

INTEGRATED AYURVEDIC MANAGEMENT OF AVASCULAR NECROSIS OF THE FEMORAL HEAD (ASTHIMAJJAGATA VATA): A CASE REPORT

Ayushi Chandil^{1*}, Vivek Sharma², Rajesh Meshram³

*¹PG Scholar, Department of Kayachikitsa, Pt. Khushilal Sharma Govt. Ayurvedic College, Bhopal (M.P) India.

²Associate Professor, Department of Kayachikitsa, Pt. Khushilal Sharma Govt. Ayurvedic College, Bhopal (M.P) India.

³Professor, Department of Kayachikitsa, Pt. Khushilal Sharma Govt. Ayurvedic College, Bhopal (M.P) India.

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*Corresponding Author

Ayushi Chandil

PG Scholar, Department of
Kayachikitsa, Pt. Khushilal Sharma
Govt. Ayurvedic College, Bhopal
(M.P) India.



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ABSTARCT

Avascular necrosis (AVN), also known as osteonecrosis, is a progressive degenerative disorder caused by interruption of blood supply to bone tissue, leading to cellular death, structural collapse, and functional disability. The femoral head is the most commonly affected site. Contemporary management strategies primarily include conservative symptomatic treatment in early stages and surgical interventions such as core decompression or total hip replacement in advanced stages. However, long-term outcomes are variable, and surgical procedures carry considerable morbidity, particularly in younger individuals. In Ayurveda, AVN can be correlated with Asthimajjagata Vata, a condition characterized by vitiation of Vata dosha affecting Asthi and Majja dhatu. **Materials and Methods:** A 35-year-old male patient presented with bilateral hip pain radiating to the lower limbs, stiffness, and difficulty in

walking. MRI revealed bilateral avascular necrosis of the femoral head (Stage II on the right side and Stage III on the left side). The patient was treated with Patrapinda Swedana, Sthanik Basti, and Dashmoolasiddha Majja Basti for 21 days along with oral Kaishora Guggulu (500

mg twice daily) and Dashamoola Kwatha (40 ml twice daily). Clinical parameters including pain, stiffness, range of motion, and gait were assessed before and after treatment. **Results:** The patient showed moderate to significant improvement in pain intensity, reduction in stiffness, improvement in gait pattern, and enhanced functional capacity. No adverse effects were observed during the treatment period. **Conclusion:** This case suggests that a combined Panchakarma and Shamana therapy approach may provide symptomatic relief and functional improvement in early to mid-stage avascular necrosis of the femoral head. Further controlled clinical studies are required to validate these findings.

KEYWORDS: Avascular necrosis, Osteonecrosis, Asthimajjagata Vata, Majja Basti, Dashamoola, Ayurveda.

INTRODUCTION- INTRODUCTION

Avascular necrosis (AVN), also termed osteonecrosis, is a pathological condition characterized by death of bone tissue due to compromised blood supply. The condition primarily affects the epiphysis of long bones, particularly in weight-bearing joints.^[1] The most common anatomical site is the femoral head, followed by knee, talus, and humeral head.

Pathophysiologically, AVN involves ischemia, increased intraosseous pressure, microvascular compromise, and eventual collapse of subchondral bone. Risk factors include corticosteroid use, alcohol abuse, trauma, sickle cell disease, autoimmune disorders, and idiopathic causes. The disease progression is commonly staged using the Ficat and Arlet classification system.^[2]

Early stages may remain asymptomatic; however, as the disease progresses, patients develop Deep-seated joint pain, Restricted range of motion, Limping gait, Functional disability.

In Ayurveda, AVN can be correlated with *Asthimajjagata Vata*.

Asthimajjagata Vata occurs due to vitiation of Vata dosha localized in Asthi and Majja dhatu. Classical features include: Asthi shoola (bone pain), Sandhi shoola (joint pain), Asthi saushirya (bone weakness), Gati sanga (restricted movement).^[3]

Since Vata is the predominant dosha in degenerative disorders, Basti therapy is considered the prime treatment modality (*Ardha Chikitsa* of Vata). Majja Basti is particularly indicated when Asthi and Majja dhatu are involved, due to its nourishing and Vata-pacifying properties.

Thus, the present case explores the effect of Dashmoolasiddha Majja Basti combined with Shamana therapy in AVN.^[3]

CASE REPORT

A 35-year-old male patient presented to Kayachikitsa OPD with: Bilateral hip joint pain (12 months duration), Radiation to bilateral lower limbs, Difficulty in walking and squatting, Limping gait.

Past History: No history of trauma. No significant past medical illness reported. The patient claimed to be apparently healthy before one year, then he developed the pain in left hip joint gradually. The pain was constant throughout the day and aggravated during the night hours. The patient was diagnosed with AVN of bilateral femoral head with aid of MRI by an orthopaedic surgeon and had recommended surgical intervention but the patient was reluctant.

Personal history – Addiction-no, Occupation- farmer, Appetite- Normal, Sleep- Disturbed, Bowel-clear, Micturition-Normal.

General examination

Pallor, Icterus, cyanosis, clubbing and oedema absent. BP- 130/80 mmHg, pulse-85/min, Temp- 98F, RR- 18/min.

Examination of Patient: The general and specific examination of the patient was conducted as per modern and Ayurveda and the details are highlighted in table 1,

1	Prakrati	Vatapradhan pitta
2	Sara	Madhyam
3	Samhanan	Madhyam
4	Praman	Wt. 84 kg
5	Stayma	Madhyam
6	Satva	Madhyam
7	Aharshakti	Madhyam
8	Vyamshakti	Madhyam
9	Vaya	Yuvaavstha
10	Desha	Sadharana

Investigations

MRI of lumbosacral spine with hip screening revealed: Bilateral AVN of femoral head

- Stage II (Right side)

- Stage III (Left side)

Diagnostic assessment and differential diagnosis

The patient was a known case of AVN. The diagnosis was made on the basis of an MRI report which showed AVN grade III in the left hip and II in the right hip joint. History of occasional consumption of alcohol was the risk factor.^[4] The case was diagnosed as Asthi-majjagatavata according to Ayurveda. In this case, Asthi and Majja were mainly affected and the symptoms of Asthi-majjagatavata were also prominent in this case. The clinical features of Asthi-majjagatavata are Bhedoasthi parvaṇam (breaking type of pain/intense pain in bones), Sandhishoola (joint pain), Satataruk (continuous nature), Mamsabalaksaya (muscles weakness and loss of strength) and Asvapna (disturbed sleep). Vatarakta and Sandhigatavata were the differential diagnoses of the case. But absence of the vitiation of Rakta (blood tissue) and the absence of Vata-purna-driti-sparshaha (air-filled bag-like feeling) symptoms in this case rule out these diagnoses.

Treatment protocol

The line of management of Vatavyadhi was adopted. Snehana (internal and external oleation), Swedana (sudation), Basti (medicated enema therapy), Nasya (nasal therapy), Abhyanga (massage), Utsadana (specific massage with medicated paste), Parisheka (sprinkling of medicated liquid), etc. are the line of management for any Vatavyadhi.^[5]

Treatment Regimen

Treatment	Dosage form	Dose	Duration	Anupan
Patrapinda Swedana	-	-	21 days	-
Vankshan Basti	-	-	21 days	-
Dashmoolasiddha majja basti	As enema	350ml after light breakfast	21 days	-
Kaishora Guggulu	orally	500 mg	2 months	Luke warm water
Dashamoola Kwatha	orally	40 ml	2 months	Luke warm water

OBSERVATIONS

Ranges of joint motion in bilateral hip joint for the case of Avascular necrosis-

No.	Hip joint involvement	Before treatment		After treatment	
		Rt.	Lt.	Rt.	Lt.
1.	Flexion of hip joint	110	90	125	110
2.	Extension of hip joint	20	10	30	20
3.	Adduction of hip joint	20	15	30	25
4.	Abduction of hip joint	30	20	40	30

5.	Internal rotation	20	10	30	15
6.	external rotation	15	10	20	20

Assessment of clinical features before and after treatment (Gradation System)

Clinical Features	Before Treatment	After Treatment
Pain	3	1
Stiffness	2	1
Restricted Range of Movement	3	2
Gait	2	1

RESULT

After completion of 21 days of Dashmoolasiddha Majja Basti and administration of oral medicines patient get significant relief in pain, stiffness, Gait and range of motion. The study's most important finding was that it aids in symptom relief. As a result, the patients can get back to their regular activities while receiving treatment. Thus, this study produced encouraging results and can be suggested as a treatment method for femoral head AVN.

DISCUSSION

Avascular necrosis (AVN) of the femoral head is primarily characterized by disruption or reduction of blood supply leading to ischemia, osteocyte death, subchondral bone weakening, and eventual structural collapse.^[6] The etiopathogenesis involves intravascular occlusion (thrombi, fat embolism), extravascular compression, direct cellular toxicity (e.g., alcohol), and altered bone remodeling mechanisms. In the present case, the patient had **non-traumatic bilateral AVN** with a history of occasional alcohol intake which may have contributed to metabolic dysregulation and microvascular compromise.

Correlation with Ayurvedic Pathogenesis

From an Ayurvedic perspective, AVN can be correlated with *Asthimajjagata Vata*, a subtype of *Vatavyadhi*. The pathogenesis in this case can be understood through:

- **Dhatu Kshaya (tissue depletion)** – Degeneration of Asthi and Majja dhatu due to chronic metabolic impairment.
- **Margavarana (obstruction of channels)** – Obstruction of microchannels (Srotas) by aggravated Meda dhatu (adipose tissue), leading to impaired nourishment of deeper tissues.
- **Rakta Dushti** – Vascular compromise resembles vitiation of Rakta dhatu, comparable to conditions like *Grathita Raktapitta* (coagulative disorders).

- **Abhighata (microtrauma)** – Continuous weight-bearing stress on hip joints in obesity may act as repetitive microtrauma, aggravating Vata.

Obesity (Sthulyata) plays a significant role in producing Meda vriddhi, which obstructs Asthivaha and Majjavaha srotas. This obstruction hampers proper nutrient supply to the femoral head, thereby resulting in degenerative changes consistent with AVN.

Alcohol consumption is known to cause fatty infiltration and microvascular compromise, which parallels the Ayurvedic concept of Rakta and Meda dushti contributing to Margavarana.

Thus, the combined effect of **Vata aggravation + Dhatu Kshaya + Margavarana** may explain the development of bilateral AVN in this patient.

Rationale of Treatment Protocol

Since Vata is the predominant dosha in degenerative bone disorders, Basti therapy is considered the principal line of management. In this case, **Dashmoolasiddha Majja Basti** was selected considering the involvement of Asthi and Majja dhatu.

1. Dashmoolasiddha Majja Basti

In advanced stages of AVN because to a persistent imbalance in the Vata Dosha, which also causes Pitta and Kapha Dosha to become vitiated. In this case, basti is the recommended course of treatment for AVN. As Dosha Pratyantik Chikitsa, basti is the primary line of treatment for Vata Dosha in all Panchakarma treatments. It has been explained as Ardchikitsa and Poorna Chikitsa by Acharya Charaka. Basti is also the treatment explained for vitiation of Vata as well as Pitta Dosha, Kapha Dosha, Rakta Dhatu and combination of these. Dashmoolasiddha majja Basti- Majja Sneha basti strengthens and nourishes the asthi dhatu (bone tissue), which is crucial for asthi pradoshajanya vikar. Asthi Sandhi is main site of Vata where Shleshmaka Kaph is located. Dashmoola siddha majja basti have Madhur, tikt ras and Katu vipak, which are opposite to the ruksha sheeta and khara guna of vata Dashmool siddha majja basti, which involves processing majja with Dashmool kwath, has been described by Acharya Charak. The ingredients of this basti are Ushna Virya, Katu Vipak, Tikt Ras, and Madhur. Because of the qualities of snigdha, pichchila, guru, and brimhana-poshana guna, it feeds majjadhatu, which feeds asthidhatu. Upon feeding both dhatus, vatashamana takes place. Thus, we may infer from the rasa and vipaka that this basti raises the Majja dhatu

in asthi and majja vaha srotasa by reaching up the asthi. By filling the vata in the Asthi dhatu, this majja uses its puran guna to nourish Asthi. The vatjanya shoola is healed by Ushna Veerya, suggesting that the entire Basti Dravya is vatashamaka. As a result, Dashmoola Siddha Majja Vasti's action is essential to Asthi Majjagata Vata. The primary goal of the dashmoola siddha majja basti is to improve the blood supply and eliminate the Dosha.

2. Patrapinda Swedana and Sthanik Basti

Patrapinda Swedana provides:

- Snehana (oleation)
- Mridu Swedana (mild sudation)
- Relief from stiffness
- Improved local blood circulation

Sthanik Basti over the hip joint ensures:

- Prolonged retention of medicated oil
- Local Vata pacification
- Improved joint mobility
- Reduction of pain and tenderness

These procedures likely enhanced tissue pliability and reduced muscular guarding, thereby improving gait and range of motion.

3. Kaishora Guggulu

- Detoxifying (Ama-pachana) effect
- Potential antioxidant activity

It is indicated in chronic inflammatory and degenerative conditions. Its long-term use is described in classical texts for reversing degenerative processes (*Jara hara* action).^[7] In AVN, where degeneration predominates, this formulation may support structural preservation.

4. Dashamoola Kwatha

Dashamoola Kwatha is known for:

- Potent Vata-shamana action
- Analgesic effect

- Anti-inflammatory activity

It likely contributed to symptomatic relief in this patient, particularly reduction in pain severity (VAS score reduction from 8 to 4).

Mechanistic Interpretation (Integrative View)

The improvement observed in this case may be attributed to:

1. Reduction in Vata aggravation – Leading to decreased pain and stiffness.
2. Improvement in microcirculation – Supporting nourishment of ischemic bone tissue.
3. Brimhana effect – Counteracting Dhatu Kshaya.
4. Reduction in Meda-induced obstruction – Facilitating better nutrient supply.
5. Anti-inflammatory and antioxidant activity – Limiting further cellular damage.

Although structural reversal cannot be conclusively established without follow-up imaging, functional improvement suggests stabilization of disease progression during the treatment period.

Clinical Outcome Analysis

After 21 days of therapy:

- Pain reduced significantly (VAS 8 → 4).
- Stiffness decreased.
- Gait improved from limping to near-normal.
- Functional activities improved.
- No adverse effects observed.

Given that Stage III AVN often progresses toward subchondral collapse requiring surgical intervention, symptomatic improvement through conservative Ayurvedic management is clinically meaningful.^[8,9,10]

CONCLUSION

The present case suggests that the management of *Asthimajjagata Vata* through Dashmoolasiddha Majja Basti combined with Shamana Chikitsa may help in alleviating symptoms and improving functional status in early to mid-stage AVN of the femoral head. By addressing Vata vitiation, Dhatu Kshaya, and Margavarana, this integrative Ayurvedic approach may contribute to stabilization of disease progression.

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