



AYURVEDIC MANAGEMENT OF AVASCULAR NECROSIS OF HIP JOINT: A CASE REPORT

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ABSTRACT

Avascular necrosis of the hip joint is an increasingly common cause of musculoskeletal impairment and presents a significant diagnostic and therapeutic issue, although patients are initially asymptomatic, avascular necrosis typically progresses to joint destruction of the femoral head, requiring complete replacement of the hip, usually before the fifth decade. There are no signs and symptoms in the early stage, but the bone collapses in the advanced stage and displays several symptoms such as groin or hip pain radiating to the weight bearing aggravated buttocks, thigh or knee. If the condition is not treated as the pain gradually increases and worsens with time and use, pain at rest increases at the later stage, which can be worse during the night and may also be associated with morning stiffness. Due to its preventive, promotional, prophylactic and rejuvenating properties, and offering a radical remedy, Panchakarma is a very special therapeutic technique. In the present case study, Mansarasa Basti and herbo-mineral calcium supplements were given to patients diagnosed with avascular necrosis of hip joint. Evaluation was carried out on subjective criteria and it was concluded that in the case of AVN, the Mansarasa Basti provided substantial gains in improving functional movement.

Key words: Asthikshaya, Avascular Necrosis, Mansarasa Basti

INTRODUCTION

Ayurveda has been shown to be effective in treating and preventing chronic ailments till date. Ayurveda principles have been helpful in the treatment of emerging diseases caused by changing lifestyles and the environment. This case study was an attempt to understand the Ayurvedic idea of the disease and find an appropriate treatment to prevent the disease.

AVN is a pathological disorder that results from a transient or permanent loss of blood supply to a specific part of the femoral head, also affecting it. The ischemia, along with its overlying joint surface, results from the subsequent collapse of the bone tissue and its death. Necrosis is caused by the occlusion of the arteries and the most often affected area is the femoral head. The majority of patients with this condition have an increased percentage of females in their third or fourth decade of life. Femoral head symptoms of AVN are accompanied by pain in the groin or hip that radiates to the buttocks, anteromedial thigh or knee, aggravated by weight-bearing and occasionally coughing. With time and use, gradual changes in pain intensify, patients experience rest pain that may be worse during the night and may be associated with morning stiffness.

In our classics very little matter is available about asthi dhatu. From general properties of asthi dhatu, its position, relationship with other body tissues and their functions; sthayi asthi dhatu can be considered as bones. The nutrients essential for formation and metabolism of asthi such as calcium, magnesium and other minerals can be taken as asthayi (poshaka) asthi dhatu.

Asthi kshaya is a disorder that is clarified in almost all of Ayurveda samhitas. Along with the kshayas of all the dosas, dhatus and malas, i.e. asthadasha (18 kinds) kshayas, it is clarified. The term Asthikshaya itself denotes that it is made up of two terms Asthi and Kshaya that indicate the depletion of the Asthi dhatu. There is no clear mention of the Asthi kshaya nidana or the variables that cause Asthi Kshaya in classics. But through Ashrayaashrayi Bhava, the relationship between Asthi dhathu and Vata dosha is beautifully explained. According to this rationale, asthi kshaya arises when Vata increases and vice versa.

Early detection of avascular necrosis of the femoral head enables the effectiveness of conservative treatment, with relieving pain and restoration of normal joint function. More aggressive clinical measurements, such as complete joint replacement, are required after subchondral fractures have occurred, with a substantial increase in morbidity.

Whatever may be the cause, prime pathology involves the reduction in blood supply to the femoral head. In Ayurvedic pathogenesis, this can be inferred as follows: The supply of Rakta dhatu (blood tissue) to the femoral head is reduced. This results in a reduction in the supply of nutrients to that portion and a decline in its density (asthidhatukshaya). It may further result in majjadhatukshaya because majja (bone marrow) exists in asthidhatu.

A degenerative Vata disease (Asthi-Majja kshaya) requires pioneering Vata treatment, i.e. Basti, Charaka aptly highlighted the glorified classification of Basti. The strongest treatment modality is administration of snehana (oleation therapy) both externally and internally. Abhyanga (massage) with medicated oils is done externally and is administered internally in the form of Pana (internal oleation via oral route) and Basti (oleation via rectal route). The specific method that is administered in the form of Niruha and Anuvasana basti is therapeutic enemas in painful diseased conditions of the lower part of the body.

CASE STUDY

The aim of this case study is to identify a program of Phanchakarma therapy and long-term results for AVN patients. The investigator used historical and physical evaluation details to create an individualized patient care plan. A pain assessment using Visual Analog Scale (VAS) was used in this analysis to determine outcomes.

Instrumentation:

Visual Analog Scale (VAS): It is a measuring tool that cannot be explicitly assessed for subjective features or attitudes. To indicate their pain level, patients need to mark a point on a 10 cm horizontal or vertical line, with 0 indicating "no pain" and 10 indicating "the worst pain possible." Thus, for the present analysis, VAS was used to measure the pain in the hip joint.

| | | |
|----|--------------------------|---------------|
| 0 | Pain Free | No Pain |
| 1 | Very Mild | Minor Pain |
| 2 | Discomforting | |
| 3 | Tolerable | |
| 4 | Distressing | Moderate Pain |
| 5 | Very Distressing | |
| 6 | Intense | |
| 7 | Very Intense | Severe pain |
| 8 | Utterly Horrible | |
| 9 | Excruciating unbearable | |
| 10 | Unimaginable unspeakable | |

Grades of Ruk (pain) assessment

- No pain - 0 (VAS)
- Mild pain - 1 (1-3 VAS)
- Moderate pain - 2 (4-6 VAS)
- Severe pain - 3 (7-10 VAS)

Toda (Pricking sensation)

- No Pricking sensation - 0
- Occasionally pricking sensation - 1
- Mild pricking sensation - 2
- Moderate pricking sensation - 3
- Severe pricking sensation - 4

Stambha (Stiffness)

- No stiffness - 0
- Less than 6 hours - 1
- More than 6hrs & less than 12 hrs - 2
- More than 12hrs & less than 24 hrs - 3
- Whole day - 4

Suptata (Numbness)

- No Numbness - 0
- Occasional - 1
- Mild - 2
- Moderate - 3
- Severe - 4

Gait -Limp

- None - 0
- Slight - 1
- Moderate - 2
- Severe or unable to walk - 3

Movement

- Normal movement - 0
- Partially restricted - 1
- Restricted with severe pain - 2
- No movement - 3

Standing Time

- Can stand, without pain - 0
- Standing for more than 30min, without pain - 1
- Standing for more than 15 min, without pain - 2
- Standing for more than 10 min, with pain - 3

Sitting

- Comfortably in ordinary chair one hour - 0
- On a high chair for half an hour - 1
- Unable to sit comfortably in any chair - 2

Distance Walked

- Unlimited - 0
- Six blocks - 1
- Two or three blocks - 2
- Indoors only - 3
- Bed and chair - 4

Stairs

- Normally without using a railing - 0
- Normally using a railing - 1
- If any manner - 2
- Unable to do stairs - 3

Range of Motion (*Normal)

- Flexion : 0-125
- Extension : 115-0
- Hyperextension : 0-15
- Abduction : 0-45
- Adduction : 45-0
- Lateral rotation : 0-45
- Medial rotation : 0-45

Patient description and historical examination findings

Case: This 42-year-old man, married, graduate, businessmen belongs to Hindu family suffered from right sided low back, hip and leg pain for the past one year. The patient walked with the aid of a cane. He complained of intermittent pain in his thigh region. The onset of pain was sudden. Symptoms have been exacerbated by driving, ascending stairs and lifting goods. The pain was eased by lying on the bed. Light numbness and fatigue were present in the right leg. There was no bowel and urinary dysfunction. No night sweats, no fever, no chills. The major symptoms that prompted him to seek medical attention include intermittent pain, radiating pain, pain during exercise, slowing down in all movements, impaired balance and ability to walk with assistance. He was diagnosed with AVN disease in the hospital. No history of infection/disease or injuries in the past. He has no prior disease. No history of DM, tuberculosis, hypertension, hypothyroidism. All of the sensory functions were normal. Initially, he is taking allopathic medications, pain killers and anti-inflammatory medication that alleviate pain and weakness in the leg, improve movement and help him to cope with the disease. He was referred for physical therapy intervention.

Personal History

| | | | | | |
|----------------|---|-----------|-------------------|---|--------------------|
| Aahar | - | Mixed | Rasa predominance | - | Katu, Amla, Lavana |
| Agni | - | Visham | Kosta | - | Madhyama |
| Nidra | - | Disturbed | Bowel habits | - | Constipated |
| Nature of work | - | Sedentary | Addictions | - | Tobacco |

Examination: Physical

| | | | | | |
|-------------|---|--------------------|------------------|---|-------------|
| Built | - | Moderate | Nourishment | - | Moderate |
| Conscious | - | Yes | Co-operative | - | Yes |
| Body weight | - | 68 kgs | Height | - | 172 cms |
| Heart Rate | - | 88/min | Respiration Rate | - | 22/min |
| Temperature | - | 101 ⁰ F | Blood pressure | - | 138/92 mmHg |

No pallor/cyanosis/clubbing/jaundice/lymphadenopathy

Systemic

| | | | | | |
|---------|---|-----------------------|-----|---|-------------|
| Abdomen | - | Soft | CVS | - | S1S2 normal |
| RS | - | Bilateral chest clear | CNS | - | Irritable |

Local Examination

Inspection – Gait – Limp

Muscle atrophy was noted in the right thigh musculature. SLR produced right hip pain at 40⁰.

ASIS (lowered) Lumbar Lordosis

Attitude of the limb at Internal Rotation

Abduction/Adduction/Flexion Apparent Shortening (Yes)

Swelling around the hip (Yes) Muscular wasting (Yes)

Skin - No Scars/sinuses

Palpation - Tenderness present, Local temperature raised

The palpation of the right hip area revealed extreme tenderness. Muscle palpation showed tenderness in the right calf, pelvic musculature, paraspinal lumbar and right gluteal musculature.

Movements - the range of motion of the right hip was extremely limited and painful in all directions, with more pain encountered in abduction and internal rotation. The lumbar spine range of motion was complete with end-range pain in right lateral flexion and right rotation. The range of motion of the right knee was complete and pain free, and no effusion was detected.

Measurements - Length of the limb is Normal

Other examination - Lower limb neurological testing revealed normal reflexes and sensory testing bilaterally. Global muscle weakness was noted in the right lower limb when compared to the left. Later joint provocation tests were painful for L4, L5. The SI test was uncomfortable for the right sacroiliac joint.

Investigations

Hb%: 14.2gm/dl

TLC: 7,200/cu. mm

DLC: P 54 %, L 40 %, B 0 %, E 2 %, M 4%

Platelet count: 2,15000/cu. mm

ESR: 11 mm after one hour.

Blood Sugar level: FBS 102 gms/dl PP 168 gms/dl.

Urine test: Absent, Pus cells – 5-6/HPF

TSH: 3.30 uIU/ml

Lipid Profile: Total cholesterol 221 mg/dl, LDL 114 mg/dl, HDL 39.6 mg/dl, Triglyceride 107 mg/dl, VLDL 21.4 mg/dl

RFT: Blood urea 49 mg/dl, Serum creatinine 1.1 mg/dl, Serum uric acid 7.1 mg/dl

LFT: Total Bilirubin 0.48 mg/dl, Albumin 4.0 gm/dl, Globulin 2.6 gm/dl, ALT 19 U/L, AST 25 U/L, ALP 87 U/L, Total protein 6.5 gm/dl

BMD – ‘t’ scores equal to -2.1

Radiological Investigations

X-ray L.S. Spine – Slight curvature, Lordosis

X-ray Hip Joint – Sclerosis of the Right femur head

MRI – Disc bulge at L4-L5 level, mild retrolisthesis of L5 over S1 likely due to degenerative changes. MRI suggesting AVN of the superior lateral head (right) of the femur with changes in the acetabulum.

Nerve conduction test – within normal limits

Treatment Schedule

1. Snehana- Bala taila followed by Nadi sweda over back, buttock and thighs for 5-10 minutes.
2. Basti – Kwath (Dashmool 100 gm, Shatavari 50 gm, Ashwagandha 50 gm) 250 ml, Godugdha 50 ml, Mansarasa 50 ml, Til oil 50 ml, Honey 20 ml – Total 10 basti
3. Oral Medication – Herbo-mineral calcium supplements [Mukta Shukti bhasma – 250 mg, Kapardik Bhasma – 250 mg, Sigru (*Moringa olifera*) 1 gm, Ashwagandha (*Withania somnifera*) 2 gm, Asthisamhara (*Cissus quadrangularis*) 1 gm] 5 gm BD with Milk for one month.

OUTCOMES: The overall functioning condition changed after treatment. There was no reason to take any additional pain killer drugs during treatment. Medical evaluations were rendered on the basis of the interrogation and grading of the score pattern. There has been a dramatic change in the parameters as follows:

| S.No. | Parameters | Before Treatment | After Treatment |
|-------|---------------------------|------------------|-----------------|
| 1 | Pain | 5 | 2 |
| 2 | Toda (Pricking sensation) | 2 | 0 |
| 3 | Stambha (Stiffness) | 2 | 0 |
| 4 | Suptata (Numbness) | 3 | 1 |
| 5 | Gait - Limp | 2 | 1 |
| 6 | Movement | 2 | 1 |
| 7 | Standing Time | 2 | 1 |
| 8 | Sitting | 2 | 1 |
| 9 | Distance walked | 3 | 1 |
| 10 | Stairs | 2 | 1 |
| 11 | Range of motion- Flexion | 110 | 115 |
| | Extension | 105 | 110 |
| | Abduction | 30 | 40 |
| | Adduction | 40 | 40 |
| | Lateral Rotation | 40 | 45 |
| | Medial rotation | 25 | 35 |

There was reduction in pain, pricking sensation, stiffness, numbness, gait, movement, standing time, sitting, distance walked, stairs and range of motion. During the therapy occasionally required to take the pain killer. No side effects were found during therapy as well as after completion of treatment.

DISCUSSION

Basti acts by nourishing the Asthi and Majja. Acharya Sushruta has mentioned that 6th Basti nourishes Mamsa dhatu, 7th Basti Nourishes, Medo dhatu, 8th Basti Nourishes Asthi dhatu and 9th Basti Nourishes Majja dhatu (Su.Chi.37/71-76). Thus, through the Basti one can achieve Vata dosha shamana and snehana of Asthi dhatu and increasing Majja dhatu. Thus, overcome the Asthi Majja kshaya. It provides strength to the Asthi dhatu. (Ch.su.13/17). Snigdha, Guru and Ushna guna of basti are against the ruksha, Laghu, Shaitya guna of Vata. Yapana basti was planned for strengthening of asthi dhatu. Shatavari has Madhur, Tikta Rasa, Sheeta veerya, Madhur Vipaka, Guru, Snigdha Guna and Ashwagandha has Katu, Tikta, Kashaya Rasa, Snigdha, Laghu Guna, Ushna Veerya and Katu Vipaka. Dashmool pacifies Vata and acts as an anti-inflammatory, analgesic and anti-rheumatic agent. It gives the body strength and strengthens the functions of the joints. It tones muscles and soothes nerves. Most ingredients of basti have tikta, Madhur, Katu rasa, ushna veerya and madhura and katu vipaka favors normal functioning of dhatvagni, facilitating increased nutrition of the asthi dhatu. As a result, degeneration of Asthi and Majja dhatu reduced helping its regeneration. Cow's milk is Vata-pitta shamaka, balya, brihmana, madhura, Sheeta veerya. Thus, it pacifies Vata; improves the dhatu upacaya and acts as a rejuvenator of the body. Manasa Rasa is nutritive and Vatapittahara. Thus, helps in

the samprapti vighatana of the ashti-majjagata Vata. Herbo-mineral calcium supplement which plays an important role to utilize calcium and phosphorous from blood and helps in bone formation.

CONCLUSION

This small case study indicates that patients with AVN can make substantial changes in symptoms and function within a relatively short time. Our goal, however is to serve as a demonstration of the positive results that can be accomplished by the use of targeted, impairment-specific panchakarma therapy as shown in the classic Ayurvedic text. This research describes medication that increases healing time and minimizes the risk associated with panchakarma therapy. Despite the shortcomings of this case study it is concluded that panchakarma therapy can be a successful alternative in the treatment of AVN.

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