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Case Report

Ayurveda Section

Ayurvedic Management of Avascular Necrosis Through *Panchakarma* and Oral Medication: A Case Report

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ABSTRACT

Osteonecrosis is a degenerative bone condition characterised by the death of cellular components of the bone secondary to an interruption of the subchondral blood supply, also, known as Avascular Necrosis (AVN), it typically affects the epiphysis of long bones at weight-bearing joints. According to Ayurveda, AVN can be correlated with *Asthimajjagata Vata.* A 22-year-old female patient came to the Outpatient Department (OPD) with complaints of pain in bilateral hip joint, restricted and painful movement of the lower limbs and difficulty in walking. Her Magnetic Resonance Imaging (MRI) reports suggested AVN of Bilateral femoral head and neck, Grade 2 on right and Grade 3 on left (Ficat and Arlet classification) along with marrow oedema. The condition was addressed with a combination of various traditional ayurvedic medicines like *Aarogyavardhini Vati, Maharasnadi Kwath, Punarnavadi Guggulu, Yograj Guggulu, Rasapachak Vati* and *Panchakarma* like *Sthanik Snehan* (local oleation), *Patra Pottali Swedana (*fomentation*)*, and *Basti* (medicated enema). *Panchakarma* was done for a period of 16 days and oral medication was continued for a period of three months. Significant relief in pain as per Visual Analogue Scale (VAS) reduced stiffness and increased range of motion was noted along with improvement in Harris Hip Score and Quality of Life (QoL) score. The current case underscores the effectiveness of Ayurvedic *Panchakarma* treatment in achieving positive outcomes for AVN.

Keywords: *Asthimajjagatavata*, Ayurveda, *Basti*, Harris hip score, Quality of life

CASE REPORT

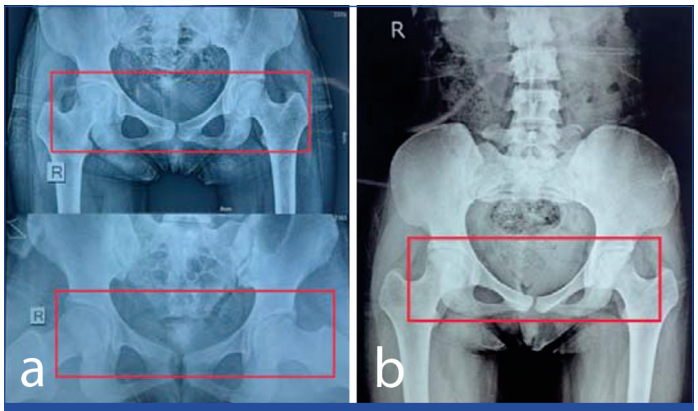
A 22- year-old female patient approached in *Panchakarma* OPD with complaints of pain in bilateral hip joint, restricted and painful movement of the lower limbs, stiffness in the lower limbs and difficulty in walking for the past three months. The patient had a history of fall a month ago after which the symptoms worsened overtime. The patient has no other medical history like Lupus erythematosus, sickle cell anaemia of any other haemoglobinopathies that makes her vulnerable to AVN [1]. The patient initially opted for allopathic treatment where she was given painkillers (Aceclofenac (1-0-1)) and calcium supplements and further investigations mainly X-ray and MRI of bilateral hip joint was suggested.

Eight folds of examination: The patient's vital sign showed overall stability in physiological parameters. In accordance with Ayurvedic examination the patient's pulse was *Vata* and *Pitta* humour predominant with a rate of 78 beats per minute. Bowel movements were regular, occurring once daily and urine frequency was normal at 3-4 times per day. The tongue was coated, indicating possible hampered digestion, speech was clear. Touch sensation, vision was normal. Appearance and built was emaciated and poor, and pallor was noted.

On physical examination, muscle atrophy was noted over bilateral upper lower limbs specifically over the thighs and gluteal region. Range of motion of hip joint i.e., adduction, abduction, flexion, extension, internal and external rotation of the hip joint was restricted. Faber's test was positive on both sides [2]. The grading on VAS pain scale was 8 [3]. Harris Hip score was 21 and score of QoL scale was 34 before treatment [4,5].

Timeline: The patient was diagnosed three months ago as a case of AVN of bilateral hip joints through MRI report and was recommended surgery for the same. But to avoid surgery patient opted for Ayurvedic treatment.

Diagnostic assessment: On investigations, X-ray and MRI of bilateral hip joints suggested AVN of Bilateral femoral head and neck-Grade 2 on right and Grade 3 on left (Ficat and Arlet classification) along with marrow Oedema as seen in [Table/Fig-1].



[Table/Fig-1]: a) MRI and b) X-ray of patient.

Therapeutic Intervention

The *Panchakarma* treatment was done in two phases each phase lasting for a period of eight days. Phase 1 of the treatment consisted of local oleation (*Snehan*) with *Dashmool* oil, followed by leaf bolus fomentation (*Patra Pinda Swedan*) using *Moringa oleifera (Shigru), Ricinus communis (Eranda), Vitex negundo (Nirgundi), Calotropis gigantea (Arka)* coconut, and lemon. This is followed by eight days of medicated enema treatment *(Yog Basti)* alternating with medicated decoction-based enema (*Erandamooladi Niruha Basti*) 800mL and medicated oil-based enema (*Anuvasana Basti*) with *Sahachar Taila* 60mL [6-9].

Phase 2 starts with local oleation with *Dashmool* oil followed by rice bolus fomentation (*Shastik Shali Pinda Swedan*) and enema using milk processed with five bitter herbs (*Panchatikta Ksheera Basti*) 120 mL for eight days [10,11]. Alongside *Panchakarma* treatment internal medication were given for a period of three month with regular follow-up as mentioned in [Table/Fig-2].

Follow-up and Outcome

After adhering to *Panchakarma* treatment for period of 16 days and continuous internal medication for three months, significant

S. No.	Medicine	Dose	Frequency	Time of administration	Anupana (post medicinal drink)	Duration
1.	*Rasapachakvati*	2 Tab	Twice a day	Before food	Lukewarm water	3 months
2.	*Aarogyavardhinivati*	2 Tab	Twice a day	After food	Lukewarm water	3 months
3.	*Maharasnadi Kwath*	15 ML	Twice a day	After food	Lukewarm water	3 months
4.	*Punarnavadi guggulu*	3 Tab	Twice a day	After food	Lukewarm water	3 months
5.	*Yograj guggulu*	3 Tab	Twice a day	After food	Lukewarm water	3 months

[Table/Fig-2]: Shows internal medication that was advised for a period of three months.

improvement was noted. Follow-up was taken on day 15, day 30 and three months of treatment. Various scales like VAS pain scale, modified Harris hip score, QoL score along with range of movement of bilateral hip joint were used to note the improvement in the patient.

There was significant reduction is pain and stiffness along with improvement in range of motion. VAS pain scale score reduced from 8 to 2. Modified Modified hip Harris improved from 21 to 88 and quality of life score improved from 34 to 69 in the span of three months as shown in [Table/Fig-3].

S. No.	Assessment parameters							
1.	Range of movement of hip joint (using goniometer)	Right hip joint (In degree)				Left hip joint (In degree)			
		Day 0	Day 15	Day 30	Day 90	Day 0	Day 15	Day 30	Day 90
Abduction		20	25	30	45	15	20	20	30
Adduction		10	20	25	25	5	10	10	20
Flexion		15	75	75	90	10	15	30	45
Extension		5	10	10	15	5	5	10	15
Internal rotation		25	30	30	40	10	20	20	30
External rotation		15	25	25	30	15	20	25	30
		Day 0		Day 15		Day 30		Day 90	
2.	VAS pain scale score	8		6		4		2	
3.	Quality of Life score	34		44		56		69	
4.	Modified Harris Hip score	21		26		49		88	

[Table/Fig-3]: Shows improvement in the various assessment parameters over the course of three months.

and joint degeneration [12]. Similar studies have consistently shown that oral medications along with *Panchakarma* play a vital role in the management of AVN [Table/Fig-4] [12,13].

All studies mentioned demonstrate that Ayurvedic management incorporating *Panchakarma* therapies produced substantial improvements for patients suffering from AVN of the hip, evidenced by marked reductions in pain, increased mobility, and enhanced quality of life scores; while each patient differed in age, medical history, and the extent of AVN, the common threads included the use of *basti* (enema), *swedana* (fomentation), and a blend of internal herbal medications. Treatment protocols, duration, and medication choices varied with one study employing *ManjishtadiKshara Basti* and local therapies while another using *Asthapana*and *Anuvasanabasti* and additional *rasayana* support, and the current study staging a comprehensive regimen of local oleation, *swedana* (*Patra Pottali and Shashtik Shali Pinda), Yog Basti, Bruhan Basti* and internal medicines.

Functionally, all patients showed improvement in gait and hip range of motion, significant pain reduction using VAS scale and imaging confirmation. With the current study uniquely documenting an improved Harris hip score and quality of life recovery in a young patient, highlighting both the diversity and effectiveness of ayurvedic strategies for AVN despite differences in presentation and intervention [10,13]. The probable mode of action of the treatment prescribed is further explained.

Panchakarma like *Snehana* (oleation) and *Swedana* (fomentation) play a crucial role in muscle relaxation, toning, and enhancing blood circulation. *Patra Pinda Sweda* effectively alleviates pain and stiffness by pacifying vitiated *Vata, Pitta,* and *Kapha*. *Erandamooladi Basti*, possessing *Deepana* (appetiser) and *Lekhana* (scraping) properties, mitigates *Kapha*-induced heaviness and stiffness. *Ricinus communis* (*Eranda*), its principal component, exhibits anti-inflammatory, antioxidant, analgesic, and bone-regenerative properties, making it ideal for Vata pacification. *Sahacharadi Taila*is *Vatashamaka*

S. No.	Author studies and year of publication	Case presentation	Treatment	Outcome
1.	Singh SK et al., (2023) [12]	A 48-year-old male with bilateral hip pain (dull, aching, radiating to thighs); difficulty walking, sitting cross-legged, squatting. MRI: Left hip Grade III-B AVN, Right hip Grade IV-A.	*Basti (Asthapana and Anuvasanabasti) Shalishashtika Pinda Swedan, Kaishor Guggulu Ashwagandha ChurnaDashamoola Kwatha, Rasayana therapy: Guduchi, Amalaki, and Shilajit*	Initially there was reduced pain at rest and pain only on walking. After *Panchakarma* improved hip motion and pain only during long walks. After 23 months: MRI showed regression
2.	Thomas A et al., (2022) [13]	A 47-year-old male with a history of COVID-19 and spine infection presented with pain and difficulty walking due to AVN of the right hip. MRI confirmed septic arthritis and avascular necrotic changes; clinical findings showed reduced hip mobility and tenderness.	*Manjishtadi Kshara Basti (7 days), Pichu with Murivenna, Anna Lepa with Shashtika Shali aroundright hip joint. Gandha Thailamcapsules, Dhanwanthara Kashayam*	Improved range of motion of right hip. Limping reduced, pain subsided and significant improvement in gait and tenderness
3.	Current study	A 23-year-old female presented with bilateral hip pain, stiffness, restricted lower limb movement, and difficulty walking, worsened over 3 months following a recent fall.	*Sthaniksnehan Patra pottaliswedan Shashtikshalipindaswedan, Yog basti (Niruhaand Anuvasanabasti) Rasapachak Vati, Aarogyavardhini Vati, Maharasnadi Kwath, Punarnavadi guggulu, Yograj guggulu*	There was significant reduction is pain and stiffness along with improvement in range of motion. VAS pain scale score reduced from 8 to 2. Harris hip score improved from 28 to 88 and quality of life score improved from 34 to 69.

[Table/Fig-4]: Ayurvedic treatment for Avascular Necrosis (AVN) across different case studies [12,13].

DISCUSSION

Avascular Necrosis (AVN) is a condition where bone tissue deteriorates due to a lack of blood supply, leading to pain, stiffness, (vatapacifying) and *Kapha-reducing*, exhibiting analgesic, anti-inflammatory, and rejuvenating effects. *PanchtiktaKsheer Basti*, composed of bitter drugs with *Snigdha* and *Shoshana* properties,

nourishes and strengthens bones and halts degenerative changes. *Shashtika Shali Pinda Sweda*, enhances circulation, alleviates muscular stiffness, and promotes tissue rejuvenation, making it highly effective in *Vata* disorders [3-8].

Yogaraja Guggulu primarily acts as an analgesic (*Vedana Sthapaka*) and anti-inflammatory (*Shothahara*). With *Ushna* and *Ruksha* properties, it effectively clears bodily channels (*Srotas*) and targets *Asthimajjagata Vata* disorders [14]. *Punarnavadi Guggulu*, exhibits *Vata-Kaphahara*, *Anulomaka*, and *Shoolahara* properties, offering anti-inflammatory, analgesic, muscle relaxant, and regenerative benefits [15]. *MaharasnadiKwath* is highly effective in pacifying aggravated Vata dosha and providing anti-inflammatory relief. *Aarogyavardhini Vati* stimulates digestive fire, clears body channels, balances fats, and detoxifies the system. It is beneficial for appetite loss, indigestion, liver disorders, and skin diseases, acting as a carminative and stomachic [16]. *RasapachakVati* improves *Rasa Dhatu* digestion, indirectly enhancing *Rakta Dhatu* production. It contains Agni-enhancing herbs that support overall digestion and metabolism [17].

CONCLUSION(S)

In management of AVN, Ayurvedic treatment including *Panchakarma* procedures, provided significant symptomatic relief. There was a marked decrease in pain and stiffness, along with better hip mobility, improved range of motion, higher Harris Hip Scores, and an overall boost in quality of life. Although radiological follow-up was not done during the short three-month treatment period as structural changes in bone are usually assessed over a longer time frame. The notable improvements in symptoms suggest that Ayurveda may play an important supportive role in alleviating symptoms and improving quality of life in cases of AVN.

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