pottalis wedana* is likely to cure *Vata dosha* imbalance. Furthermore, the sudation method aids in the correction of the morbid *Kapha dosha*⁵. When the patient with pain in the right hip joint presented, it was evident that *Vata Dosha* is associated with *Asthivaha Strotas*. Hence the *Basti Karma* planned in the schedule of *Tikta Ksheer Basti* with internal administration. The decoction made in *Ksheerpaka*

which has *Madhur* and *Snigdha* properties helps to control *Vata Dosha* and due to *Sukshma Guna* of *Saindhava*, it reaches up to the microchannel of the body and helps to open fresh blood supply to the bone tissue. In this *Basti Tikta Dravya* having *Tikta Rasa, Ushna Virya, Madhur* and *Katu Vipak* favours the normal functioning of *Dhatwagni* (metabolic stage). Facilitating increased nutrition to the *Asthi Dhatu*⁶. *Vata* and *Kapha* two are the root causes of *Ashimajjagata Vata*.

7. Mode of Action of *Shashtik-Shali Pinda Sweda*

Shashtik-Shali Pinda Sweda is a combination between *Brimhana, Vatahara, and Balya Sweda*. It nurtures and strengthens muscle tissues with substances like *Godugdha* and *Shashtikashali*, and it stimulates nervous tissues with *Balamoola*. *Shashtikashali Pinda Sweda* increases tissue strength, which enhances movement and flexibility⁷.

Patra Pinda Sweda is represented as *Sandhi chestakara, Sroto suddhikara, and Kapha Vata nirodhana*⁸.

Panchatikta ghrita was given as effective remedy because of the severity of the sickness and the *Vata* dominance. *Panchatikta ghrita* is used to treat all kinds of *Vata* disorders. In *Vatarakta*, where vascular constriction is the major etiology, *Kaishore Guggulu* is the medicine of choice⁹. It is combined

with *Sarivadyasava*, which is good for *raktaprasadana* (enhancing circulation) and bone tissue regeneration. Tablet *Asthiposhak* was given to provide strength to the bones.

*Shiv Gutika*¹⁰ contains *brimhana* drugs like *Shatavari*, *Vidari*, *Riddhi*, *Risabhaka*, *Ksiravidari*, *Meda*, *Mahameda*, *Godugdha*, *Jeevanthi*, *Jivaka* and *Ghrita Shilajatu (Asphaltum Punjabianum)* as its main content. It increases the uptake of minerals like calcium, magnesium, and phosphate into the tissues of the bones and muscles. It reduces the risk of bone fragility and fracture. Humic acid, which greatly reduces blood lipids, is a key component. When the body's fat content is minimal, there are no fat deposits in the blood arteries, which prevents heart vessel obstruction.

8. Conclusion

Within one month of treatment, the patient was able to walk without assistance, and her range of motion had returned to normal and the patient felt significant relief in her condition. According to this study, classical *Ayurvedic shodhan* and *shaman* remedies could be a good option in the early stages of avascular necrosis. This case study demonstrates how to avoid additional bone degradation in femoral head avascular necrosis. The real nature of the tissue is unknown without a biopsy.

9. Informed Consent

A written informed consent was taken from the patient before starting the treatment.

10. References

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