

AYURVEDIC MANAGEMENT OF AVASCULAR NECROSIS OF FEMORAL HEAD – A CASE STUDY

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ABSTRACT

Avascular necrosis (AVN) is a crippling disorder, characterized by death of osseous cell due to vascular compromise, which leads to eventual collapse of bone tissue with its overlying joint surface. It has various etiological factors. AVN can affect any bone in the body but the most common one is femoral head (FH). The most common symptoms of AVN-FH are pain and stiffness of hip joint, radiating pain in groin, gluteal, thigh, knee regions and development of limp during walking. Diagnosis is done with the aid of imaging procedures. It is a progressive disorder with surgical intervention as the prime choice. From Ayurvedic perspective, Avascular necrosis may fall

under Asthi majja gata vata. In present case study a male patient of 36 yrs diagnosed as AVN- FH (bilateral) who also underwent Core Decompression surgery with no symptomatic relief, had been treated with Shamana drugs along with Panchakarma procedures for 6 weeks. Special gradation of the symptoms had been used to assess the effectiveness of treatment. There was significant improvement in the clinical condition of the patient. Conservative management of Avascular necrosis through Ayurveda provides better relief and improves quality of life.

KEYWORDS: Avascular necrosis, Asthimajja gata vata, Shamana drugs, Panchakarma.

INTRODUCTION

Avascular necrosis, also referred to as osteonecrosis, aseptic necrosis or ischemic bone necrosis is a disease that results from temporary or permanent loss of blood supply to the bone. Blood carries essential nutrients and oxygen to bones. When this blood supply is disrupted (avascular), the bone tissue begins to be necrosed. This can weaken bone and eventually leads to its collapse.^[1] If this happens in a joint it leads to collapse of joint surface resulting in severe arthritis. Avascular necrosis can occur in a single bone or can be multifocal. It can affect nearly any bone in the body but most commonly affects the ends (epiphysis) of long bones like femur causing hip and knee arthritis. Other common sites include the bones of the upper arms, shoulders and ankles.

The most common etiology of Avascular necrosis is use of corticosteroids for long run, followed by use of alcohol. Other possible causes include trauma, systemic lupus erythematosus, pancreatitis, gout, radiation, sickle cell disease, other connective tissue disorders, auto immune diseases, hyperlipidemia, fat embolism syndrome and metabolic bone diseases. However 15% of cases exhibit no obvious cause hence known as idiopathic osteonecrosis.^[2] It affects mostly in adults between 20 to 50 yrs old and 60% are bilateral. Men are more prone than women. Avascular necrosis comes under ICD-10-CM Diagnosis Code M87.059.^[3]

The earliest symptom of Avascular necrosis is pain at affected joint at first when bearing weight, then later even at rest. Later in the disease joint stiffness, osteoarthritis and deformity occur. Diagnosis is confirmed by detailed clinical examination and imaging procedures. Early changes can be detected reliably by MRI while late features are evident on plain Radiographs. ARCO Staging (Association Research Circulation Osseous) of Osteonecrosis^[4] includes stage 0 to 4 indicating the progression of disease which can be known by seeing X-rays, MRI and Bone scan.

Prognosis of the disease depends on the cause, severity (stage), amount of bone involved, age and overall health. There is no proven medical therapy for Avascular necrosis. Most of the patients need surgery as the disease worsens. Surgical options available are Core Decompression, Osteotomy, Free vascularized Bone graft and Total joint replacement.

Avascular necrosis may be correlated with Asthimajjagatavata in Ayurveda. Its clinical features described are bhedo-asthiparvanam (breaking type of pain in bones), sandhishula

(joint pain), mamsa bala kshaya (muscle atrophy and loss of strength), aswapna (disturbed sleep), satataruk (continuous pain).^[5] To avoid surgery, Avascular necrosis is treated by considering the treatment principles of Asthimajjagatavata.

CASE REPORT

A 36 years old male patient came to Kayachikitsa OPD of Dr B.R.K.R. Govt Ayurvedic College and Hospital (Regd no 262/4858) with the complaints of severe pain in hip, knee and ankle joints of both lower limbs since 3 years. The pain is more on right side than left. There was difficulty in standing, walking and also sleeping on either side.

Patient was asymptomatic 3 years back, first he developed pain in right side of hip. Then he went to nearby hospital and was prescribed some Analgesics and Anti-inflammatory drugs. He used the medicine for 4 months and got transient relief. Gradually he developed pain in left hip joint. Then he went to Gandhi Hospital and got done investigations including MRI. There he was diagnosed as Bilateral AVN of Femoral Head (right side- stage 3, left side-stage 2) and advised for surgical intervention on both sides. After one year he had undergone for Bilateral Core Decompression surgery. But there was no significant relief from the pain and as the time passed it gradually radiated to bilateral gluteal, thigh, knee and ankle joints. There after his condition was still worsened.

There was no history of usage of corticosteroids, any trauma, no Diabetes Mellitus Hypertension and Thyroid abnormalities. Personal history revealed mixed diet, occasionally alcoholic. His appetite was moderate and had disturbed sleep (due to pain).

On examination, limping of right leg was found. Range of motion of right hip was limited and painful in all ranges. On palpation there was pain and tenderness in both hip regions, more on right side. No apparent muscle atrophy was present. There was radiating pain in both knee and ankle joints.

No other systemic abnormalities were found. All investigations were normal, except raised ESR with 102 mm/hr. Radiographs of knee joints showed degenerative changes.

Patient was given awareness about the nature and progression of the disease and counselled for the probable outcome of Ayurvedic treatment, taken consent and then treatment was started.

TREATMENT

Here the main objectives of treatment are to improve joint mobility, to stop further damage, and to protect bone and joints. The patient was advised to reduce weight bearing on the hips and to do range of movement exercises.

Initially medication was started to reduce pain. From 4th day onwards drugs for Deepana and Paachana were added. From 7th day onwards mrudu snehana, nadi sweda and Bala Guduchyadi Ksheera vasti were administered for 7 days continuously. There was marked change in the condition of the patient after these medications. The shaman aushadas were continued and after 15 days again Yoga vasti was planned for more beneficiary effects. During the whole process the patient was carefully monitored for any complications.

Table 1: Shamana Chikitsa (Drugs treatment orally).

Drugs	Commenced	Dose	Duration
Tryodashanga guggulu	From first day	250mg, thrice a day, after meals	14 days
Tab Ksheerabala 101	From first day	1 tab bid after meals	6 weeks
Tab Vatagajankushras	From first day	1 tab bid after meals	14 days
Ashwagandha Churna	From first day	3 gms bid after meals with luke warm milk	6 weeks
Tab Amrutha guggulu	From 15 th day	250mg 2tab tid, after meals	8 weeks
Tab Shiva gutika	From 15 th day	500mg bid after meals	8 weeks
PanchaTiktaghritam	From 6 th week	15ml in the morning on empty stomach with lukewarm water	1 month
Madhuyashtyaditaila	from first day	For external application	6 days

Table 2: Shodana Chikitsa (Purification Procedures).

Drug	Commenced	Dose	Duration
Tab Chitrakadi vati for Deepana & Pachana	From 4 th day	1 tab tid, after meals	5 days
Hinguvastaka Churna for Deepana & Pacana	From 4 th day	3 gms bid along with meals	5 days
Mrudusnehana with Madhuyashtyaditaila	From 7 th day		20 min external application
Nadisweda (withNirgundi, Sigru, Chinch, Eranda, Arkapatradecoction)	From 7 th day		10-15 min
BalaGuduchyadiKsheeravasti (Saindhava lavana-5gms, Pravala pishti-4gms, Madhu-30ml, PanchaTikta ghrita-60ml, Kshseerapaka of Bala and Guduchi	From 7 th day	200ml	7 days

Yogavasti regimen Anuvasanavasti : (Madhuyashtyadi taila- 60ml Pravala pishti-5gms	From 15 th day	60ml	8 days
Niruhavasti : Saindhalavana- 5gms Madhu- 50ml PanchaTiktaghrita- 60ml Shatapushpa kalka- 20gms Dashamoola kwatha- 250ml		300ml	

RESULTS

The parameters that were assessed to see the effectiveness of treatment are pain, ability to walk, range of movements, and limping of leg. Special gradation of these symptoms was used which is mentioned in table no.3.

Table 3: Gradation of Symptoms of Avascular necrosis.

Sl.no.	Sign and Symptom	Gradation
1	Pain in joint	
	No pain	0
	Mild	1
	Moderate	2
	Severe	3
	Very severe	4
2	Difficulty in walking	
	No difficulty	0
	Mild	1
	Moderate	2
	Severe	3
	Very severe	4
3	Limping of leg	
	Normal	0
	Slight	1
	Moderate	2
	Severe	3
	Very severe	4
4	Range of movement	
	Normal movement	0
	Mild restricted	1
	Moderately restricted	2
	Severely restricted	3
	Cannot move (due to pain)	4

Table 4: Assessment of Symptoms of Avascular necrosis Before and After Therapy.

Sl.no.	Sign and Symptom	Before Treatment	After Treatment
1	Pain in Right Hip joint	4	2
2	Pain in Left Hip joint, bilateral Knee and Ankle joints	3	1
3	Difficulty in walking	3	1
4	Limping of leg	3	1
5	Range of movement	3	1

After therapy, there was significant change in the Signs and Symptoms within the time period of 6 weeks which can be clearly seen in table no.4. He is able to walk freely now with slight pain in right hip joint, negligible pain in left hip joint, bilateral knee and ankle joint. There was marked improvement in the gait.

DISCUSSION

In the present case of Avascular necrosis of bilateral femoral head, there was no specific cause, therefore it can be taken as idiopathic osteonecrosis. However decreased blood supply forms the root of pathophysiology, which is followed by ischemia, osteocyte necrosis, loss of structural and functional integrity, finally collapse of the joint involved. The treatment of AVN-FH is mainly surgical and generally involves a total hip replacement or arthroplasty for end stage femoral head osteonecrosis. Here the patient had undergone for bilateral Core Decompression surgery two years back with no symptomatic relief.

According to Ayurveda the pathogenesis of Avascular necrosis involves Vataprakopa with Rasa-Rakta-Asthi-Majjadhathus in Madhyama Rogamarga. So the treatment was planned accordingly. As there was severe pain and difficulty in walking in the initial stage, medication was started to reduce pain. After getting some relief from pain drugs for Deepana, Paachana, and Vatanulomana were given. The role of Agni is very important for the formation of dhatus. Hence correction of Agni should be done by which the process of dhatupaka will be strengthened.

Before administering Bala Guduchyadi Ksheeravasti, as Poorva karma Abhyanga was done with Madhuyashtyaditaila which has anti arthritic, anti-inflammatory, and analgesic properties^[6] followed by nadisweda. The leaves of Nirgundi, Sigru, Chinch, Eranda, Arka have Vatahara properties which help in reducing pain. Bala has Vatahara and immune enhancing properties. Guduchi is drug of choice in Vatarakta, in which obstruction in blood vessels is main pathology. Ksheera with its madhura and snigdha properties, helps to control

Vatadosha. Ghrita is having property like Yogavahi which is helpful in increasing bio-availability of other drugs without losing its own property. Tikta rasa aushadhis are beneficial in Asthikshaya Chikitsa. Pancha Tiktaghrita helps in normal functioning of dhatvagni thus increases nutrition to Asthi and Majjadhatu.^[7] Saindhavalavana by its sukshma guna helps in removing Sroto avarodham, thus helps in improving blood circulation to the bone tissue. Dashamulakwatha balances tridoshas, especially with its Vatahara property helps to decrease pain.

Concerning the Shamana treatment Amruthaguggulu acts as analgesic, anti-inflammatory, anti bacterial and also has blood purifying properties.^[8,9] Shiva gutika with its Rasayana property helps to improve quality and strength of Saptadhatu.^[10]

From these Panchakarma and Shamana treatment modalities, the patient is having significant relief from Symptoms. Now the patient is able to walk freely with minimal pain in right hip joint, also there was improvement in gait. It would be far better if the patient comes in early stages before surgical intervention. It is once again proved that Ayurvedic medication definitely can slow down the progression of the disease. However there is a need for more research to be done on the stage-wise possibility in treatment of Avascular necrosis.

CONCLUSION

In this case of Avascular necrosis with bilateral Femoral head, the above mentioned Panchakarma procedures and oral drugs provided a better clinical improvement within six weeks of treatment period. The therapy is cost effective. From this case study it can be stated that conservative management of AVN-FH through Ayurveda provides significant relief and improves quality of life.

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