

## **ROLE OF AYURVEDA IN THE MANAGEMENT OF AVASCULAR NECROSIS OF THE LEFT FEMORAL HEAD- A CASE STUDY**

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### **ABSTRACT**

Avascular necrosis (AVN) also called as osteonecrosis, is a condition that occurs when there is a loss of blood supply to the bone. Because an interruption to the blood supply affects bone integrity. If not stopped, this process eventually causes the bone to collapse. Treatment has been facilitated by using a widely accepted international classification system, effective in earlier diagnosis using MRI to treat and may require surgical management in later stages. No universal satisfactory therapy has been developed, even in early stage. In *Ayurveda*, there is no direct reference of disease resembling to Avascular necrosis of a left femoral head, but this condition can be compared to clinical features of *Asthimajjagata vata*. A 33-year male patient, reported to SDM college of Ayurveda and hospital, Hassan with complaints of severe low back ache, pain and stiffness in left hip joint for 3 months. It was diagnosed as a case Avascular necrosis of left femoral head – stage 3 (Arlet and Ficat's staging) based on MRI- reports. Patient was treated with *panchakarma* treatment and with certain oral medications. After treatment there is significant improvement in pain and range of movements.

**Keywords:** Avascular necrosis, asthimajjagata vata, osteonecrosis, panchakarma

### **INTRODUCTION**

Avascular necrosis (AVN) also called as osteonecrosis, is a condition that occurs when there is a loss of blood supply to the bone. Because an interruption to the blood supply affects bone integrity. If not stopped, this process eventually causes the bone to collapse. This disease may affect an individual bone as well as joint. Of all the joints in the body, the hip joint is most

commonly affected by AVN. The chief blood supply for the hip joint is through the branches of lateral circumflex arteries, which enter into the capsule at its distal attachment and passes through the reflected capsule proximally along the posterior surface of femur enroot to the femoral head, nutrient branches penetrate the femoral neck and as the femoral head is ap-

proached the nutrient vessels become fewer in number and of smaller caliber.<sup>1</sup>

## **CAUSES**

**Trauma:** Injuries, such as hip dislocation or fracture, can damage nearby blood vessels and reduce the blood flow to the bones. **Steroid use:** High-dose use of corticosteroids, such as prednisone, is the most common cause of avascular necrosis that isn't related to trauma. The exact reason is unknown, but one hypothesis is that corticosteroids can increase lipid levels in the blood, reducing blood flow and leading to avascular necrosis. **Excessive alcohol use:** Consuming several alcoholic drinks, every day for several years also can cause fatty deposits to form in the blood vessels.

**Bisphosphonate use:** Long-term use of medications to increase bone density may be a risk factor for developing osteonecrosis of the jaw. This complication has occurred in some people treated with these medications for cancers, such as multiple myeloma and metastatic breast cancer. The risk appears to be lower for women treated with bisphosphonates for osteoporosis.

**Certain medical treatments:** Radiation therapy for cancer can weaken bone. Organ transplantation, especially kidney transplant, also is associated with avascular necrosis.

Medical conditions associated with avascular necrosis include Pancreatitis, Diabetes, Gaucher's disease, HIV/AIDS, Systemic lupus erythematosus, Sickle cell Anemia.<sup>2</sup>

## **SYMPTOMS**

Many people have no symptoms in the early stages of avascular necrosis. As the condition worsens, your affected joint may hurt only when you put weight on it. Eventually, the joint may hurt even when you're lying down. Pain can be mild or severe and usually develops gradually. Pain associated with avascular necrosis of the

hip may be focused in the groin, thigh or buttock. In addition to the hip, the areas likely to be affected are the shoulder, knee, hand and foot.<sup>2</sup>

## **PREVALENCE**

The exact prevalence of this disease is relatively uncommon, but its incidence occurs at the ratio of 4:1 to male & female. The male to female ratio varies depending upon the associated comorbidities for ex: alcohol associated osteonecrosis is more common in men, while osteonecrosis associated with systemic lupus erythematosus (SLE) is more common in women. The problem of osteoporosis in INDIA remained neglected for a long time for two important reasons: 1. The average life expectancy in our country at independence was 47 years, and 2. Osteoporosis, till recently was considered as an inevitable consequence of aging with no treatment available. With increasing numbers of elderly in India, osteoporosis is emerging as an important public health problem.<sup>3</sup>

## **PATHOGENESIS**

The pathogenesis of osteonecrosis is an area of controversy. Most experts believe that it is the result of the combined effects of genetic predisposition, metabolic factors and local factors, affecting blood supply, such as vascular damage, increased interosseous pressure, and mechanical stresses. The mechanism responsible for the osseous infarction is fat embolism and intravascular fat globules are often found in resected femoral heads in idiopathic necrosis. It probably begins by an interruption of the blood circulation within the bone, subsequently the adjacent area becomes hyperaemic, resulting in demineralization in trabecular thinning and later in collapse.<sup>4</sup>

## TREATMENT

Treatment has been facilitated by using a widely accepted international classification system, effective earlier diagnosis using MRI and more aggressive surgical management. No universally satisfactory therapy has been developed, even for early disease. It is essential that AVN of the femoral head is diagnosed early because delaying this disease by joint preserving measures have a much better prognosis and because the results of joint replacement are poorer in young individuals.<sup>5</sup>

In *Ayurveda*, there is no direct reference of disease resembling to Avascular necrosis of hip joint, but this condition can be compared to the clinical features of *Asthimajjagata vata*, described as *bhedo-asthiparvanam* (breaking type of pain in bones), *sandhishula* (joint pain), *sata ruk* (continuous in nature), *mamsabalakshaya* (loss of strength and muscles weakness) and *asvapna* (disturbed sleep), which can be correlate with the symptoms of AVN.<sup>6</sup>

## MATERIALS & METHODS

The present study is a single case study conducted on a patient suffering from a vascular necrosis of Hip Joint.

### Case report:

A 33-year male patient, reported to SDM college of *Ayurveda* and hospital, Hassan with complaints of sever low back ache, pain and stiffness in left hip joint for 3 months, and his associated complaints were general debility and insomnia, for which he consulted his family doctor who prescribed him with volini topical spray and oral medication for a duration of 10 days and an injection for 3 days. Symptoms got relieved temporarily, after 1 month he developed with the same complaints and consulted the same doctor who changed the medications and prescribed ORS. On February 16<sup>th</sup> his pain

at hip region increased to an extent where he was unable to walk without support. Then he consulted Srinivas Nursing home at Hoskote, and they suggested to take X-ray, MRI and suggested for surgical intervention. On February 20<sup>th</sup> he consulted Vikram hospital in Bangalore for second opinion and they also suggested for surgical interventions. As he was not willing for surgical interventions, he approached SDM hospital for further conventional management.

MRI report shows that Avascular necrosis of left femoral head – stage 3 (Arlet and Ficat's staging)

Patient was admitted in hospital after being thoroughly examined, regular blood investigations and routine urine and microscopic examination were also done to rule out other systemic diseases.

Personal history revealed mixed diet, irregular bowel, disturbed sleep (due to pain) and non-alcoholic also non-smoker. He had a history of bronchial asthma since four years he consulted an *Ayurvedic* doctor who gave him *kashayas* prepared by the physician himself which he used for one and half year.

### Local examination:

Tenderness was present at hip region as well as at knee joints, he was not able to walk more than 50 feet at a stretch. There was significant loss of range of movements, both active and passive. Patient had normal muscle bulk and tone. Cardiovascular and respiratory systems were in normal limits.

### TREATMENT:

Management was done on the basis of three components of *Rasayan chikitsa* i.e. *Rasa* (nutrition), *Agni* (digestion & metabolism) and *Strotus* (Microchannels).

Following procedures and medicines were advised.

Procedure & Medicines	Commenced	Time period	Dose
<i>Sarvanga parisheka</i> with <i>dhanyamla</i> and <i>dashamoola qwatha</i>	From first day	For 4 days	Once a day
<i>Churna basti</i>	From second day	For 3 days	<i>Anuvasana basti Niruha basti</i>
<i>Manjistadi lepa</i> to left hip region	From first day	For 7 days	Once a day
<i>Gandharva hastadi taila</i> 10 ml with warm milk at evening	From first day	For 5 days	Once a day
<i>Sarvanga abyanga</i> with <i>murivenna taila</i> followed by <i>sarvanga parisheka</i> with <i>dhanyamla</i> and <i>dhashamoola qwatha</i>	5 <sup>th</sup> day	For 1 day	Once a day
<i>Stanika parisheka</i> with <i>ksheera bala taila</i>	From 5 <sup>th</sup> day	For 7 days	Once a day
<i>Tiktaka ksheera basti</i>	From 5 <sup>th</sup> day	For 8 days	<i>Anuvasana basti Niruha basti</i>
<i>Mustadi yapana basti</i>	13 <sup>th</sup> day	For 3 days	<i>Anuvasana basti Niruha basti</i>
<i>Yogaraja guggulu</i>	From 1 <sup>st</sup> day	For 15 days	2 tabs after food 3 times a day
<i>Jalukavacharana</i>	On 12 <sup>th</sup> day	For one day	Once a day

### Advice on discharge

1. <i>Gandha taila</i>	For 1 month	10drops with milk 2 times a day
2. <i>Guggulu tikta kashaya</i>	For 1 month	15 ml 3 times a day with same quantity of water
3. <i>Murivenna taila</i> for (E/A)	For 1 month	For external application

### RESULT

Pain and range of movements were assessed. Pain is assessed by using visual analogue scale (VAS), where “0” is no pain and “10” is severe pain. Range of movements assessed subjectively.

On the day of admission, pain graded as “8” on VAS. After 5 days of treatment, pain reduced to grade 7. Gradually the pain was reduced & it was graded as ‘2’. Range of movements - he had significant improvement in range of movement. Now he is under follow up.

### DISCUSSION

Hence, initially *parisheka* with *Dhānyāmla* and *Daśamūla kaṣāya* was planned.

Patient of AVN can be treated with *Rukṣaṇa* followed by *shodhana* and *br̥hmaṇa* line of treatment. *Ācāryas* while explaining the *dhātupāka avasthā* (metabolism process) clearly explains about importance

of *agni* which is singularly responsible for the formation of the *dhātus*. Thus, correction of *agni* should be done by administration of *dīpana* and *pācana dravyas* and the process of *dhātu pāka* must be strengthened,<sup>7</sup> the *doṣhas* must be balanced and metabolic toxins must be eliminated from the *dhātus* through *pañchakarma*. As the pre-operative process, *ācāryas* have prescribed “*br̥hmyāṃstu mṛdu langhayet*” which means the usage of *rūkṣaṇa* for better *br̥hmaṇa* (rejuvenation)<sup>8</sup>. Hence, initially *parisheka* with *Dhānyāmla* and *Daśamūla kaṣāya* was planned.

*Susrutha* described the mode of action of *bahya snehana*, the *virya* of drug present in *Abhyanga*, *parisheka*, *avagaha*, *lepa* etc, are absorbed into the skin and then digested by *agni* (*bhrajaka pitta*). According to contemporary science physical manipulation in the form of massage increases the blood and plasma, it can stimulate and strengthen the lymphatic system and re-

move internal waste products.<sup>9</sup> *Swedana* drugs by *ushna* and *tikshna guna* are capable of penetrating the microcirculatory channels where they activate the sweat glands to produce more sweat. After dilatation of microchannels, *laghu* and *sara guna* of these drugs enable them to act on the *dosha* in the channels, remove the stagnation, making the sticky contents mobile and direct them to move towards *koshta* or excrete them through micro pores of the skin in the form of sweat, resulting in *srotoshodhana*.<sup>10</sup>

According to *Ayurveda*, The pathogenesis of AVN can be inferred as lack of *Raktadhatu* (blood supply) to hip joints due to *strotorodha* (blockage of micro channels). *Gandharva haritaki* was given for *strotoshodhana* (cleansing of micro channels). *Basti* is one among the *pañcakarmas* which clearly shows its efficacy in chronic conditions due to its therapeutic effect especially in its *brimhana* action. Therefore, in AVN like conditions this can prove to be a better modality of treatment, as AVN represents *gambhira asthi dhātu* involvement. *Charaka* and *Vagbhata* mention the use of *Basti* prepared with the *Tikta Dravya*, *Ksheera* and *Ghritha* as the treatment<sup>11</sup> of *Asthi Kshaya* along with the use of *Swayoni Dravyas* (similar substance). *Sushruta* also mentions the use of similar substances in case of diminished *Dhatu*<sup>12</sup>. According to *acharya charaka mustadi yaapana basti* cures stiffness of knee joints, thighs, and calf region. it gives strength instantaneously and rejuvenates the body. *Jalaukavacharana* helps in removal of *sthanika dushitha rakta* and improves capillary circulation at that part, thus helping in pain relief. As per the clinical experience, *jalaukavacharana* is practiced once in 15 days.

## CONCLUSION

*Ayurveda* maintain the health in cellular level. In ayurvedic prospective there is wide scope for

management in *GambhiraVyadhi*. The AVN is considered as surgical disease and there is no positive conservative management in other system of medicine. Conservative management of Avascular Necrosis through *Ayurvedic* principle provides significant relief on the basis of symptomatology.

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