



**Case Study**

**A SUCCESSFUL MANAGEMENT OF ANKYLOSING SPONDYLITIS WITH AVASCULAR NECROSIS THROUGH AYURVEDA**

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**ABSTRACT**

This case report aimed to reveal an Ayurvedic approach to a atypical case of Ankylosing Spondylitis with bilateral avascular necrosis of femoral head. Ankylosing Spondylitis (AS) is a condition posing major challenge to health care system.

A 29-year-old male subject was diagnosed with ankylosing spondylitis and avascular necrosis of bilateral femur head. By the clinical presentation and thorough Ayurvedic examinations of the subject the case was diagnosed as *Gambheera Vatarakta* with *Asthisoushrya*. The case was successfully managed with both *Shodhana* and *Shamana Upacharas* according to Ayurveda i.e., for *Asthisoushrya*, *Khara Abhishyandi Snigdha Gunayukta Dravya Prayogam*, *Asthi Poshakam*, *Ghrita* or *Ksheera* processed with *Tikta Rasa* and *Vataraktahara Chikitsa*, *Ama Pachana*, *Rakta Prasadana*, *Sneha Virechana* and *Basti* for *Gambheera Vatarakta* was followed and significant prognosis was achieved.

**INTRODUCTION**

Ankylosing Spondylitis (AS) is characterized by inflammatory stiffening of the spine, affecting the cartilaginous joints of the spine and the sacroiliac joints. NSAIDs and Steroids are the drugs of choice in conventional systems but fail to provide a complete care. The disease more often manifests in young males than in females with the ratio of approximately 3:1 in the second or third decade.<sup>[1]</sup> Global prevalence of AS is between 0.1% and 1.4%<sup>[2]</sup> and the prevalence of AS in India is 0.03%.<sup>[3]</sup> AS is a condition that starts with the painful inflammation in the sacroiliac (SI) joints and later affects other areas of the spine. As the disease progresses, it can lead to spinal ossification, osteoporosis and altered spinal biomechanics. Eventually, the spine may become fused in a kyphotic (bent-forward) position. AS can also cause other skeletal issues, such as swelling of the fingers and toes (known as dactylitis), pain in the heels (where the

Achilles tendon attaches), and arthritis in the hips. The main symptoms of AS are inflammatory pain and morning stiffness, starting in the sacroiliac joints and spreading to the lumbar, thoracic and cervical regions. In AS, morning stiffness can last for at least an hour, but often persists for many hours. The inflammation of the SI joints and vertebral column leads to low back pain. Pain in the cervical region and thoracic spine, particularly with chest expansion, is a result of the involvement of the cervical and costovertebral joints. The inflammation of the spine coincides with the formation of syndesmophytes and the squaring of the vertebrae, which can progress to the characteristic bamboo spine. This fusion of joint bones leads to stiffness and limited mobility, which is a defining symptom of AS.<sup>[4]</sup>

Avascular Necrosis (AVN)/Osteonecrosis is a degenerative bone condition characterized by the death of cellular components of the bone secondary to an interruption of the subchondral blood supply. It is characterized by intermittent pain that appears and eases by applying and removal of pressure on the bone, increasing pain and stiffness, limited range of motion etc. Non-operative treatment in conventional system is controversial. Many patients will ultimately need a Total Hip Arthroplasty. Common post-operative

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complications for AVN includes surgical site infections, prosthesis malfunctions and neurovascular compromise. High failure rates occur as the disease continues to progress despite surgical intervention. Avascular necrosis leads to destruction of the involved joint. The etiology is multifactorial; there are idiopathic forms and secondary forms, which can be due to a variety of causes, including long-lasting corticotherapy. Recent research provided new insights into the pathogenesis of the disease.<sup>[5,6,7]</sup> Osteonecrosis can occur in any bone but the most common sites for AVN are the femoral head, knee, talus and humeral head. The hip is the most location overall.<sup>[8]</sup> AVN less commonly occurs in other bones of the body, such as carpus and jaw.<sup>[9,10]</sup> Femoral head osteonecrosis falls into two classes: traumatic and atraumatic. Of the atraumatic cases, up to 70% may be bilateral.<sup>[11]</sup>

By the clinical presentation of then patient the conditions were taken as *Gambheera Vatarakta* for AS and *Asthisoushirya* for AVN and managed accordingly.

### Case Report

A 29-years-old male patient approached the OPD of Dr. Y.Mahadeva Iyer's, Sri Sarada Ayurvedic Hospital, with complaints of pain in the bilateral hip joints, stiffness and restricted movement of the joint, difficulty in walking and swelling of bilateral ankle joints. The patient also reported pain and swelling of bilateral knee joints since from past four months. His condition worsened in the past 15 days making it difficult for him to sit for more than 10 minutes continuously, disturbed sleep, difficult to lay on supine position and the patient was unable to stand from sitting posture and to walk without support. The condition was diagnosed as rheumatoid arthritis by a physician. The patient was admitted in indoor ward for management.

### Past History and Family History

Patient was not a known case of HTN/DM or any systemic comorbidities. The patient had a history of fever 6 months back and treated locally by a physician, the above reported symptoms started after the fever episode. None of the family members of the patient were affected with the related condition before.

### Examination of the Patient

Patient weight was 65kg, pulse rate was 79/min and regular, blood pressure was

120/80mmHg, temperature was 99.6°F, and respiratory rate was 18/min. Respiratory, cardiovascular and central nervous systems did not show any abnormalities. Per abdominal examination was normal. Swelling of bilateral knee joints and bilateral ankle joints noticed. Tenderness was present at hip region with mild rise of temperature. There was significant loss in range of movements and also had limping gait. Reactive questions were negative.

**Table 1: Ayurvedic perspective of clinical assessment**

<b>Dosha</b>	<i>Vata vriddi, Kapha kshaya</i>
<b>Dushya</b>	<i>Rasa, Rakta, Mamsa, Asthi, Majja</i>
<b>Nidra</b>	Decreased (due to pain)
<b>Manas</b>	Normal
<b>Agni</b>	Normal
<b>Koshta</b>	<i>Madhyama</i>
<b>Mala</b>	Normal
<b>Mutra</b>	Normal
<b>Vyadhi Avastha</b>	<i>Chirakari</i>
<b>Vyayama</b>	Nil

### Diagnostic Investigations

- 1) RA: Negative, Anti CCP: 3.50u/ml, HBsAg: Negative, HLAB27: Positive, LFT: Normal, CRP: 71.74mg/dL, Uric Acid: 5.67mg/dL
- 2) ECHO with colour doppler: EF is 64%
- 3) Impression of MRI right knee: Mild knee joint effusion, oedema in the muscle around the knee joint.
- 4) Impression of MRI pelvis with whole spine, SI joint: Avascular necrosis of bilateral femoral heads with oedema in adjacent head, subchondral fractures in both sides. Mild bilateral hip joint effusion with mild synovial thickening-Modified Ficat Arlet stage 2 C on both sides.

**Roga Nirnaya (Diagnosis):** The case was diagnosed as Ankylosing spondylitis with Avascular Necrosis of femur head and Ayurvedically diagnosed as *Gambheera Vatarakta* with *Asthisoushirya*.

### Therapeutic Interventions

The standard protocol of *Gambheera Vatarakta* and *Asthisoushirya* was followed in this case. The plan of treatment was included both *Shodhana* and *Shamana upacharas*.

**Table 2: Shodhana Upakramas**

Days	Procedures	Medicines
1 & 2	<i>Podikizhi and Lepam</i>	<i>Kolakulattadi Choorna</i>
3	<i>Podikizhi, Lepam and Pichu</i>	<i>Kolakulattadi Choorna, Murivenna tailam + Kayatrimeni tailam</i>
4, 6, 8, 10, 11	<i>Abhyanga, Patra Pottali Sveda, Lepam, Pichu, Anuvasana vasti</i>	<i>Kolakulattadi Choorna, Murivenna tailam+Kayatrimeni tailam, Pinda tailam, Yashtimadhu tailam</i>
5, 7, 9	<i>Kashaya vasti</i>	<i>Vaitarana vasti, Erandamooladi kashaya vasti, Nyagrodhadi</i>

		<i>ksheera Kashaya vasti</i>
12 to 14	<i>Pizhichil, Lepam, Pichu</i>	<i>Pinda tailam, Kolakulattadi choorna, Murivenna tailam + Kayatrimeni tailam</i>
15 & 16	<i>Pizhichil, Lepam, Pichu, Raktamokshana</i>	<i>Pinda tailam, Kolakulattadi choorna, Murivenna tailam + Kayatrimeni tailam</i>
17 to 21	<i>Abhyanga, Navara Kizhi</i>	<i>Pinda tailam, Shashtikashali pinda</i>

**Table 3: Shamana Aushadhas**

S. No.	Medicine	Dosage
1	<i>Rasnasaptaka Kashayam</i>	60ml BD
2	<i>Dhanvantaram Kashayam</i>	60ml BD
3	<i>Lakshadi Guggulu</i>	2 - 0 - 2
4	<i>Gandha Tailam</i>	1 - 1 - 1
5	<i>Guggulu Tiktaka Ghritam</i>	10ml HS
6	<i>Dhanvantara tailam 101 avarti</i>	1 - 1 - 1

**Table 4: Follow up medications**

S. No.	Medicine	Dosage
1	<i>Nyagrodhadi Ksheera Kashayam</i>	60ml HS
2	<i>Guggulu Tiktaka Ghritam</i>	10ml HS
3	<i>Lakshadi Guggulu</i>	1 - 1 - 1
4	<i>Gandha Tailam</i>	1 - 1 - 1
5	<i>Pravala Pishti</i>	200mg BD
6	<i>Sukumara Lehyam</i>	10 grams HS

**Assessment of the Treatment****Table 5: Effects of treatment on complaints**

Parameters	Grade (Before Treatment)	Grade (After Treatment)
Pain*	10	3
<i>Stambha</i> (stiffness)	4	1
Stiffness (hours)	Persisted throughout the day	1h/day
Restricted movements	1	0

\*Assessed through VAS. VAS: Visual analogue scale

**Table 6: Assessment of quality of life**

Parameter	Before Treatment	After Treatment
<b>ASQoL questionnaire</b>	4	1
<b>ASDAS</b>	3	0
<b>BASDAI</b>	0	0
<b>BASFI</b>	2	1

ASQoL: Ankylosing Spondylitis quality of life; ASDAS: Ankylosing Spondylitis disease activity score; BASDAI: Bath ankylosing spondylitis disease activity index; BASFI: Bath ankylosing spondylitis functional index

**Table 7: Range of movements**

Range of movement	BT (in degree) Right Hip Joint	AT (in degree) Right Hip Joint	BT (in degree) Left Hip Joint	AT (in degree) Left Hip Joint
Flexion	70	100	80	110
Extension	10	25	15	25
Abduction	15 (painful)	25 (no pain)	20 (painful)	30 (no pain)
Adduction	10	25	15	25
Internal rotation	15 (painful)	20 (no pain)	20 (painful)	30 (no pain)
External rotation	15	20	25	30

BT: Before Treatment; AT: After Treatment

**DISCUSSION**

*Gambheera Vatarakta* and *Asthisoushirya* are two pathological conditions which affect multiple *Dhatus* like *Rasa, Rakta, Mamsa, Asthi* and *Majja*. Management of these conditions in modern system of medicine is limited to immunosuppressant medicines, NSAIDs and surgical interventions. In present case the Ayurvedic management showed remarkable results in reducing the symptoms as well as in improving the quality of life of the patient. The treatment protocol was based on "*Ksheera Grithair Tikta Samyuktair*".<sup>[12]</sup> In this study all the medications used for *Shodhana* and *Shamana* follows the same qualities. *Sandhaaneeya gana* <sup>[13]</sup> will play a major role in the management of these two conditions. As we know the *Vata dosha* and *Asthi* have the *Ashraya-Ashrayi* relation between them in an exclusive way. While treating, the possibility of *Vridhi-Kshaya* of *Vata dosha* may cause *Upadravas* and it should be monitored simultaneously.

**CONCLUSION**

In this case study, assessment of the treatment based on the symptoms and examinations showed remarkable improvements within 6 months. This successful Ayurvedic approach towards ankylosing spondylitis and avascular necrosis shows that alternative system like Ayurveda is the reliable choice over surgical interventions and long term NSAIDs abuse in conditions like non/poor responding AS & AVN conditions.

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