



## AYURVEDIC MANAGEMENT OF AVASCULAR NECROSIS OF FEMORAL HEAD - A CASE STUDY

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### ABSTRACT:

Avascular necrosis is a condition of the disruption of the blood supply causes the cellular death of bone constituents in which the necrosis caused by artery blockage and insufficient blood supply, which results in the collapse of that bony segment. One of the typical sites for avascular necrosis is the head of the femur and the condition progresses over time. The illness worsens if neglected, leading to the collapse of necrotic bone segments. The prognosis is quite dismal, and all of the therapy options are expensive. Here a 30 year old male patient was presenting with AVN of left hip joint with the symptoms of pain over the left hip joint where the pain was radiating to left leg upto the knee, unable to walk properly, occasional numbness over left thigh and was managed with *Snehana and Swedana* followed by *Vasthi* and other internal medications. Patient was observed for symptomatic improvements based on signs and symptoms before and after treatment. The therapy provided marked improvements in the gait, pain, tenderness and range of movements. Conservative management of AVN through Ayurvedic principles provided significant relief in sign and symptoms and improved quality of life.

**Keywords:** Avascular Necrosis, *Tridoshas*, *Ashraya-Ashrayi bhava*, *Asthimajjagatavata*, *Shodhana*, *Shamana*, *Vasthi*

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## INTRODUCTION:

Osteonecrosis, commonly known as Ischemic bone disease or bone infarction, is a condition known as avascular necrosis (AVN) is death of bone tissue due to interruption of the blood supply. Early on, there may be no symptoms and gradually there is pain and discomfort in a joint which increases over time which may limit the ability to move. While it can affect any bone, about half of cases show multiple sites of damage. The most common kind of bone necrosis is AVN of the femur head. Because the arteries that supply the femoral head area are so small, the area is easily injured, leading to a simple dislocation or a sub capital fracture (close to the head) of the femur. Trauma, blood vessel obstruction, and other factors can contribute to this. Typically, people between the ages of 30 and 50 are affected. Males are more commonly affected than females. Diagnosis is typically by medical imaging such as X-ray, CT scan, or MRI. Rarely biopsy may be used. Except for minor soreness near the hip joint, the patient won't exhibit any symptoms in the early stages. In the early stages, bone scintigraphy and MRI are the preferred diagnostic tools. X-ray images of avascular necrosis in the early stages usually appear normal. In later stages it appears relatively more radio-opaque due to the nearby living

bone becoming resorbed secondary to reactive hyperemia<sup>(1)</sup>.

*Tridoshas* are involved in the pathogenesis of AVN in one or the other stages especially the *Vata*. As *Vata* and *Asthi* are in *Ashraya-Ashrayi bhava*, once the *Vata* gets vitiated the *Asthi* also gets decreases or gets damaged<sup>(2)</sup>. Similar mechanism can be seen in AVN also. Thus role of *Vata* is there invariably there in the pathogenesis of AVN. In the same way *Pitta* & *Raktha* are in *Ashraya - ashrayi bhava*. As there is damage to the bone tissues, there will be obviously lack of blood supply in those affected areas and thus *Pitta* will be either in the *Vridhhi* or *Kshayavastha*. So there can be abnormality of *Pitta* in AVN. Involvement of *Kapha* also can be seen in AVN. As like other *Doshas*, *Kapha* resides in the remaining *Dhatus* especially the *Medas*. So when *Kapha* increases, the fat tissue content will be also getting increased which can create an obstruction to the channels mainly the blood carrying channels. This can cause a lack in blood supply which may ends up with AVN. In the same way the *Dhatus* like *Rakta*, *Medas*, *Asthi* and *Majja* involvement can be understood. As there is damage to the *Asthi*, in turn the *Majja* which subsides in it and which becomes a *Moola* for the *Asthivahasrotas* also gets damaged<sup>(3)</sup>. Thereby the normal function of *Asthipoorana* doesn't

fulfill by the *Majja* which ends up with brittleness, weak and damaged bones.

Main *Nidanas* includes the *Vata*, *Kapha* and *Medas* aggravating *Ahara-viharas*, Malnutrition which causing depletion of body tissues, over-nutrition, diseases like *Pandu*, *Vatarakta*, *Sthoulya*, *Agnimandya*, *Ama* production, *Avarana* by *Kapha* or *Medas* or *Ama* and *Abhighata*. The *Samprapti* can be considered as, when there is damage in the bony tissues there will be tendency of *Vata* to get aggravated, As the quantity of *Vata* increases naturally the qualities like *Rooksha*, *Chala*, *Sookshama*, *Laghuta* etc will increases which in turn causes damage to the bones. As *Vata* is one of the main culprit creating *Shoola*, here also the aggravated *Vata* creates pain to the affected bone or joint. This holds good with concepts of *Dhatukshaya* and *Vatavridhi* which are main reasons for *Avaranavata*<sup>(4)</sup>.

We can consider this AVN in different perspectives in *Ayurveda*. It can be considered as *Vatarakta* as there is imbalance in *Vata* and *Rakta* is happening like damage to the bones as well as lack of blood circulation in the affected part. *Asthimajjagatavata* can be another consideration. There will be *Asthi parva bheda*, *Sandhishoola*, *Mamsa* and *Bala kshaya*, *Satataruk*<sup>(5)</sup> which all can be seen in AVN also. Mostly the symptoms of this *Asthimajjagatavata* resembles with the signs

and symptoms of Osteopenia or Osteoporosis. Whereas AVN is also known as Osteonecrosis which is almost similar to Osteoporosis. As *Agni* is the main culprit for creating all the problems in our body, here also it plays an important role. When *Agnimandya* occurs, it produces *Ama* and affects the normalcy of other *Dhathwagnis*. Thus there will not be no proper *Poshana* and *Ama* obstructs the channels of blood circulation. This both can create damage to the bones.

Here in this condition we should concentrate on *Agnideepana*, *Amapachana*, *Vata* and *Kaphahara chikitsa*. As there is involvement of *Kapha* and *Medas* are for sure, initially should go with *Rookshana* herapy thenafter the *Vatahara* and *Brumhana* therapies. Here comes the role of *Panchakarma*. *Snehana* can be administered both internally and externally followed by the *Swedana* which are the *Pradhana chikitsa sootra* in *Vatavyadhi*. *Virechana* to clear out the *Avarana* and *Vasthi Karma* to eliminate the aggravated *Vata* as well as to remove the *Avarana*<sup>(6)</sup>. Then we can proceed with the *Sthanika Chikitsa* according to the *Roga* and *Rogi Avastha*.

#### CASE REPORT:

This case report was about making an *Ayurvedic* protocol in the management of a case of Avascular Necrosis (*Asthimajjagata*

*Vata*). A 30-year-old male patient was presenting with pain over the left hip joint which was radiating downwards upto the knee joint which made his walking difficulty due to pain and occasional numbness over the left thigh.

### **History of present illness**

The patient was apparently normal. As a part of his job he used to sit for a long time in front of the system and used to be in night shifts regularly. The problems started gradually and initially there was very minimal manageable pain only. By the time, it eventually worsened and pain became unbearable and made him unable to walk and to do his regular activities. He was taking allopathic analgesics but only temporary relief was there. Then he took MRI and confirmed the diagnosis as Avascular Necrosis.

### **Past history**

He had an episode of COVID-19 attack in June 2021 and had severe breathing issues.

### **Personal history**

Occupation - IT field, long time sitting, Regular night shifts

**Alcohol/Smoking habits** - No.

No history of any trauma/surgery/accidents.

**Family History** : Mother is having DM.

Not a K/C/O - DM, HTN, Dyslipidemia, Heart disease, Allergies, Haemorrhoids, Thyroid dysfunction.

### **Vitals :**

BP : 120/80 mm of Hg

PR: 85/mt

RR: 18/mt

Temperature: 35.6°F

Appetite: Adequate

Bowel : Regular, once in a day

Micturition : Regular, 4-5times/day

Sleep : Day sleep, Sound

No regular exercises

Weight : 83kg

Height : 173cm

BMI : 27.7

### **Ashtavidha Pareeksha:**

- *Nadi* : *Vata*
- *Mala* : *Samanya*
- *Mutra* : *Samanya*
- *Jihwva*: *Nirama*
- *Shabda* : *Samanya*
- *Sparsha* : *Samanya*
- *Druk* : *Samanya*
- *Akruti* : *Sthoola*

### **MATERIALS AND METHODS**

**Selection of patient:** Patient selected from IPD

- Vaidyaratnam Nursing Home, Ollur, Thakkattusery, Thrissur, Kerala, India

Type of study : Simple random single case study

### **Intervention**

Total Study Duration 25 days

Follow up after one month

### **Shamana Chikitsa Aushadhi**

Selected on the basis of *Lakshana, Vaya, Agni*.

- 1) *Sukumaram Kashayam 15ml + Nimbamrutadi Mezhu 1tsp* – Before breakfast
- 2) *Panchathikthakam Kashayam 15ml + Dhanwantharam 41 Avarthy 8 drops* – Before Lunch
- 3) *Gulguluthikthakam Kashayam 15ml + Shaddharanam Gulika 1* – Before dinner
- 4) *Asaneladi Thailam* – on head
- 5) *Dhanwantharam Thailam + Kethakeemooladi Thailam + Panchathikthakam Ghrutam 3:3:1* – on body

### **Shodhana Chikitsa**

- 1) *Kolakulathadi Choorna Pinda Sweda* – 12 days
- 2) *Pradesika Dhara* with *Dasamoolasrutham Dhanyamlam* on Both hips extending upto thighs – 7 days
- 3) *Pradesika Shyamaka Rookshaswedam* on left hip & left leg– 7 days
- 4) *Upanaham* with *Sahacharadi* medicines + *Kethakeemooladi* medicines + *Rasnadi Ghrutham* on low back & both the legs
- 5) *Adhakayam Thailasekam* – 10 days (using the body oil)
- 6) *Mathravasthi* – 4 days (*Pippalyadi Thailam* initially twice then with

*Dhanwantharam Mezhuapakam & Panchathikthakam Ghrutham* twice)

- 7) *Kashayavasthi* – 3 days (*Vaitharanam , Madhuthialikam, Yapanam*)

### **Medications at the time of discharge:**

- 1) *Adareesahacharadi Kashayam 15ml + Panchathikthakam Ghrutam 1 tsp* – Before breakfast
- 2) *Balasatavaryadi Kashayam 15ml + Shaddharanam Gulika 1* – Before dinner
- 3) *Nimbamrutadi Mezhuapakam 1tsp + Milk* – Bedtime
- 4) *Rheumacalm Tablet 2* – SOS
- 5) *Asaneladi Yamakam* – on head
- 6) *Dhanwantharam Thailam + Kethakeemooladi Thailam + Panchathikthakam Ghrutam 3:3:1* – on body

### **Samprapti**

In this case, the patient used to sit for a long time in front of the system and used to be in night shifts regularly as a part of his job. By this the *Vata* got aggravated. Due to the obstruction created by *Kapha* and *Medas*, the blood supply to head of femur has got disrupted further which turned to the degeneration over there which occurred due to the *Ashraya ashraya bhava* of *Asthi* and *Vata*. Gradually the symptoms like *Shoola*, *Mamsa* and *Bala Kshaya*.

### ***Samprapti Ghataka***

*Dosha: Vata & Kapha*

*Dushya: Rakta, Mamsa, Asthi, Medas, Majja*

*Adhishthana: Urvasthi*

### **Inference/observations**

The *Chikitsa* was started with *Kolakulathadi Kizhi* along with the internal medicines which was meant to reduce the inflammation, pain as well as to reduce the stiffness over muscles & joints and to improve the numbness. On second day of *Choornapindaswedam*, *Pradesika Dhara* was started for the purpose of *Vata & Shoolasamana* and to remove the *Avarana* over the affected area. On the 8<sup>th</sup> day of *Choornapindaswedam* pain got aggravated over left leg and thus started the *Pradesika Rookshaswedam* locally to reduce the pain & inflammation. As there was no much reduction in the pain scale, on 9<sup>th</sup> day of *Kizhi*, *Shamana oushadhis* also has been changed. After the completion of *Choornapindaswedam*, *Adhakayam Thailasekam* and *Upnaham* administered. Both were done for the purpose of *Balya, Brumhana* and to improve the blood circulation over that area. The enemas given in the above said order as initially to reduce the *Ama & Avarana*, then to reduce the *Shoola &*

*Shopha* and finally for *Vatahara & Brumhana* purpose.

As per the complaint logged by patient were estimated by clinical signs and symptoms: Severity parameters are measured on a scale of 0 to 4, from none to maximum. Here we observed symptoms which presents in the patient during before and after the treatment was estimated and then transformed into a grade from 0 to 4.

**Table 1: Grading - Score**

Response	Grade in Numeric
No response	0
Slightly good	1
Good	2
Very good	3
Excellent	4

**Table 2: Changes in signs and symptoms BT and AT**

Signs & Symptoms	BT	AT
Pain	0	4
Radiating nature	0	4
Walking difficulty	0	4
Numbness	0	2

**Table 3: Changes in MRI before and after treatment**

Test Name	BT (30.10.2022)	AT (30.11.2022)
MRI	Bilateral AVN of femoral head shows fat within the superior aspect of femoral head	AVN of bilateral femoral heads Rt – stage II, Lt – Stage

	surrounded by a sclerotic reactive margin. Surrounding marrow edema in left femoral head & neck. Left mild hip joint effusion.	III Mild left hip joint effusion.
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## DISCUSSION

Patient was an IT employee with night shifts regularly by profession. Due to his profession and sitting job his lifestyle was totally irregular before treatment. The pain which was initially mild slowly aggravated and made his day to day activities difficult due to pain and condition worsened by last 3 weeks. Considering all conditions, he got admitted in Vaidyaratnam Nursing Home and underwent IP treatment for 25 days along with the internal medications. As AVN is a degenerative condition, there was only temporary relief with the analgesics. Considering this as *Asthimajjagatavata* along with the chances of *Avarana*, medications and treatments were started on that basis. Along with this *Vasthi* which was the *Ardhachikitsa* gave him good results. As per the patient's words he was feeling much better after starting the *Upanaham* and the radiating pain got subsided completely by this. So as per the combination of concepts from *Samhitas* and *Dosha* as well as *Vyadhi Pratyaneeka Chikitsa* gave him better relief. By the completion of IP treatments, patient's most of the complaints were reduced remarkably. Along with the

treatment sessions Physiotherapy sessions were also going considering his condition & strength. Even though there was no much change observed in the MRI reports, in the film we can see some mild changes in the contour of femoral head and there was some increase in the bone density over there. As we are considering AVN as an *Asthimajjagatavata*, it was treated with *Rookshana* followed by *Shodhana* as well as *Brumhana* line of treatment. As there will be production of *Ama* and impairment of *Agni*, medications will be administered for *Deepana-Pachana* purpose along with the *Panchakarma* therapies which eliminates the toxins from body. After attaining proper *Shodhana* and *Agnideepana*, the medicines administered were aiming at the *Brumhana* of *Raktha, Mamsa, Asthi* and *Majja dhathu* which means it improves the blood circulation over the area of femur and give nourishment and strengthening of the bone.

## CONCLUSION

Now a days musculoskeletal disorder is very common. Among that AVN is one of the most threatening condition which makes the affected person more stressed and made

unable to do the routine activities. As it can turn into a chronic condition and there was no permanent cure with the allopathic medications, *Ayurveda* can play a better role. With the concepts of *Hetu & Vyadhi pratyaneeka chikitsa*, the medications and *chikitsa* can be planned according to the intensity, *vaya, kala, agni* and *satva bala*. Along with the *Shamana* and *Shodhana chikitsa*, physiotherapy sessions to relief the muscular spasms and yoga to get rid off the mental stress levels will be more helpful in this condition. But as it is a chronic condition, regular follow ups are much needed along with the modifications in life style and food habits to cop up with the daily life.

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