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Integrative Ayurvedic Management of Ficat-Arlet Grade IV Avascular Necrosis of the Femoral Head Presenting as Advanced Bilateral Hip Arthropathy: A Case Report

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Case Report
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Abstract

Avascular necrosis of the femoral head is a progressive osteonecrosis that commonly affects adults, and many cases culminate in disabling secondary arthritis. A 65-year-old male farmer with right hip pain for 8-10 years, accompanied difficulty in walking for 7 years, and restricted right hip movement for 7 years. Examination revealed an antalgic gait, tenderness over the right hip, painful and restricted internal rotation and abduction, and a positive Trendelenburg gait. MRI of both hips showed altered marrow signal in the right femoral head with subchondral cortical collapse and flattening, secondary osteoarthritic change and bilateral involvement, corresponding to Ficat-Arlet Grade IV AVN. He received a 45-day integrative Shodhana and Shamana protocol centered on Panchatikta Ksheera Basti within a Kala Basti schedule of 15 Basti, supported by Snehana, Swedana, local therapies, and internal Guggulu and Rasayana medications. Harris Hip Score pain improved from 10/40 to 40/44, support requirement from two canes to none, and walking distance from indoors only to six blocks; hip flexion improved bilaterally. Repeat MRI showed no definite Subchondral collapse, although advanced arthropathy persisted. Late-stage AVN, usually managed surgically, may respond functionally to integrated Ayurvedic care.

Keywords: Avascular Necrosis; Asthimajjagata Vata; Ayurvedic Management; Harris Hip Score; Panchatikta Ksheera Basti

Introduction

Avascular necrosis, or osteonecrosis, is characterized by the death of the cellular components of bone following disruption of the subchondral blood supply, and the femoral head is its most common site [1]. It predominantly affects adults in their thirties and forties and can progress to disabling arthritis [2]. Osteonecrosis of the femoral head predominantly manifests after the age of 40. The onset in men occurs earlier than in women; with the number of male patients being approximately double that of female patients [3]. In a series of 230 cases, 65.7% were men, with post-traumatic aetiology in 19.13%, glucocorticoids in 13.91%, and alcohol in 26.52 %, while 36.95% had no identified risk factor [4]; alcohol, steroid use, and trauma remain the three most common causes [5]. Glucocorticoids accelerate onset by inhibiting bone formation and promoting osteoblast apoptosis [6].

The Ficat and Arlet classification describes four stages: stages 0-2 are early and stages 3-4 are late, with treatment success directly related to the stages at diagnosis [7]. Stage IV

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denotes collapse of the femoral head, acetabular involvement, and articular destruction with osteoarthritis [8], so late presentation poses a considerable therapeutic challenge. In Ayurveda, AVN is correlated with Asthimajjagata Vata, a Vatavyadhi in which vitiated Vata localizes in the Asthi(bone) and Majja (marrow) dhatus, producing Majja Shosha, Asthi bheda, Sandhi shoola, Stambha and Gurugatratva [9]; its features correspond to Asthimajjavruta vata, whose major symptoms include Bhedo- Asthiparvanam, Sandhishula, Satata Ruk, Mamsabalakshaya and Asvapna [10]. We report a 65-year-old man with Ficat-Arlet Grade IV AVN managed conservatively, in whom an integrated protocol produced meaningful functional recovery.

Patient Information

A 65-year-old male farmer presented with pain in the right hip joint for 8-10 years, difficulty in walking for 7 years, and restricted movement of the right hip for 7 years. The pain was dull, aching, and gradually progressive, aggravated by walking, and relieved by rest. He reported corticosteroid exposure and long-standing physical strain; there was no history of trauma, alcoholism or smoking. He had no comorbidities requiring ongoing pharmacotherapy and no previous hip surgery. He sought Ayurvedic treatment because of persistent symptoms and a preference to avoid surgery.

Clinical Findings

General examination was unremarkable. Gait was antalgic with a positive Trendelenburg sign on the right, and there was tenderness over the right hip joint. Internal rotation and abduction of the right hip were painful and restricted, with limitation of terminal range movements. Muscle power and distal neurovascular status were intact, and no swelling, sinus, or limp deformity was noted. The vital parameters were within normal limits.

Timeline

The chronological course of the case, from symptom onset to follow up imaging, is presented in

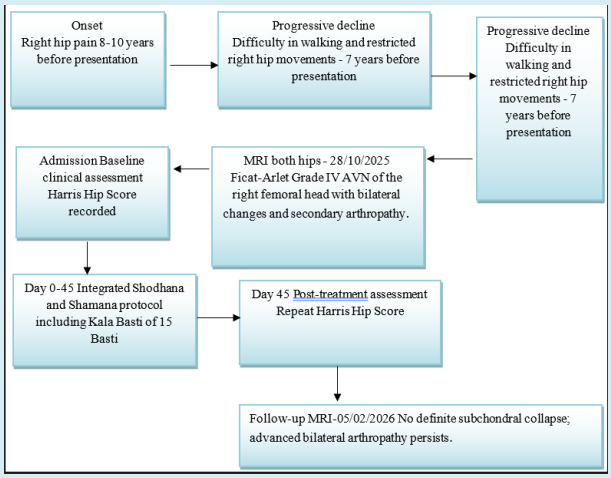


Figure 1: Timeline of the case, from onset of the right hip pain through diagnosis, treatment, and follow-up imaging.

Diagnosis Assessment

Routine haematological and biochemical investigations were within normal limits. MRI of both hips (28/10/2025) demonstrated altered marrow signal intensity in the right femoral head with subchondral cortical collapse and flattening, secondary osteoarthritic changes and bilateral involvement, consistent with Ficat-Arlet Grade IV AVN and secondary hip arthropathy. The recorded Samprapti identified Vata as the prominent Dosha, Asthi and Majja as the Dushya and the Asthivaha and Majjavaha Srotas as the affected channels, with Vishama Agni and Sanga-type Srotodushti, aligning with the classical description of Asthimajjagata Vata. The recorded Nidana- excessive strain and corticosteroid exposure- intersects with the recognized modern risk profile. Functional status was graded using the Harris Hip score, a 100-point scale covering pain, function, activity, deformity, and motion [11] that is responsive to change [12].

Therapeutic Intervention

The patient received a 45-day inpatient protocol combining Shodhana and Shamana (mentioned in Tables 1-3). External therapies included Sarvanga Abhyanga and Nadi Sweda with Dasamoola Taila. Janu Basti, Patra Pinda Sweda, Kati Basti, Snehana with Ksheera Bala Taila, Swastika Shali Pinda Sweda, and Jalauka(leech) application on two

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occasions as localized Raktamokshana . Basti formed the core of treatment: Panchatikta Ksheera Basti with Anuvasana Basti using Sahacharadi Taila, administration as a Kala Basti of 15 Basti, Followed by Mustadi Yapana basti with Anuvasana using Ksheera Bala Taila. This adheres the classical principle that in Asthi-related diseases, Basti should be administered with Tikta rasa drugs in conjunction with Ghrita and Ksheera [13], this approach is supported by reports indicating that Panchatikta Ksheera Basti provides symptomatic benefit in Sandhigata Vata [14] and that panchakarma therapy alleviates pain and tenderness in osteoarthritic joints [15].

Date	Panchakarma Procedure	Time & Duration
29/10/25 to 12/11/2025	Sarvanga Abhyanga with Dasamoola Taila, Nadi sweda with Dasamoola kwath, Janu basti With Dasamoola Taila	14 days
5/11/25 to 4/12/2025	Panchatikta Ksheera Basti, Anuvasana Basti with Sahacharadi Taila, As a kala Basti-15 basti	30 days
20/11/25 to 11/12/25	Patra Pinda Sweda	22 days
4/12/2025 to 15/12/25	Mustadi Yapana Basti, Kati Basti with Ksheera Bala Taila, Snehana with Ksheera Bala Taila	10 days
9/12/2025 to 15/12/25	Anuvasana Basti With Ksheera Bala Taila	7 days
12/12/25 to 15/12/25	Swastika Shali Pinda Sweda	4 days
On 4/12/25-1st & 10/12/25-2nd	Jalauka 1st sitting (clinical session), Jalauka 2nd sitting (clinical session)	2 days

Table 1: Shodhana Treatment.

Date	Shamana Treatment	Time & Duration
29/10/25 to 12/11/25	(Swarna Guggulu-250 mg + Visha Tinduk Vati-250mg + Kukkutanda Twak Bhasma - 65 mg +Guduchi Satwa-125mg-) 1 dose BDAC with Honey (5ml) Rasnadi kwath 15 ml with 15 ml of Lukewarm water BDAC Vatagajankush Rasa-250 mg + Naradiya Laxmivilas Rasa-250 mg - 1 dose BDPC with Lukewarm water. Tab Brahmi Vati - 500 mg BDPC Powder Chatursama Churna 5gm BDPC With Lukewarm water.	14 days
13/11/2025 to 15/12/25	(Yogendra Rasa-125 mg+ Akik pisti-125 mg +Swarna Makshik Bhasma-125mg +Nagarjuna Abhraka-125 mg + Guduchi Satwa- 125 mg + Lasuna Vati -250mg) - 1 dose BDAC with honey (5 ml) Mahamanjisthadi kwath 15ml with 15 ml of Lukewarm water BDAC Punarnava Asavam - 20ml with 20ml of water BDPC Yograj Guggulu-500 mg BDPC WITH Lukewarm water. Hingvastak Churna -5gm BDPC with lukewarm water Arshoagni Vati-500 mg BDPC with Lukewarm water. Brahmi vati-500 mg bdpc with lukewarm water Ashwagandha churna -5gm at night after food with Milk. (250ml).	32 days

Table 2: Shamana treatment.

1	(Yogendra rasa-62.5 mg + Swarnamakshik-250mg + Nagarjuna Abhraka -125 mg + Guduchi satwa-125mg + Lasuna vati-250 mg + Akik Pisti-50 mg)- 1 Dose BDAC with Honey (5 ml)
2	Mahamanjisthadi Kashaya- 15 ml with 15 ml of water BDAC.
3	(Panchatikta Ghrita Guggulu-500 mg + Vatagajankush Rasa -250 mg)- 1 dose BDPC with lukewarm water.
4	Brahmi Vati- 500-tab BDPC
5	(Mahamash Taila+ Vishagarbha Taila)- For Abhyanga.

BDAC = Twice daily before food; BDPC = Twice daily after food.
Table 3: On 16/12/2025- Discharge Medication are.

Internal medication included Swarna Guggulu, Yograj Guggulu, Panchatikta Ghrita Guggulu, Vatagajankush Rasa, Mahamanjisthadi kwath, Punarnava Asavam, Hingvastak churna, Guduchi Satwa, Ashwagandha Churna, Swarna Makshik Bhasma and Kukkutanda Twak Bhasma. Ashwagandha (With ania somnifera) has mechanistic support

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for bone health: its withanolides, particularly withaferin-A, drive osteoblast proliferation and differentiation via Runx2 activation and prevent osteoclast differentiation by inhibiting NF-κB and RANKL [16].

Follow-Up and Outcomes

At the end of 45 days, all Harris hip score domains improved. Pain changed from marked, with serious limitation of activities (10/44), to slight and occasional, with no compromise in activities (40/44); limp from moderate (5/11) to slight (8/11); support from two canes (2/11) to none (11/11); and walking distance from indoors only (2/11) to six blocks (8/11). Sitting tolerance improved from 30 minutes on a highchair (3/5) to one hour comfortably in an ordinary chair (5/5), and he regained the ability to enter public transportation (0/1 to 1/1), climb stairs using a railing (0/4 to 2/4), and put on shoes and socks with ease (2/4 to 4/4). Range of motion improved bilaterally: left hip flexion from 90◦ before treatment through 100◦ at mid treatment to 120◦ after treatment, and right hip flexion from 100◦ through 105◦ to 110◦, with corresponding gains in abduction, internal and external rotation.

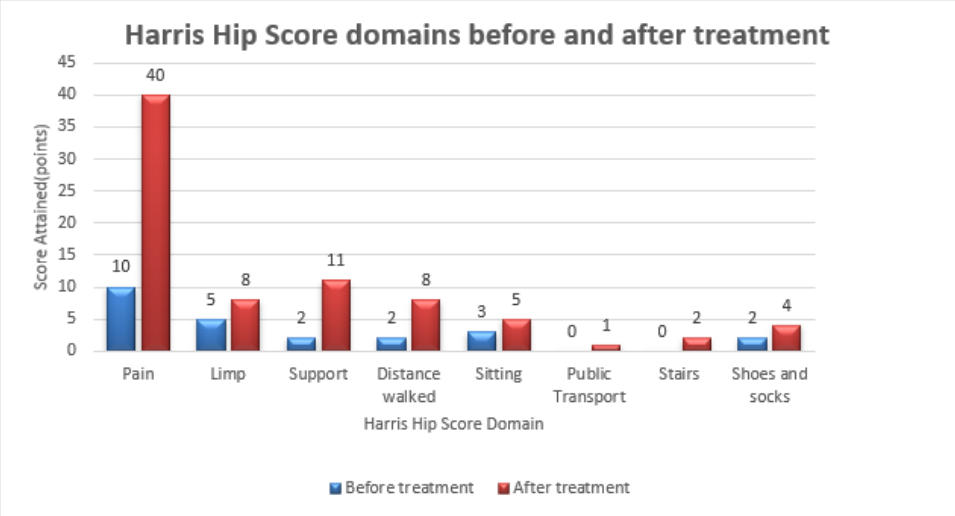


Figure 2: Harris Hip scores domains before and after the 45 days integrated Ayurvedic Protocol. Domain maxima: pain 44, limp 11, support 11, distance walked 11, sitting 5, public transport 1, stairs 4, shoes and socks 4.

Repeat MRI (05/02/2026) showed gross bilateral arthropathic changes with erosions of the acetabular margins and femoral heads, multiple subchondral cysts, reduced joint spaces, and thinning and degeneration of articular cartilage. No definite subchondral collapse was identified at present, while marrow edema in both femoral necks raised concern for early AVN requiring clinical correlation and follow-up imaging. This finding documents the persistence of established structural arthropathy rather the reversal of Grade IV disease.

Discussion

This case is instructive on three counts: the patient was 65 years old-older than the typical AVN population in their thirties and forties- with bilateral Ficat-Arlet Grade IV disease, a stage conventionally regarded as non- salvageable and usually managed by arthroplasty; he nevertheless achieved substantial function gain on a conservative protocol; and the repeat imaging, while not showing structural reversal, documented no definite subchondral collapse.

The shift in pain from the "marked" to the "slight, occasional" category is clinically meaningful, because the Harris Hip Score is a valid and responsive measure. The Protocol was grounded in the Samprapti Vighatana principle: Basti prepared with Tikta Rasa drugs with Ghrita and Ksheera is classically indicated in disease of Asthi, Panchatikta Ksheera Basti has shown symptomatic benefit in Sandhigata vata, and Panchakarma therapy relieves pain and tenderness in osteoarthritic joints. These findings are consistent those of other Ayurvedic studies. A 40-year-old man with Asthimajjagata Vata and one year of hip and groin pain, limp gait,and restricted mobility achieved 80-90% symptomatic relief after six months of integrated Shodhana and Shamana therapy with Vanksana Basti and oral medication [17]. A 55-year-old man with radiologically diagnosed grade 4 AVN and hip pain rated 10 on the visual analog scale improved to 4 with dipana, Anuvasana Basti, Pindasweda, and internal medication [18]. A 60-year-old man with AVN of the neck of the femur treated with Panchakarma and oral medication showed reduced pain, improved range of movement, and improved walking distance [19]. One report described

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MRI change after 23 months, the left hip improving from Grade-III-B to II and right from IV-A to III [20]. Collectively, these reports support feasibility while underscoring the heterogeneity of protocols, assessment tools, and follow-up duration.

The limitations of this study include its design as a single case without a control group, a follow-up period that is short in comparison to the natural progression of avascular necrosis (AVN), and the use of multicomponent regimen, which prevents attribution of outcomes to any specific drug or procedure. Additionally, Subsequent imaging consistently revealed advanced bilateral arthropathy accompanied by femoral neck marrow edema. Longer follow-up and controlled studies using standardized imaging and functional assessments are required.

Conclusion

Integrative Ayurvedic Shodhana and Shamana therapy, centred on panchatikta ksheera Basti within a graded basti schedule and supported by Snehana, Swedana, local therapies and internal Guggulu and Rasayana medication, was associated with marked symptomatic and functional improvement in a 65-year-old man with advanced bilateral hip arthropathy and Ficat - Arlet Grade IV AVN. The learning point is that even late-stage AVN, conventionally steered toward arthroplasty, may gain functionally from integrated Ayurvedic care. These findings are hypothesis generating and require confirmation through longer-term follow-up and controlled studies.

Patient Perspective

The patient reported that he could walk outdoors without support, use public transport, and manage his daily activities independently, which he had been unable to do before treatment. He expressed satisfaction with the outcome.

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None

Authors Contribution

Each author took an equal part in both the design and execution of the study.

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Ethical Approvals

No Ethical clearance was needed for this case study because it simply involves the recording of one patient's clinical case.

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