

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

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ABSTRACT

Avascular necrosis of femoral head is mainly due to obstructed blood supply to localised area of the bone. Due to inadequate nourishment bone cell of localised area dies and gradually collapse. Resulting dull or throbbing pain in that area. Symptoms of AVN described in modern medicine has close resemble with *asthi-majja gat vata*. *Asthi-majja gat vata* has been described by all most all the *Acharyas* of Ayurveda. A case of *asthi-majja gat vata* (w.s.r to AVN of left hip joint) was treated with *shodhana karma*, and *shamana aushadies*. The line of treatment provides symptomatic relief and improves quality of life in a patient of avascular necrosis. As symptomatic improvement was noted in range of movement, intensity and duration of pain.

KEYWORDS: Asthi-majja gatvata, AVN, Shaman & Shodhan Chikitsa.

INTRODUCTION

Avascular necrosis (AVN) of femoral head is a pathological process that results from interruption of blood supply to the bone. AVN of the hip is poorly understood, but this process is the final common pathway of traumatic or non-traumatic factors that compromise the already precarious circulation of the femoral head. Femoral head ischemia results in the death of marrow and osteocytes and usually results in the collapse of the necrotic segment.

Avascular necrosis of the femoral head is an increasingly common cause of musculoskeletal disability, and it poses a major diagnostic and therapeutic challenge. Although patients are

initially asymptomatic, AVN of femoral head usually progresses to joint destruction. Although the pathology of AVN is not fully understood, the final common pathway is interruption of blood flow to the bone, however individual patients usually have more than one risk factor, this indicate that the pathogenesis of AVN is likely multifactorial as Vascular occlusion, altered lipid metabolism, intravascular coagulation, primary cell death, mechanical stress.^[1] Symptoms of AVN hip pain is typically the first symptom. This may lead to dull or throbbing pain in the groin or buttock area. As disease progresses, it will become more difficult to stand and put weight on affected side, and moving the hip joint will be painful. Treatment in very early stages is Core Decompression, Vascularized Fibula Graft but if osteonecrosis has advanced to femoral head collapse, the most successful treatment is Total Hip Replacement.

Avascular necrosis described in modern system of medicine that closely resemble with symptoms of *Asthi-majjagata vata*. It occurs when vitiated *vata* affect the *asthi*, *majja* at any particular place of skeleton system. When the aggravated *vata* afflicts *asthi* and *majja dhatu* it causes breaking type of continuous pain in bone, loss of muscle power and muscle tone, joint pain and disturbed sleep.^[2,3,4]

Treatment in *Ayurveda* as described by *Acharyas* both external and internal medicated oil internal in form of *basti* and *sneha pana* whereas external in form of *abhyanga* (massage)^[5] *Acharya Susruta* describe surgical treatment as when *vata* is found abstracted inside the bone, then it should be punctured with *panimantha* (thick needle) and *vata* sucked through a tube.^[6]

A case of *asthi majja gata vata* (w.s.r to AVN of hip joint) was treated as advised by *Acharya Charaka* substantial improvement was formed by administration of *shamana aushadhi* and *shodhana karma*.

CASE REPORT

A 24 year old female patient visited our hospital with complaints of continuous severe pain in hip joint. Pain was so severe that patient could not even walk properly. The gait was antalgic and patient also complained reduced appetite and disturbed sleep.

Past History: According to the patient, she was healthy before one year. Then she developed pain and stiffness in left side of hip joint gradually. The pain was constant throughout the day

and worsens at night. She consults a physician and got relief at that time, but after sometime she again develops same condition.

The patient took treatment in Safdarganj hospital, New Delhi and got mild relief. After that she also went to neurology department of Sadar hospital, Bihar to get further treatment, but didn't get relief. She also went to AIIMS hospital, New Delhi and diagnosed as necrosis of left head of femur and surgical intervention was advised but patient was reluctant and she approached OPD of Ch. Brahm Prakash Ayurved Charak Sansthan, Khera Dabar, Najafgarh, New Delhi for conservative treatment.

General examination: At the time of admission in IPD, patient was examined properly and following observation was noted.

BP-110/70mmHg

P/R-76/min, regular

Pallor- Absent

Icterus- Absent

CVS- S1 S2 Normal

Chest- B/L equal air entry, no added sound

CNS-conscious, well oriented with name, place and person.

Locomotory system- Movement of hip joint is reduced; SLR of rt. Leg is-60° and Lt. Leg is-30°, FST- is positive (B/L), non-pitting type of pedal oedema but the muscle bulk and tone are normal. She was unable to walk more after taking 50 steps.

Dashvidha pariksha

Prakriti- vata-kapha

Ahara Shakti- Madhyama

Vikriti- Vatapradhan tridosha

Vyayamshakti- Avara

Sara- Avara

jarana Shakti- Avara

Samhana- Madhyama

Satva- Madhyama

Satyama- Madhyama

Vaya- Yuva

Astavidha pariksha

Nadi- vata pradhan, sama,

Sabda- kshama

Mutra- Samanya

Sparsa- Ruksha

Mala- Baddha

Drika- Samanya

Jihva- sama

Akruti- Samanya

Investigation reports brought by patients revealed

- (1) CBC- was normal in range.
- (2) ESR- Slightly raised.
- (3) X-Ray- of hip joint show avascular necrosis of left femoral head.

Grading for assessment of disease:^[7] the condition of disease was assessed on the basis of following parameters as per grading.

Stage	Characteristic
0	Normal radiographs, bone scan, and MRI
	Normal radiographs, abnormal bone scan, & MRI
A: mild	<15% of head involvement
B: moderate	15% -30%
C: severe	>30%
	Abnormal radiograph
A: mild	<15% of head involvement
B: moderate	15% to 30%
C: severe	>30%
	Sub chondral collapse producing a crescent sign
A: mild	<15% of articular surface
B: moderate	Crescent beneath 15% to 30%
C: severe	Crescent beneath >30%
A: mild	<15% of surface collapsed and depression is <2mm
B: moderate	15%-30% collapsed or 2 to 4 mm depression
C: severe	>30% collapsed or >4 mm depression
	Joint narrowing with or without acetabular involvement
A B or C	Femoral head and estimated acetabular involvement
	Advanced degenerative changes

On the basis of above grading this patient belongs to **grade-II moderate stage** because of abnormal radiograph and more than 15% head involvement.

Treatment- The treatment of patient is designed in two steps

(A) *Shamana Aushadhies*

(B) *Panchakarma* therapy along with *yoga* and physiotherapy,

No.	Therapy	Medicine
1-	<i>Abhyanga</i>	<i>Balaswagandha tail</i>
2-	<i>Swedana (PPS)</i>	<i>Nirgundi patra</i>
3-	<i>Nirooh basti</i>	<i>Dashmool kwath</i>
4-	<i>Anuvasana basti</i>	<i>Ksheerabala tail</i>
5-	<i>Pranayam (anuloma-viloma)</i>	In morning 5 min.
6-	Physiotherapy	In morning 10 min.

Shamana Aushadhies

1- Pravala panchamrutras-250mg

Vata ganjankusa rasa-250mg

Godanti bhasma -500mg

Pippali churna -2gm

Aswagandha churna -2gm BD × 21 day

2- Kaishor guggulu -2tab TDS

3- Amrutarista -3 tsf BD

4- Rasna-erandadi kwath-40ml BD

Outcome and follow-up

Pain- Pain was graded on VAS (visual analogue scale). VAS is a uni-dimensional measure of pain intensity here 0 stand for no pain and 10 is severe pain. On the day of admission pain graded as “8” during the course of treatment the VAS scale improved gradually. At the time of discharge grading of VAS is “3”.

Swelling- At the time of admission patient has multiple joint swelling with pedal oedema circumference been around 26.8in. Due to effect of *shothhara dravyas* swelling reduced from 26.8 to 23.6 in.

Range of movement- Initially patient was unable to move 50 steps. Patient was limping due to pain but at time of discharge she starts walking more than 200 steps. It signifies improvement in range of movement.

Sr. no.	Sign and symptoms	BT		AT	
		Rt. Side	Lt. side	Rt. Side	Lt. side
1-	Flexion of hip joint	FM	RM	FM	FM
2-	Extension of hip joint	FM	RM	FM	RM
3-	Abduction of hip joint	FM	RM	FM	FM
4-	Adduction of hip joint	FM	RM	FM	FM
5-	Medial rotation	FM	RM	FM	FM
6-	Lateral rotation	FM	RM	FM	RM

FM= Free movement, RM= Restricted movement.

SLR		BT	AT
	Right leg	60°	80°
	Left leg	30°	70°

RESULT

Significant improvement in pain, swelling, range of movement and SLR was noted after the treatment.

Advice on discharge

1. *Vata ganjankusa rasa* -250mg
Godanti bhasma -500mg
Pippali churna -2gm
Muktashukti bhasma -250mg
Aswagandha churna -2gm BD × 15 days
2. *Kaisore guggulu* -2tab BD
3. *Rasna-erandadi kwath* -40ml BD

Follow-up- 15 days, during follow-up patient shows significant improvement

DISCUSSION

Avascular necrosis may affect several different bones as result temporary or permanent loss of blood supply to those bones the ischemia causes the death of eventual collapse of the bone tissue. Initially patients are asymptomatic, but in time AVN leads to joint destruction requiring surgical treatment and in latter stage Total hip replacement (THR).^[8]

The pathophysiology of AVN of femoral head has not been completely accounted for in some patients as there has clearly been a direct cause (trauma, radiation, etc.) while in other, the pathophysiology is still uncertain. AVN of femoral head is multifactorial disease. It is associated in some case with a genetic predilection as well as an exposure to certain risk factor. The most common risk factors are corticosteroid intake, alcohol, smoking, various chronic disease, patient with human immune deficiency virus are also at higher risk for the development of AVN of femoral head.^[9]

In *Ayurveda* the pathogenesis of AVN can be understood as *shrotorodha* of hip joint result in decrease blood supply to hip joint bone resulting *asthi dhatu kshya*, and *kshya* is responsible for vitiation of *vata dosha*. *Vata dosha* along with *pitta* is responsible for necrosis or cell death. Therefore, it is important to pay special attention on *vata* and *pitta dosha*.^[10]

Snehana and *swedana* is works together and induced hyperthermia and transdermal drug absorption. *Snehana* can increase blood oxygen supply to muscle and aid venous drainage.

Swedana can increase blood supply and lymphatic circulation and thereby improving local tissue metabolism.^[11] hyperthermia reduced inflammation by various inflammatory mediators.^[12]

Dashmool kwath nirooh basti, *kwath* along with *kalka* of *dashmool* was added in tail and *sneha* was prepared as per protocol.^[13] *Dashmool kwath tikta kashaya* in *rasa* and has property of *Ushna veerya*, *katu vipaka*. *Tikta rasa* has *Vayu* and *Aakash mahabhoota*. Hence it has high affinity towards body elements having same *mahabhoota* like *asthi dhathu*. *Dashmool* has anti-inflammatory analgesic and antipyretic action.^[14]

Anuvasana basti is the treatment of choice of *vata*, it promotes *Bala* of the person who is emaciated and debilitated.^[15] *Acharya Charaka* advised *Anuvasana basti* to be administered in *vatavyadhi*^[16] *ksheerabala tail* is indicated in emaciation muscle wasting lack of strength in joint disorders of muscle and bone. With these property *anuvasana basti* is highly recommended in treatment of AVN.

Pravala panchamrutra rasa balance *pitta dosha* improve *agni* provide calcium supplement to bone. *Godanti bhasma* has *Pitta* balance property and also used in emaciation and wasting. It improved strength and immunity.^[17] *Vata gajankusa rasa* cure both curable and incurable *vatik* disease. Main ingredient is *suta bhasma*, *lauha bhasma*, *maksika*, *vatsanaabh* etc. with juice of *nirgundi*. Used in the treatment of neuromuscular disordered like *sciatica*, *paralysis*, *spondylitis*, *muscle stiffness* and *cramps*.^[18] *Aswagandha churna* has property to suppressing joint pain building muscular endurance, enhance physical endurance power, and improve immunity.^[19]

Kaishor guggulu possess *shothahara* effect and *rasayana* property it favouring regeneration of bone tissue.^[20] It cure *vata*, *rakta* caused by one *dosha* or simultaneously two or three *dosha*, even if condition is chronic and associated with complication like *exudation dryness* *cracking of knee joint*.^[21]

Raasna erandadi kwath- It Calm the *vata* aggravation and manage the disease and pain due to it furthermore. *Ricinus communis* aid to expulsion of accumulated toxins from the body. This medicine used in *backache pain* in *flanks*. It relives pain and swelling, relaxes muscle, relive inflammation.^[22]

Along with above treatment the *yoga* therapy- *Anuloma-Viloma* enhances systemic oxygenation, better availability of oxygen to body tissue²³ so it helpful to increase oxygen supply to affected bone.

CONCLUSION

Based on the clinical sign and symptoms, the AVN can be correlated with *Asthi-majja gata vata*. This case show significant result in 21 days of IPD treatment, patient was able to walk more than 200 steps. Intensity of pain was also reduced so she was able to perform some of her routine work.

Though improvement was noted in this patient as in single case study. Further elaborated study including more numbers of patients may be done to the confirmatory of result.

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