DOI: 10.7860/JCDR/2026/82655.22184

Case Report

Ayurveda Section

Multimodal Ayurvedic Management of Bilateral Non Traumatic Avascular Necrosis of Femoral Head with Associated Skin Disorder: A Case Report

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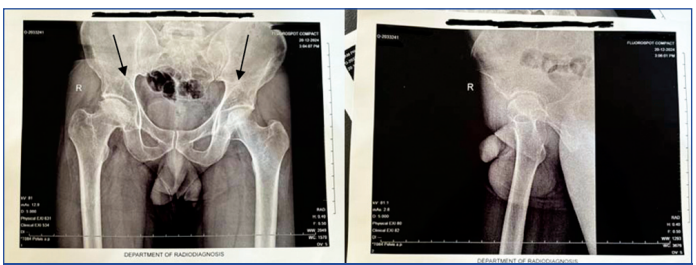
ABSTRACT

In the femoral head, disruption of vascularity deprives bone cells of oxygen and nutrients, leading to osteocyte death, bone weakening, and eventual collapse. This pathophysiology forms the basis of Avascular Necrosis (AVN), a progressive disorder commonly seen in young adults. Risk factors include trauma, corticosteroid therapy, alcohol and tobacco use, etc. AVN of the femoral head is a progressive condition characterised by compromised blood supply leading to osteocyte death and structural collapse. In this case report a 32-year-old male presented with bilateral, non traumatic AVN of the femoral head—stage 3 on the right and stage 2 on the left—accompanied by severe pain, limited mobility, and poor quality of life. His history included prolonged corticosteroid use for a chronic skin condition, prior COVID-19 infection, and tobacco use. After unsatisfactory response to allopathic management, the patient opted for Ayurvedic treatment. Ayurvedic diagnosis was *Asthi-Majjagata Vata* with *Twaka Vikara* (*Tridoshaj kushtha*) and *Raktavaha Strotodushti*. The treatment approach integrated *Shamana Chikitsa* (oral medications), *Shodhana Chikitsa* (detoxification through kala basti), and *Jalaukavacharana* (leech therapy) over six months. Herbal medications like *Dashamoola Kwatha*, *Kaishor Guggulu*, *Panchatikta Ghrita Guggulu*, *Asthiposhak Vati*, and *Avipattikar Churna* were administered. *Basti* therapy, using a combination of medicated milk, oils, and decoctions, was provided in a 16-day *Kala Basti* regimen. Leech therapy was given biweekly to enhance circulation and reduce inflammation. Significant improvements were observed post-treatment. Pain scores on the Visual Analogue Scale (VAS) dropped from 10 to 2. Range of motion in both hips increased markedly. Straight Leg Raise (SLR) test improved from 20° to 90° on the right and from 90° to 120° on the left. The patient regained the ability to walk independently, and his sleep and digestion also normalised. Concurrently, the chronic skin condition showed resolution, eliminating the need for corticosteroids. This case highlights the effectiveness of a multidimensional Ayurvedic approach in managing non traumatic AVN, not only arresting disease progression but also enhancing joint function, systemic health, and quality of life.

Keywords: Chronic skin disease, *Jalaukavacharana*, *Ksheer basti*

CASE REPORT

A 32-year-old male presented with complaints of severe pain in both hip joints—more pronounced on the right side—accompanied by difficulty in walking and sitting for the past one year. Over the last three months, the patient's condition had deteriorated to the point where he was unable to walk or perform routine daily activities. Initially asymptomatic, he gradually developed progressive discomfort in both hips. Radiographic [Table/Fig-1] and Magnetic Resonance Imaging (MRI) investigations conducted at an allopathic facility revealed bilateral non traumatic AVN of the femoral head, classified as stage 3 on the right and stage 2 on the left according to the Arlet and Ficat classification system [1]. Surgical intervention was advised. Despite receiving conventional allopathic treatment, the patient experienced no significant relief and subsequently sought Ayurvedic management.



[Table/Fig-1]: X-ray of both hip showing an area of radiolucency surrounded by a rim of sclerosis.

His medical history included chronic skin disease i.e., psoriasis for the past 2.5 years, for which he had been on systemic corticosteroid therapy for approximately one year. Additionally, the patient had a prior history of COVID-19 infection and had completed COVID-19 vaccination. There was no history suggestive of diabetes mellitus, hypertension, or other systemic illnesses. Family history was non contributory.

Dietary habits were mixed (*Ahara*), and his lifestyle (*Vihara*) was generally balanced. He reported regular bowel movements (once daily) and normal urinary frequency (4-5 times/day and 0-1 times/night). The patient had a history of smoking (approximately one pack of cigarettes per day) and disturbed sleep due to persistent pain. Physically, he had an average build, with a height of 168 cm and weight of 69 kg. Vital parameters were within normal limits: pulse rate 78/min, blood pressure 130/80 mmHg, respiratory rate 18/min, and body temperature 98.9°F.

Upon presentation, he exhibited an abnormal gait and was brought in a wheelchair by relatives, indicating significant impairment in mobility and quality of life. Clinical examinations was done on ayurvedic parameters as presented in [Table/Fig-2,3] [2,3].

On clinical examination, tenderness was noted in the right hip region, along with a decreased range of movements in the hip flexion and extension, external rotation of the hip joint was more painful on right than left side [Table/Fig-4]. Investigations like Complete Blood Count (CBC) and sugar and uric acid levels were within normal limits.

The patient also showed bilateral, well-defined hyperpigmented erythematous plaques with scaling and lichenification over the neck and hands, with some fissuring but normal nails. Symptoms include mild pruritus and cosmetic concern, suggestive of psoriasis in exposed areas [Table/Fig-5].

S. No.	Examinations	Observations
1.	*Nadi* (pulse rate)	78 beats per minute
2.	*Mala* (bowel)	Regular, once daily
3.	*Mutra* (frequency of urine)	4-5 times per day
4.	*Jivha* (tongue)	*Nirama* (not coated)
5.	*Shabda* (speech)	*Spashta* (clear)
6.	*Sparsha* (touch)	*Anushnasheeta* (normal)
7.	*Drika* (vision)	*Prakrita* (no pallor/icterus present)
8.	*Akriti* (body built)	*Madhyam* (medium)

[Table/Fig-2]: *Ashtavidh pariksha* [2].

S. No.	Examinations	Observations
1.	*Prakruti* (constitution of the patient)	*Vata-pitta*
2.	*Vikruti* (pathological variation)	*Vatadosha, asthimajjadhatu, raktavahastrotodushti*
3.	*Sara* (quality of tissues)	*Madhyam* (average)
4.	*Samhanana* (built of the body)	*Madhyam* (average)
5.	*Pramana* (anthopometric measurements)	Weight-69 kg, height-168 cm, BMI-24.6 kg/m^2
6.	*Satmya* (adaptability)	*Madhyam* (average)
7.	*Satwa* (mental strength)	*Pravar* (high)
8.	*Ahara shakti* (digestion)	*Madhyam* (average)
9.	*Vyayam shakti* (exercise capacity)	*Avar* (poor)
10.	*Vaya* (age)	*Yuva avastha* (young age)

[Table/Fig-3]: *Dashavidha pariksha* [3].



[Table/Fig-4]: Physical examination of hip joint.



[Table/Fig-5]: Chronic skin disorder.

Assessment Criteria

On physical examination of the hip joint [4], the patient demonstrated an antalgic gait pattern, with severe pain localised to the right hip. Weight-bearing was markedly reduced on the right side compared to the left, as the patient instinctively avoided loading the affected joint. Dynamic balance was compromised, with poor postural control, asymmetric alignment, a lateral trunk shift to the left, and a right-sided pelvic tilt. On standing, the right iliac crest appeared elevated relative to the left, accompanied by mild lumbar scoliosis with convexity toward the left side.

In the supine position, range of motion at the hip joints was notably restricted and painful. At the right hip, flexion was limited to 20°, extension to 10°, internal rotation to 10°, external rotation to 20°, abduction to 10°, and adduction was absent. On the left side, flexion was possible up to 90°, extension up to 10°, internal rotation up to 30°, external rotation up to 40°, abduction up to 40°, and adduction up to 20°, all with varying degrees of discomfort. Pain intensity was rated as 10 on the Visual Analogue Scale (VAS). Additionally, the SLR test was positive, limited to 20° on the right leg and 90° on the left.

Timeline of Treatment

He was diagnosed as a case of *Asthi-majjagata vata* [5] with *twaka vikara* i.e., *tridoshaj kushtha* and *raktavaha strotas dushti* and was treated according to Ayurveda treatment principals for 6 months.

Ayurved medicines and *basti* (medicated enema) and *jalaukavacharana* treatment were administrated for *strotoshodhan* (detoxification of body channels) to improve local blood circulation and nourish the *asthi dhatu* (bone) as well as nourish the skin.

According to *Ashtang Hriday samhita*, in *Asthikshaya*, *basti* containing *ksheer* (milk), oil and *tikta rasa* (bitter taste) and also for the *twakavikara* (skin diseases), *basti* containing *tikta rasa* (bitter taste) should be administered.

According to the *Charaka* Saṃhita, *Niruha Basti* is contraindicated in *Siddhīsthana*, but in *Chikitsāsthana* it is nevertheless indicated in Kuṣṭha *Cikitsa* when clinically required, with the physician's decision guided by the patient's *avastha* [6].

Jalaukavacharana (leech therapy), a form of *raktamokshana* (bloodletting) in Ayurveda is primarily used to treat *pitta* and *rakta* vitiated conditions. While it is most commonly indicated for skin diseases and localised pain, its indirect benefits on bones are significant through doshic balance tissue support also reducing inflammation, toxins, and enhancing blood flow to the bones. The patient was given 18 sessions of *Jaluakavacharana* with seven days gap in between for three months after that with 14 day gap in between for next three months along with *Shaman* and *shodhan* Yogas [Table/Fig-6]. A routine follow-up was conducted every 14 days.



[Table/Fig-6]: *Jalaukavacharana* to the hip joint.

As per above principle, *shaman chikitsa* (oral medications was given for three weeks) while the patient was admitted to the ward [Table/Fig-7]. *Shodhan basti* (medicated enema) was given in the form of

Ashwagandhadi ksheer basti (therapeutic enema) in a *kala basti* [7] schedule for 16 days. Also *jalaukavacharana* as complementary treatment was administered on every 8th day on alternate hip joint. [Table/Fig-7-9]. Clinically, significant changes were noted after treatment in respect to range of hip joint movements [Table/Fig-10,11]. Clinically, there was also significant changes were noted after treatment pain was assessed based on VAS [Table/Fig-12].

S. No.	Drug	Dose	Anupana	Duration
1.	*Dashamool kwath*	15 mL TDS	½ glass of luke warm water	3 weeks
2.	*Kaishor guggulu*	500 mg BD	Luke warm water	3 weeks
3.	*Panchatikta ghrita guggulu*	500 mg BD	Luke warm water	3 weeks
4.	*Asthiposhak vati*	500 mg BD	Luke warm water	3 weeks
5.	*Avipattikar churna*	5 mg BD	Luke warm water	3 weeks

[Table/Fig-7]: Details of medicines administered.

S. No.	Treatment	Drug used		Dose	Duration
1.	*Stanic abhyang*	*Bala tail*		60 mL	30 min
2.	*Stanic pinda sweda*	*Bala-ashwagandha-mash siddha ksheerodan*		-	30 min
3.	*Kala basti*	*Niruha basti*		*Anuvasana basti*	
		Content	Dose	Content	Dose
		Ashwagandha	10 gm	Bala tail	60 mL
		Guduchi	5 gm		
		Manjishtha	5 gm		
		Shatavari	5 gm		
		Yashtimadhu	3 gm		
		Dhashamool kashay	250 mL		
		Cow milk	200 mL		
		Sesame oil	50 mL		
		Rock salt	pinch		

[Table/Fig-8]: Details of therapies administered (16 days *basti* schedule).

Follow-up and Outcome

Following the initial 16-day *Kala Basti* regimen, the patient experienced moderate relief in symptoms. He was able to sit in a squatting position, and SLR range improved from 0° to 90° in the right hip joint and from 30° to 120° in the left hip joint. *Jalaukavacharana* was administered alternately to each hip every 8th day for a duration of three months.

Subsequently, another 16-day *Kala Basti* course was scheduled, accompanied by oral medications, while *Jalaukavacharana* was performed every 14th day for the next three months.

At the six-month follow-up, the patient achieved complete relief from symptoms. His pain score had reduced to zero, with full, pain-free flexion and abduction of the leg, and painless internal and external rotation [Table/Fig-13]. Currently, the patient is off treatment and remains asymptomatic.

DISCUSSION

The AVN of the femoral head is a progressive pathological condition resulting from the disruption of the subchondral blood supply, leading to the death of osteocytes and other bone cellular components [8]. Although AVN often arises secondary to trauma, such as fractures or dislocations near articular surfaces, non traumatic AVN presents a more insidious aetiology. In non traumatic cases, vascular occlusion—either intraluminal (e.g., thrombosis, fat embolism) or extraluminal (e.g., compression)—compromises the blood flow to the femoral head, resulting in ischaemic necrosis [9].

The femoral head, due to its precarious blood supply and high mechanical demands, is particularly vulnerable to such vascular insults. In a physiologically healthy state, bone remodeling in this region is tightly regulated through the local bone microenvironment and modulated by systemic hormonal signals, including Parathyroid Hormone (PTH), calcitriol, calcitonin, Growth Hormone (GH), oestrogen, leptin, and testosterone. However, in AVN, the localised disruption in remodeling activity overwhelms systemic regulation, resulting in bone death and eventual structural collapse [10]. In this case ayurvedic treatment was used for the treatment of AVN if femoral. Similar cases from the literature have been tabulated in [Table/Fig-14] [11-16].

Several risk factors have been implicated in the pathogenesis of non traumatic AVN, most notably chronic alcohol consumption, long-term corticosteroid use, and tobacco-related habits, these factors influence adipocyte differentiation and lipid metabolism within the bone marrow. This leads to the accumulation of enlarged lipid-filled cells, raising intraosseous pressure, compromising vascular endothelial function, and predisposing to thrombosis and ischaemia [17].

Epidemiological data from the United States suggest that the prevalence of femoral head AVN ranged between 300,000 and 600,000 cases in the early 2000s, with approximately 10,000 to 20,000 new cases diagnosed annually. It predominantly affects individuals between 30 and 40 years of age. Disease progression is

Day	*Basti*	Dose (mL)	Time of administration	Time of *bastipratyagamana*	Symptoms/observation	Complications if any
1	A	60	10:45 am	1:45 pm	Stool frequency twice	None
2	A	60	11:15 am	2:00 pm	Stool frequency once	None
3	N	500	11:00 am	11:15 am	Bowel frequency once	None
4	A	60	11:30 am	2:15 pm	Bowel frequency once, lightness present	None
5	N	500	10:30 am	10:45 am	Bowel frequency once, lightness present	None
6	A	60	10:45 am	1:30 pm	Bowel frequency once, lightness present	None
7	N	500	11:00 am	11:15 am	Bowel frequency once, lightness present, taste in food	None
8	A	60	11:00 am	3:20 pm	Bowel frequency once, lightness present, taste in food, *vatanulomana*	None
9	N	500	11:15 am	11:25 am	Bowel frequency once, lightness present, taste in food, *vatanulomana*, improvement in digestion	None
10	A	60	11:00 am	3:30 pm	Bowel frequency once, lightness present, taste in food, *vatanulomana*	None
11	N	500	11:30 am	11:35 am	Bowel frequency once, lightness present, taste in food	None
12	A	60	10:30 am	2:40 pm	Bowel frequency once, lightness present, taste in food, *vatanulomana*	None
13	N	500	10:30 am	10:40 pm	Bowel frequency once, lightness present, taste in food	None
14	A	60	10:45 am	4:20 pm	Bowel frequency once, lightness present, taste in food	None
15	A	60	11:00 am	3:10 pm	Bowel frequency once, lightness present, taste in food	None
16	A	60	11:00 am	2:25 pm	Bowel frequency once, lightness present, taste in food	None

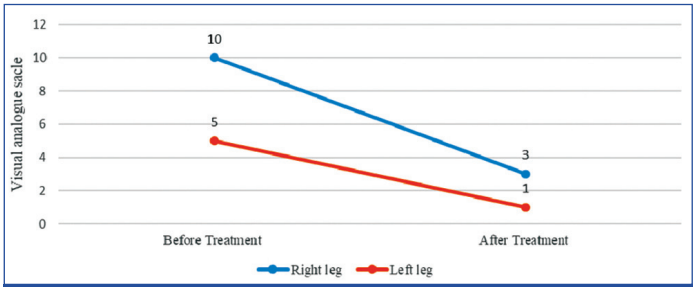
[Table/Fig-9]: *Kala basti* schedule administered in the patient.
A: *Anuvasan basti*; N: *Niruha basti*

S. No.	Range of movement	Before treatment		After treatment	
		Rt. Hip jt.	Lt. Hip jt.	Rt. Hip jt.	Lt. Hip jt.
1.	Flexion (110°-120°)	20°	90°	90°	>120°
2.	Extension (10°-15°)	10°	10°	15°	15°
3.	Abduction (30°-50°)	10°	40°	30°	50°
4.	Adduction (20°-30°)	0°	20°	20°	30°
5.	Internal rotation (30°-40°)	10°	30°	30°	40°
6.	External rotation (40°-60°)	20°	40°	20°	60°

[Table/Fig-10]: Observation of pre and post treatment changes in hip joint.

	Before treatment (In degree)	After treatment (In degree)
Right leg	0°	90°
Left leg	>30°	120°

[Table/Fig-11]: Straight Leg Raise Test.



[Table/Fig-12]: Change in VAS score before and after treatment.



[Table/Fig-13]: After treatment.

often inevitable; if left untreated, about 67% of asymptomatic cases and more than 85% of symptomatic cases eventually progress to subchondral collapse and femoral head destruction, frequently necessitating Total Hip Arthroplasty (THA) [18].

The current case represents a typical example of non traumatic AVN of the right femoral head. Initially asymptomatic, the condition progressed over time, ultimately resulting in joint degradation. Given the high cost, postoperative complications, and often unsatisfactory prognosis associated with surgical interventions such as THA, a conservative treatment strategy was employed [19]. This approach was guided by Ayurvedic principles, particularly focusing on the concept of *Asthi-Majja-gata Kshaya* (bone and marrow degeneration) attributed to *Abhighata-janya Vata Prakopa* (Vata aggravation due to trauma) [20].

From an Ayurvedic perspective, AVN correlates with *Asthi-Pradoshaja Vikara*, more specifically with *Asthi-Majja-gata Vata* and *Raktavaha Strotodushti*. The vitiation of *Vata* and *Pitta doshas* residing in Asthi dhatu leads to various symptoms including:

- *Bheda-asthi-parvanam* (deep bone pain),
- *Sandhishoola* (joint pain),
- *Mamsa-kshaya* (muscle wasting),
- *Bala-kshaya* (loss of strength),
- *Ashwapna* (disturbed sleep),
- *Sandhi-shaithilya* (joint laxity), and
- *Shiryantiiva cha asthi nidurbalani* (progressive weakening and destruction of bone tissue).

Treatment was focused on a comprehensive Ayurvedic approach involving *Shamana* (oral medications), *Shodhana* (bio-purification therapies), and *Jalaukavacharana* (leech therapy), aiming to balance aggravated doshas, restore *dhatu* equilibrium, and improve vascularity and bone health.

In this case of bilateral non traumatic AVN of the femoral head, a comprehensive Ayurvedic management strategy was employed, based on the diagnosis of *Asthi-Majja-gata Vata*, *Twaka Vikara*, and *Raktavaha Strotodushti*. The treatment aimed not only to arrest the progression of AVN but also to improve joint function and address underlying *dosha* and *dhatu* imbalances affecting both bone and skin tissues [20].

S. No.	Authors studies and year of publication	Age, sex and diagnosis of patient presented in case study	Treatment	Outcome
1.	Suryawanshi PP et al., (2017) [11]	Age-25 yrs Sex-Male Diagnosis-Avascular necrosis of femoral head	Treatment plan includes *Kala Basti* schedule *Panchtikta Kshira Basti*, *Kaishor Guggulu*, *Mahavatvidhvance*, *Jasad Bhasma*, *Chopchinyadi Churna*, *Maharasnadi Kwath*, *Punarnavasav*	Pain relief, reduction of stiffness, improved mobility, better blood supply to femoral head, and prevention of further necrosis.
2.	Singh SK et al., (2023) [12]	Age-48 yrs Sex-Male Diagnosis-Avascular necrosis of bilateral hip joint	Treatment plan includes *Panchatiktaks*ḥira *Basti*, *Śāliśaṣṭika Piṇḍa Svedana* with *Daśamūla-kṣhīra*, *Parisheka* with *Daśamūlākṣhīra*, *Kaishora Guggulu*, *Mahātikta Ghṛita*, *Śilajātvaḍi Loha* (*Rasāyana*), *Aśvagandhā* (powder/oil), *Guḍūci Chūrṇa*, *Chopchīnī*, *Daśamūla Kwātha*	Pain reduction, improved mobility, and decreased stiffness, management of Vāta doṣha and Asthi-dhātu kṣhaya; improved circulation by reducing Mārgāvaraṇa, Enhanced tissue nutrition and regeneration.
3.	Yadav T et al., (2024) [13]	Age-36 yrs Sex-Female Diagnosis-Avascular necrosis of head of femur	Treatment plan includes *Matra Basti* with *Kshir Bala Tail*, *Niruha Basti* (*Dashmool*, *Guduchi*, *Manjistha*, *Arjun decoction* with *Sahachar oil*, *honey*, *Saindhava*), *Cap Ksheerbala*, *Shiv Gutika*, *Panchtikta Ghrita Guggulu*, *Mahamanjisthadi Kwath*, *Tab Me-cal*, *Tab Hadjod*, *Amalaki Rasayana*, *Lakshadi Guggulu*, *Guduchi Ghan Vati*	Marked reduction in pain and tenderness, Improved range of motion of the hip joint, Patient regained ability to perform daily activities comfortably, improved quality of life after conservative Ayurvedic treatment, No significant radiological changes, but clinical recovery was evident.
4.	Chaturvedi A et al., (2016) [14]	Age- 37 yrs Sex- Male Diagnosis- Avascular necrosis of the femoral head	Treatment plan includes *Manjiṣṭhadi Kṣhara Basti*, *piṇḍa sveda* with *Medhika Sarṣhapa shatapuṣpa Jaṭāmāṃsī Atasī- Dhānyāmla, Rūkṣaṇa* therapy with *Udvartana*, *Pariṣeka* with *Dhānyāmla* and *Daśamūla kaṣāya, Pācana* and *Dīpana*	Relief in pain, tenderness, and stiffness, Improved gait and mobility, no worsening of AVN grade during follow-up, Cost-effective conservative management that improved quality of life.
5	Ashtankar HS et al., (2023) [15]	Age-37 yrs Sex-Male Diagnosis-Avascular necrosis of femoral head	Treatment plan includes *Panchatikta Kshira Basti*, *Śashtika Shali Pinda Sweda*, *Guduchyadi Yoga*, *Bruhat Manjishthadi Kwath*, *Kaishor Guggulu*, *Laghu Panchmool Siddha Kshira*, *Gandharva Haritaki Churna, Trayodashanga Guggulu, Bruhat Manjishthadi Kwath*, *Bala-Ashwagandha Kshirpaka*	Relief in pain, stiffness, and restricted movement, improved gait and muscle strength, only mild pain in left hip on exertion, no further deterioration of AVN during follow-up, overall improvement in quality of life.

6	Therokar S et al., (2024) [16]	Age-42 yrs Sex-Male Diagnosis-Avascular necrosis of femoral head	Treatment plan includes *Rūkṣa Churna Pinda Sweda* with *Kolkulaththadi Churna*, *Patra Pinda Sweda* with *Ksheerabala Taila* (*Arka*, *Eranda*, *Nirgundi* leaves), *Kala Basti* schedule: *Niruha Basti* with *Manjishthadi Ksheera Basti*, *Anuvasana Basti* with *Ksheerabala Taila*, *Brihatmanjishthadi Kwatha*, *Kaishora Guggulu*, *Abhayarishta+Punarnavasava*, *Panchatikta Guggulu Ghrita*	Relief from pain, stiffness, and restricted hip movement, improved gait and lightness of body, no worsening of AVN during follow-up, Enhanced blood circulation and tissue nourishment (Asthi–Majja Brimhana), improved quality of life with conservative, cost-effective therapy.

[Table/Fig-14]: Ayurvedic treatments for Avascular necrosis of femoral head across different case studies [11-16].

***Shamana chikitsa* (palliative therapy):** The following oral medications were administered during the course of treatment:

***Dashamoola kwatha*:** Its Anti-inflammatory, analgesic, *Vata-hara*, and *Aam-pachak* properties reduces inflammation in joints and supports healing by eliminating *Aama* (toxins) and pacifying *Vata*, the primary dosha responsible for degeneration, also clears *Aam*, improves digestion and metabolism, which are central to treating chronic skin diseases caused by *Pitta* and *Kapha* aggravation [21].

***Kaishor guggulu*:** Its *raktashodhaka* (blood purifier), anti-inflammatory, detoxifier properties alleviates *Vata-Pitta* aggravation in bone tissues, supports joint health, and prevents further degeneration, also clears blood impurities, reduces chronic inflammation, and is traditionally indicated for skin conditions like *Kushtha* (skin diseases) [22].

***Panchatikta ghrita guggulu*:** Its deep tissue detoxification (*Shodhana*), osteo-regenerative, *Asthi-vardhana*, properties highly effective in bone disorders; bitter herbs nourish *Asthi dhatu*, promote bone regeneration, and arrest osteolytic processes, also *tikta* (bitter) rasa is *Pitta-shamaka*, which reduces skin inflammation, clears skin lesions, and improves complexion [23].

***Asthiposhak vati*:** It is *asthi-dhatu poshaka* (bone-nourishing), *Rasayana* for skeletal tissue also provides essential minerals and herbal actives that enhance bone density, repair micro-fractures, and strengthen joints, also supports tissue regeneration and improves structural integrity of the skin by nourishing *Rasa*, *Rakta*, and *Mamsa dhatus* [24].

Avipattikar Churna is *pitta-hara*, digestive stimulant, mild laxative, also helps reduce *Pitta* that may be aggravating *Asthi dhatu* and improves the assimilation of nutrients essential for bone health and regulates *Pitta dosha*, essential in managing inflammatory skin disorders like eczema, psoriasis, and urticarial [25].

***Shodhana chikitsa* (purification therapy):** *Kala Basti*

Ashwagandha is adaptogenic, anabolic, promotes *Majja* and *Asthi dhatu* regeneration, antimicrobial, analgesic, anti-inflammatory, neuroprotective [26]. *Guduchi* is immunomodulatory and anti-inflammatory, helps in bone tissue detoxification [27]. *Shatavari* [28] and *Yashtimadhu* [29] rejuvenate and strengthen bone marrow and connective tissue. *Manjishtha* improves microcirculation in bone, supports detoxification at the cellular level [30]. *Dashamoola* reduces *Vata* at the root level, improves bone healing and relieves stiffness [31]. *Ksheer* and *Taila* provide *Snigdha* (unctuousness) and *Brimhana* (bulk-promoting) properties vital for nourishing dry, degenerating bones. This *Basti* combination helps restore normal bone architecture, reduce inflammation, nourish bone marrow (*Majja*), and facilitate long-term regeneration [32]. *Tikta* and *Madhura* rasa herbs (*Manjishtha*, *Guduchi*, *Shatavari*) are known *Raktaprasadana dravyas*, purify blood and reduce *Twak-doshaja* conditions. Improves skin texture, reduces hyperpigmentation, and enhances immunity against chronic skin lesions [33].

Jalaukavacharana (Leech Therapy) enhances local blood circulation, addressing ischaemic damage, reduces pressure and inflammation in the joint capsule. Facilitates removal of proinflammatory mediators via bloodletting. Removes *Dushta Rakta* (vitiated blood) which is the root cause of many *Twak Vikar*, promotes tissue healing and reduces lesions, itching, and discoloration, provides symptomatic relief from burning, scaling, and other features of chronic dermatoses [34].

Modern studies on leech saliva highlight the presence of hirudin, bdellins, and eglins — natural anti-coagulants, anti-inflammatories, and vasodilators — contributing to improved perfusion and pain relief in both bones and skin [35,36].

This multidimensional Ayurvedic treatment approach, based on classical *Shodhana, Shamana*, and *Raktamokshana*, provided the following overall outcomes: Arrested further femoral head collapse and restored mobility. Significantly reduced pain scores and improved joint range of motion. Rejuvenated *Asthi* and *Majja Dhatus*, reducing symptoms of weakness and instability. Managed underlying *Twak Vikara*, enhancing skin texture and reducing dependency on steroids. Addressed systemic *Vata-Pitta* imbalance, improving sleep, digestion, and quality of life.

CONCLUSION(S)

Based on this case study, it can be concluded that *Ashwagandhadi Ksheera Basti*, when administered alongside specific palliative medications, is effective in the management of AVN of the femoral neck. Although there remains significant scope for further research, the findings demonstrate that with accurate diagnosis and an appropriate treatment protocol, aurveda can play a highly beneficial role in the management of AVN. The recovery observed in this case was remarkable and noteworthy, making it valuable for documentation.

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PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Aug 17, 2025
- Manual Googling: Sep 20, 2025
- iThenticate Software: Sep 23, 2025 (5%)

ETYMOLOGY: Author Origin

EMENDATIONS: 6

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

Date of Submission: **Aug 11, 2025**
Date of Peer Review: **Aug 30, 2025**
Date of Acceptance: **Sep 25, 2025**
Date of Publishing: **Jan 01, 2026**