

# Case Study of Avascular Necrosis of Femoral Head

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### Abstract:

Avascular necrosis is a disease in which cellular death of bone component occurs due to interruption of the blood supply. Necrosis causes due to arterial occlusion and lack or insufficient blood supply, the bone tissue dies and there occurs collapsing of that bony segment. The disease found in age of 35 to 45 yrs. Head of femur is one of the classical site of Avascular necrosis. Avascular necrosis is a progressive disorder with surgical intervention as the prime choice. If left untreated, the disease progresses, there occurs collapsing of necrotic bony segment. All the treatment procedures are cost worthy and prognosis is very poor. In present study a female patient of 38 yrs old having signs and symptoms of Avascular necrosis and X-ray of right hip showing Avascular necrosis of femoral head and palliative (*Kaishor Guggulu, Amalaki Rasayana, Chanadrabha vati, Ashwagandha* powder, cold decoction of *Hemidismus indicus & Rubia cordifolia* along with *Panchakarma* treatment such as local massage steam with *Panchtikta kshirbasti & Pindasweda* additional with Tub bath (*Avgaha sweda*) was given for 6 weeks.

Significant result was observed and there was improvement in cardinal sign & symptoms of Avascular necrosis of femoral head. It also provides noteworthy results in improving range of movements and pain intensity. Overall result of the therapy was found to be effective with no pain and limping while walking with free movements of joints. Recovery in Right hip joint was 100% whereas limping and walking difficulty were reduced up to 90% & 95% respectively.

**Key words:** Avascular necrosis, Palliative treatment, *Panchakarma*

### Introduction:

Avascular Necrosis of the Femoral Head (AVN-FH) refers to a progressive weakening of the knobby head of the thigh bone (femur), resulting in eventual collapse of the bone structure if not remedied in time. This disorder involves disrupted circulation (hence the term Avascular), leading to death (necrosis) of bone cells that maintain the solid bone matrix[1]. It is seen in children and young adults as the result of injuries and various genetic bone disorders, and it may occur later in life as the result of abuse of drugs (corticosteroids and alcohol are the main culprits) and secondary to chronic diseases that affect the vascular system [2,3]. The disorder is sometimes referred to as aseptic necrosis, meaning that it does not

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involve a bone infection. It is usually diagnosed after a person complains of pain and restricted motion of the hip, where the pain is worsened with activity and improved by rest; one or both hips can be involved; in cases other than traumatic injury, one side is affected first, and the other may develop the condition later. If left untreated, the disease progresses, the bone collapses. All the treatment procedures are cost worthy and prognosis is very poor. Prognosis of AVN may include the duration of disease, chances of complications and more factors. To overcome these factor one may choose the therapy of Indian science i.e. Ayurveda. In Ayurveda, Panchakarma (penta-purificatory procedures of Ayurveda) therapy likewise nutritive type *Panchtikta basti* (enema) and *Shati shali Pind sweda* along with palliative (*Shamana*) treatment have miraculous result which can boost the effectiveness of treatment and quality of life of patient also. It is observed that the disease progression is slow down; AVN did not worsen and was maintained. The treatment is cost effective.

#### Case report (Case presentation)

A female patient of 38 yrs old having complaint of difficulty & pain during walking, restricted movements of right hip joint, pain at right hip joint since 5-6 months, intermittent constipation. There was neither any history of trauma nor other medical or surgical illness as well as no any history of specific medications such as steroids etc. Menstrual history was also normal. Patient had taken Allopathic treatment but there was only symptomatic relief. Surgery was advised by her physician but she was not willing for surgery.



Fig.1: Radiological investigations of femur head

Therefore she came to take *Ayurveda* treatment. On examination, there was not any external abnormality, sign of any wasting of muscle, swelling or any kind of injury. Only limping of leg was found due to which freely internal rotation of right hip joint was not possible. Patient was unable to do cycling & swimming. No other systemic abnormalities were seen except there was frequent tendency of constipation in spite of taking regular diet. Bladder habit was observed normal. X-ray pelvis (both Hip joint) showed acute osteonecrosis in head of Right Femur may be ruled out clinically. (Fig.1) X-ray L.S. Spine AP/Lat indicated degenerative spondylotic changes and exaggeration of lumbar lordosis, degenerative changes were noted in the form of osteophytes. (Fig.2)

#### Materials and Methods:

##### Preparation of *Panchtikta ghrta kshira basti*:

200 ml milk medicated with *panchtikta* decoction i.e. *Guduchi* (*Tinospora cordifolia*), *Nimb* (*Azadirachta indica*), *Patola* (*Trichosanthus patola*), *Vasa* (*Adhatoda vasica*), *Kantkari* (*Solanum nigrum*) + 50 ml *Ajamansrasa* (meat soup)/ *Mahasneha* (*ghrita*, oils, *vasa*, *majja*) each 10 ml[4].

**Preparation of decoction-** *Dashmula*, *Bala* (*Sida cordifolia*), *Ashwagandha* (*Whithania somnifera*) 1 part each respectively and 4 part water, soak it well over night. Next day boil it till 2 parts of water get a hold remain [5].

Special gradation of symptoms was used for assessment of therapeutic effect which is depicted in table no.1.



Fig.2: Radiological investigations of osteophyte

**Observation & Results:**

The changes were not found in the radiological investigations. But the effectiveness of treatment were markedly observed in the sign and symptoms within 6 weeks period which is mentioned in table no.3.

Noteworthy changes are in above patient after taking above line of treatment continuously for 3 weeks. After *Panchakarma* treatments for duration of 3 wks & Palliative treatment was continued for 6 weeks. In this duration there was significant decrease in difficulty while walking. Along with this there was slightly free movements of hip joint i.e. there is less restrictions over movement of right hip joint since there was negligible pain while cycling & swimming. Significant result was observed and there was improvement in cardinal sign & symptoms of

Avascular necrosis. It also provides noteworthy results in improving range of movements and pain intensity.

**Discussion:**

Notable changes are observed in the patient of Avascular necrosis of femoral head. Radiologically lumbar lordosis decreased as comparative with that of in previous X Ray L.S. Spine. Size of osteophytes decreased but was not significant. The *Panchakarma* & palliative treatment [table no. 2] is quite effective in patient. There was difficulty while walking; now patient can freely walk without any pain. Pain in right hip joint is completely subsided by above line of treatment. There is no constipation which denotes that vitiation of *vata* is decreased.

Concerning to palliative treatment *Kaishor Guggulu* [6,7] is acts as anti allergic, anti bacterial

**Table No.1:-** Gradation of symptoms of Avascular necrosis of head of femur

Sr. No.	Sign & symptom	Gradation
<b>1</b>	<b>Difficulty in walking</b>	
	No difficulty	0
	Mild	1
	Moderate	2
	Severe	3
	Very severe	4
<b>2</b>	<b>Pain at right hip joint</b>	
	No Pain	0
	Mild	1
	Moderate	2
	Severe	3
	Very severe	4
<b>3</b>	<b>Restricted movements of right hip joint</b>	
	Excellent	0
	Good	1
	Fair	2
	Poor	3
	Failure	4
<b>4</b>	<b>Limping of leg</b>	
	Walks Normally	0
	Slightly lame when walking	1
	Moderate when walking	2
	Severely when walking	3
	Reluctant to rise and will not walk more than five paces	4

**Table No.2:-** Drug prescribed & posology

Type	Drugs	Dose	Duration
Palliative treatment	<i>Kaishor guggulu</i>	250mg	3 tabs TDS
	<i>Amalaki rasayana</i>	5 gm	BD after food with lukewarm water
	<i>Ashwagandha</i> powder	2gm	BD with Milk
	Cold decoction of <i>Sariva (Hemidismus indicus)</i> & <i>Manjishtha (Rubia cordifolia)</i>	30ml	Empty stomach twice a day (morning & evening)
	<i>Chandraprabha vati</i>	250 mg	BD before food
	<i>Sahachara</i> oil	4-4 drops	Orally with sugar thrice daily
Panchakarma treatment	Local massage with <i>narayana</i> oil	50ml	Daily for 3 weeks
	<i>Nadiswedana</i> with ( <i>Dashmula</i> + <i>Bala</i> + <i>Ashwagandha</i> ) decoction	-	10-15 min daily for 3 weeks
	<i>Avagaha sweda</i> with above decoction	-	20 min twice daily for 3 weeks
	<i>Panchtikta ghrut kshirbasti (Kalbasti regime)</i>	250 ml	Daily in morning for 16 days
	<i>Shashi Shali Pinda Sweda</i> over both lower extremities & lumber region		30-45 min daily for 3 weeks

**Table no.3:-** Effect of therapy on various symptoms of Avascular necrosis of femur head

SN	Sign & symptom	Gradation	
		Before	After (6 weeks)
1	Difficulty in walking	4	2
2	Restricted movements of right hip joint	3	2
3	Pain at right hip joint	3	1
4	Limping of leg	3	1

and having blood purifying properties. It is used to support weakened hip joint, muscle & its connective tissue. *Sariva* [8] (*Hemidismus indicus*) & *Manjishtha* [9] (*Rubia cordifolia*) improves circulation in hip joint, rejuvenates tissue & avoids further necrosis.

*Amalaki Rasayana* [10], *Ashwagandha (Whithania somnifera)* [11,12] are improves quality of *mansa dhatu* i.e. it strengthened musculature flora in pelvic region, increases strength of the muscle and other tissues. *Whithania somnifera* is having rejuvenating effect and immunomodulatory properties, antioxidant effect, anti stress effect. *Chandraprabhavati* [13] helps to strengthen lower extremities & lower body parts, having rejuvenating property, eliminates toxins from the body as it is diuretic. *Sahachara* oil [14] removes obstruction; increases blood circulation, increases nutrition to necrosed part, and activates cell regeneration in that region. Whole body massage (*Sarvanga abhyanga*) helps to bring the *dosha* from all over body to

excretory channels. It helps to pacify the *vata* all over the body. Sudation with pipe [15] i.e. steam sudation therapy helps to eliminate the waste and toxins from the body. This was carried out immediately after oil massage. Tub bath (*Avagaha sweda*) with specific decoction [16] helps for *srotoshodana* (clears all channels), increases the strength of body parts and nourishes them.

*Panshtikta kshir* i.e. milk medicated with *Guduchi (Tinospora cordifolia)*, *Nimb (Azadaricta indica)*, *Patola (Trichosanthus patola)*, *Vasa (Adhatoda vasica)*, *kantkari (Solanum nigrum)* [17] is nourishes bone tissue (*Asthi dhatu*) very well, pacify the *Vata*, nutritive, avoid degeneration of bones (*Asthi kshayarodhak*), gives nourishment to all constituents of the body (*Balya*). It avoids osteonecrosis, increase strength of muscle tissue. *Tikta Rasa* [18] is *Ampachak, Srotoshodhak*, avoids necrosis, increase healing of necrosed part, and rejuvenates tissue. The properties of *Kshir* (Milk) [19] are *Dhatupusthi, Jivaniya, Rasayana*, improve

assimilation and good source of Calcium Supplement which help in rebuilding of osteoblasts. *Ghee/Mahasneha* [20] having vitamin D & vitamin A which helps in absorption of calcium, since bone is broken by osteoclast and rebuilt by osteoblast. *Shasti Shali Pinda Sweda* [21] which is Anabolic in nature ( *Brihana*), increases healing of necrosis tissue, pacifies *vata*, induce stability & firmness in that hip joint. Three varieties of *Swedana Karma* have been utilized in the present case study- *Nadi sweda*, *Avagah sweda*, *Pind sweda* for different purposes. *Nadi sweda* is used immediately after massage (whole body) for pacify the *vata* properly. *Avagah sweda* is helps for *srotoshodana* (clears all channels), increases the strength of affected body parts and nourishes them and for the purpose of proper nourishment, the nutritive type of *sweda* i.e. *Pind sweda* is used.

The patient is having symptomatic relief from the palliative and *Panchakarma* treatment but significant changes are not found in radiological investigations except reduction in lumber lordosis & size of osteophytes. The patient would be able to walk with negligible pain; improvement in gait, constipation was relived. It means day today quality life of patient improved. *Ayurvedaa* medication confers miraculous results in handling the case of Avascular necrosis of femoral head. Progression of disease is slow down within few weeks which can said to be on the basis of observations and quality life of the patient is improved but not totally cured. Early diagnosis is very important in the case of Avascular necrosis. There is necessitating for the research work on Avascular necrosis.

### Conclusion:

Given line of treatment provided a good clinical improvement in a patient with Avascular necrosis. In *Ayurvedaa*, *Panchakarma* therapy likewise *Panchtikta Kshir Basti* and *Shashti Shali Pinda Sweda* along with palliative treatment have miraculous result which can boost the effectiveness of treatment and quality of life of patient also.

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