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Ayurveda Management of Avascular Necrosis of Femoral Head - A Case Study

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ABSTRACT

Introduction: Avascular necrosis (AVN) of femoral head is the collapse of femoral head subsequent to transient or permanent loss of blood supply to femoral head. It can be correlated with *Asthi-Majjagata Vata*. A 24 yrs old male, with complaints of severe pain in the left side hip joint along with right hip joint associated with restricted movements of bilateral hip joints aggravated since 7 months was treated with *Krimighna Vasti* followed by *Manjisthadi Ksheera Vasti*. **Aim and Objective:** To evaluate the efficacy of *Krimighna Vasti* and *Manjisthadi Ksheera Vasti* in the management of avascular necrosis of femoral head. **Methodology:** *Krimighna Vasti* for a period of 3 days followed by *Manjisthadi Ksheera Vasti* was given as *Niruha Vasti* and a combination of *Gugulu Tiktaka Ghrita* (60ml) and *Pinda Taila* (60ml) was given as *Anuvasan Vasti* in *Yoga Vasti* pattern for a period of 8 days. **Results and Discussion:** Patient was not able to walk without support with restricted movement and limping was able to walk with mild pain. And the patient also had acute bronchitis feature having symptoms of recurrent non productive cough, mild fever, headache on auscultation there was crepitation in bilateral lungs field and x-ray finding suggestive of prominent broncho vascular margin that is also diminished. *Ksheera Vasti* possibly aided in strengthening of subchondral bone of the femoral head. As it is a *Brimhana Vasti* the patient also get relieve in symptoms of bronchitis.

Key words: Avascular necrosis (AVN) of femoral head, *Asthi-Majjagata vata*, *Krimighna Vasti*, *Manjisthadi Ksheera Vasti*, *Pinda Taila*

INTRODUCTION

Avascular necrosis (AVN), is osteonecrosis (dead bone) and is also called Osteochondritis Dissecans/Chandler's Disease in young adults with 60% of the cases being bilateral. This condition is one of the most challenging problems faced by orthopedic surgeons. The objectives of the treatment include the preservation of structure, function and relief from pain.^[1] Many surgical procedures such as drilling, insertion of bone grafts, modified Whitman or Colonna reconstruction and

insertion of prosthesis are carried out to remedy this condition.

According to *Ayurveda*, AVN of femoral head can be correlated to *Asthi-Majjagata Vata* due to presence of pain in *Shakthi* and *Sandhi Shula* (deep pain in groin; often referred to ipsilateral buttock and knee), limited range of motion of hip joint, *Teevra Balakshaya*, *Asthi saushirya*, *satata ruja* (continuous pain) and *Asvapna* (insomnia due to persistent^[2]

CASE REPORT

A twenty-four year old male, approached the outpatient door of *Kayachikitsa*, All India institute of *Ayurved* with complaints of pain in bilateral hip joint, restricted movement of both hip joints since one year and aggravated since 7 months, along with recurrent dry cough. seven years back he had history of intestinal tuberculosis for which he had taken anti tubercular drugs for 6months. He also had history of encephalitis one year back. One year back, he experienced sudden sense of pain in the left hip joint along with weakness in the bilateral hip joint while climbing stairs then he

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consulted to orthopedician and advised to do x-ray which shows subchondral sclerosis of left hip joint then he was advised to do MRI, MRI finding shows changes of Avascular Necrosis (AVN) in left femoral head (stage III) and right femoral head (stage II). Moderate left synovial effusion.

Clinical Findings

General examination showed no pallor, icterus, cyanosis, clubbing, lymphadenopathy, edema, His vital signs are within limits. Range of motion was restricted to varying degrees with tenderness in both hip joints. Personal history revealed irregular bowel & bladder movement with reduced appetite and disturbed sleep.

Assessment Criteria

Harris Hip score^[3] (Table 1), Visual Analogue scale^[4] (Table 2), Depression Anxiety Scale^[5](Table 3)

Table 1: Harris Hip Score^[3]

<70	70-79	80-89	90-100
Poor	Fair	Good	Excellent

Table 2: V.A.S - Visual Analogue Scale^[4]

0	2	4	6	8	10
No Hurt	Hurts Little Bit	Hurts Little More	Hurts Even More	Hurts Whole Lot	Hurts Worst

Table 3: Depression Anxiety Stress Scale Interpretation

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extreme Severe	28+	20+	34+

Therapeutic interventions

Patient was advised to take *Amrutottara Kashaya* 30 ml BD, *Hingwastaka Churna* 3gm BD, *Haritaki Churna* 3gm BD for *Deepana* and *Pachana* effects (Table 4). As *Poorvakarma* to *Vasti* therapy; Then *Sarvanga Abhyanga* with *Pinda Taila* and *Sarvanga Swedana* with *Dashamool Kwatha* was done for 3 days along with *Krimighna Vasti* then *Yoga Vasti* is continued where *Manjisthadi Ksheera Vasti* was given as *Niruha* and *Gugulu Tiktaka Ghrita* (60ml) + *Pinda Taila* (60ml) was given as *Anuvasana* for eight days (Table 5).

Patient was advised for *Yoga Vasti* with following ingredients (Table 6).

Table 4: Shamana Chikitsa

Medicines	Dosages	Remarks
<i>Amrutottara Kashaya</i>	30ml BD before food	For 3 days
<i>Hingwastaka Churna</i>	3gm BD before food	-
<i>Haritaki Churna</i>	3gm BD after food	-

Table 5: Shodhana Chikitsa

<i>Sarvanga Abhyanga</i> with <i>Pinda Taila</i> followed by <i>Sarvanga Swedana</i> with <i>Dashamool Kwatha</i> + <i>Krimighna Vasti</i>
<i>Karma Vasti</i> - <i>Anuvasana vasti</i> with <i>Gugulu Tiktaka Ghrita</i> 60ml and <i>Pinda Taila</i> 60ml
<i>Niruha Vasti</i> with <i>Manjisthadi Ksheera Vasti</i> and <i>Gugulu Tiktaka Ghrita</i> 80ml

Table 6: Niruha Vasti ingredients

<i>Niruha Vasti</i> ingredients	Dose
<i>Makshika</i> (honey)	80ml
<i>Saindhava Lavana</i>	10gm
<i>Gugulu Tiktaka Ghrita</i>	80ml
<i>Kalka</i> - <i>Shatapushpa</i> , <i>Manjistha</i>	10gm each
<i>Kwatha</i> - <i>Manjisthadi Kwatha</i>	150 ml

Gokshira (Cow milk)	200ml
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Table 7: Krimighna Vasti ingredients

Krimighna Vasti ingredients	Dose
Makshika(honey)	80ml
Saindhava Lavana	10gm
Tila Taila	80ml
Kalka - Vindanga, Pippali	10gm each
Kwatha - Vidanga, Triphala, Musta, Shigru	150 ml

Table 8: Yoga Vasti Schedule

Vasti	Given Time	Return Time	Retention Time
Anuvasana	11am	1pm	2hrs
Anuvasana	12pm	2pm	2hrs
Niruha	12.30pm	12.45pm	15min
Anuvasana	3pm	5pm	2hrs
Niruha	2pm	2.15pm	15min
Anuvasana	11am	1pm	2hrs
Niruha	12pm	12.15pm	15min
Anuvasana	3pm	5pm	2hrs

RESULTS

Subjective and objective parameters of Harris hip score were used to evaluate the outcome of interventions in each hip joint separately (Table 9 and Table 10). There was noticeable change in the range of motion in bilateral hip joints. The quality of life in terms of daily activities improved significantly by 21 days of treatment. Patient who was not able to walk without support with restricted movement and limping was able to walk with mild pain. And the patient also had acute bronchitis feature having symptoms of recurrent non productive cough, mild fever, headache on auscultation there was crepitation in bilateral lungs

field and x-ray finding suggestive of prominent broncho vascular margin that is also diminished.

DISCUSSION

As the patient was having constipated bowel since 1 month along with reduced appetite which clearly signifies presence of *ama* in his body, so in order to combat such condition *Amapachana & Agnideepana* was done with *Amrutottar Kashaya & Hingwastak Churna, Haritaki Churna*, for *Mala Shuddhi* as well as *Srota Sodhana Krimighna Vasti* was given for 3 days as *Raktavaha Srotarodha* is the prime cause leading to *Asthi* and *Majjadhatu Kshaya*, in this patient the main complaints are pain in bilateral hip joint along with severe restricted movement of both hip joints which clearly indicated involvement of *Vata Dosa*. So, *Basti* was planned. According to *Vagbhata*, *Basti* prepared with *Ksheera, Ghrita, & Tikta Rasa Dravya* is ideal for *Asthisankshaya*.^[6] *Gugulu Tiktaka Ghrita* is selected as *Sneha Dravya* in *Niruha Vasti* as well as in *Anuvasana Basti* as it is indicated in *Sandhi Asthimajja Gata Vata*.^[7]

For *Anuvasana Basti Pinda Taila* was used along with *Gugulutiktaka Ghrita* as *Pinda Taila* is indicated in *Vatarakta* having painful condition. The regeneration phase of AVN includes destruction of subchondral bone supporting the joint cartilage (Subchondral fracture) & condensation of the cancellous bone located at the core of the femoral head. In the light of new researches proving *Basti* is having effect of stimulation of sympathetic nervous system in angiogenesis^[8] which results in proper vascularization as well as improves the circulation at the site of the necrosis causing neovascularization of the femoral head.

Table 9: Harris Hip Score of Left Hip Joint

Parameters	Before treatment	After 21 days of treatment	Follow up after 15 days
Pain	Marked pain; serious limitation of activities	Moderate pain; but makes concessions to pain, sometimes	Mild pain, no effect on average activities

		obstruct activities	
Distance walked	3 minutes	10 minutes	20 minutes
Activities: shoes, socks	Fitting with difficulty	Able to use	Able to use
Public transportation (bus)	Unable to use	Able to use	Able to use
Support	Walk with support	Walk without support	Without support
Limp	moderate	slight	slight
Stairs	Unable to climb	Able to climb with difficulty	Able to climb with ease
Sitting	Able to sit with difficulty	Can sit with slight difficulty	No difficulty during sitting
Range of motion at hip joint (in total degrees)			
Flexion	55-65	65-70	70-75
Abduction	10-15	10-15	15-20
Adduction	5-10	5-10	10-15
External Rotation	5-10	5-10	10-15
Harris hip score	39.7	63.9	73.2

Table 10: Harris Hip Score of Right Hip Joint

Parameters	Before treatment	After 21 days of treatment	Follow up after 15 days
Pain	Moderate pain	Mild pain	Mild pain
Distance walked	3minutes	10 minutes	20 minutes
Activities: shoes, socks	Fitting with difficulty	Able to use	Able to use

Public transportation (bus)	Unable to use	Able to use	Able to use
Support	Walk with support	Walk without support	Without support
Limp	moderate	slight	slight
Stairs	Unable to climb	Able to climb with difficulty	Able to climb with ease
Sitting	Able to sit with difficulty	Can sit with slight difficulty	No difficulty during sitting
Range of motion at hip joint(in total degrees)			
Flexion	40-45	45-55	55-65
Abduction	0-5	0-5	5-10
Adduction	0-5	0-5	5-10
External Rotation	5-10	5-10	5-10
Harris hip score	28.7	52.9	70.5

Table 11: Assessment of Results

Scales	Before Treatment	After Treatment	Follow Up after 15 Days
Harris Hip Score of Left	39.7	63.9	73.2
Harris Hip Score of Right	28.7	52.9	70.5
Visual Analogue scale	8	6	4
Depression	18	16	12
Anxiety	9	6	6
Stress	8	6	6

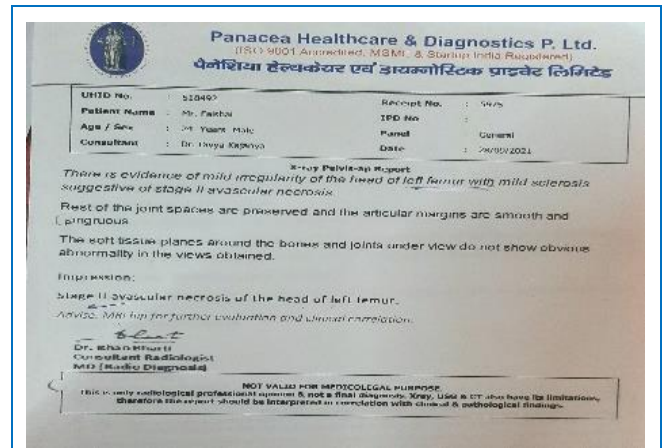
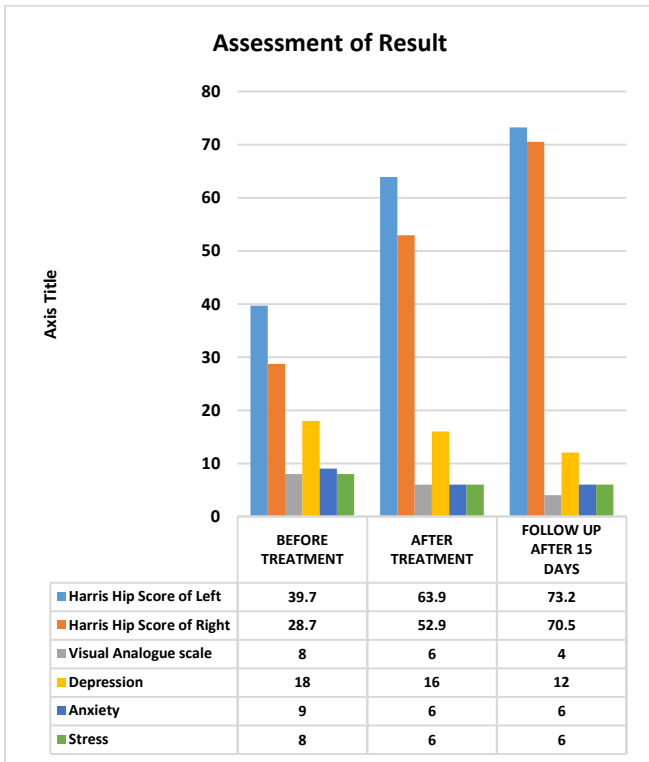


Figure 2: After Treatment

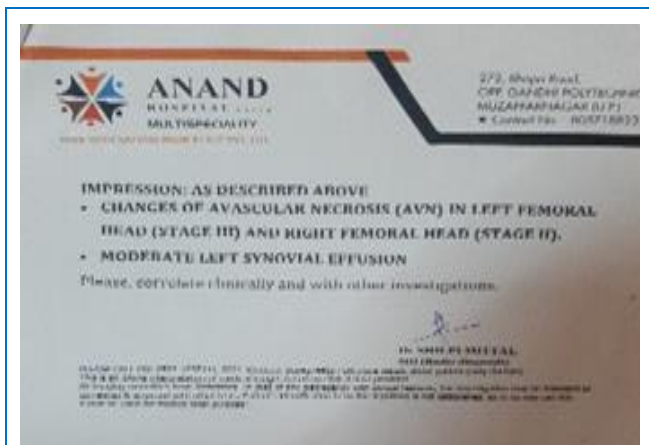


Figure 1: Before Treatment

CONCLUSION

Thus, the above medications and procedures can able to address the manifestation of Avascular necrosis. The current study provides a way for more clinical trial to evaluate the effect of *Tikta Ksheera Vasti* in the management of avascular necrosis (AVN). A good result has been obtained in this case. Informed consent was taken from the patient for this case report, this approach may be useful for clinical practices and further studies on treating post Avascular necrosis (AVN).

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