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## Ankylosing Spondylitis (~ Amavata): A Case Study

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### ABSTRACT

Ankylosing spondylitis (AS) is a multifaceted, potentially devastating disease that is insidious in onset, making progress to radiological sacroiliitis over several years. Patients with symptomatic AS drop productivity owing to work disability and redundancy has a considerable use of healthcare resources, and compact quality of life. The pathogenesis of AS is poorly understood. AS belongs to a group of rheumatic diseases known as the spondylo-arthropathies, which shows a strong connection with the hereditary marker *HLA-B27*. Immune mediated mechanisms involving human leucocyte antigen (HLA)-B27, inflammatory cellular infiltrates, cytokines, and genetic and environmental factors are considerable to have key roles. The detection of sacroiliitis by radiography, magnetic resonance imaging, or computed tomography in the presence of clinical manifestations is indicative for AS, although the presence of inflammatory back pain plus at least two other characteristic features of spondyloarthropathy (for example, enthesitis and uveitis) is highly predictive of early AS. Non-steroidal anti-inflammatory drugs (NSAIDs) plays the major role in the treatment of this situation; however, they have serious adverse effects and have limitations for an extended therapy. Hence, there is a need for drugs having good efficacy with low toxicity in this devastating disorder. From the Ayurvedic perspective, the disease can fall under *amavata*, which may be successfully managed when intervention is started in its early stages. The whole management includes Deepan, Pachan and Vatanuloman described in the chikitsa sutra of Amavata. Shamana treatment with *aamavatari rasa*, *rasonpind*, *sanjeevanivati*, *rasnasaptakakwatha* and *Simhanadaguggulu* has been found useful in restriction its progression. This article presents a solitary case report in which these treatments achieved significant success.

### KEYWORDS

Amavata, Ankylosing Spondylitis, *HLA B27*



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## INTRODUCTION

AS is a complex and devastating disease with a worldwide occurrence ranging up to 0.9%<sup>[1]</sup>. Its etiology and pathogenesis are not however fully understood, and its diagnosis is difficult. The clinical features of AS include asymmetrical peripheral oligoarthritis, inflammatory back pain, enthesitis, and specific organ involvement, such as anterior uveitis, psoriasis, and chronic IBD?<sup>[2]</sup>. Its major clinical features include sacroilitis, loss of spinal mobility, and inflammation. Chronic inflammation leads to ossification and fibrosis, where bridging spurs of bone known as syndesmophytes appear, mainly at the boundaries of the intervertebral discs, producing the ankylosing<sup>[3]</sup>.

Modified New York criteria 1984 for ankylosing spondylitis<sup>[4]</sup>.

### Clinical criteria

- i) Low back pain and stiffness for longer than 3 months, which improve with exercise but are not relieved by rest.
- ii) Limitation of motion of the lumbar spine in both the sagittal and frontal planes.
- iii) Limitation of chest expansion relative to normal values correlated for age and sex.

### Radiological criterion

Sacroilitis grade  $\geq 2$  bilateral, or grade 3-4 unilateral.

For definite ankylosing spondylitis the radiological criterion and at least one clinical criterion must be satisfied.

In contemporary medicine, AS is a chronic, systemic, inflammatory, rheumatic disorder of uncertain etiology affecting the axial skeleton initially<sup>[5, 6]</sup>. It typically starts in the late teens and early twenties and can lead to progressive bony fusion of the sacroiliac joints and the vertebral column; a number of patients may also show extra-articular manifestations<sup>[5]</sup>. In modern medication, long-term use of nonsteroidal anti-inflammatory drugs (NSAIDs) and a life-long plan of appropriate regular exercises has been the basis of symptom control for almost six decades. Established disease-modifying anti-rheumatic drugs (DMARDs) used for rheumatoid arthritis (RA) is ineffective in the typical AS patient with illness limited to the axial skeleton, including hip and shoulder joints<sup>[7]</sup>.

Regimented Ayurvedic intervention in the early stages of the disease can be highly beneficial in preventing further progression of the illness can be prevented. Here I



present the case of a 26-year-old male patient, whose early diagnosis of AS showed successful result according to Ayurvedic principles. Though, at first bed-ridden due to severe pain, he returned to normal life. AS can be correlated with amavata as per Ayurvedic principles and views. Amavata is a chronic systemic disorder with painful involvement of multiple joints. In Ayurveda, Madhavakar (700AD) mentioned first the Amavata as an extraordinary disease and where Ama (bio toxin) as well as Vata (biophysical force) plays a chief role in the samprapti (pathogenesis) of the disease Amavata.

Till date appropriate treatment of this disease is not available in the contemporary medicine. Amavata is the most remarkable trouble in the society in recent times. Ayurvedic drugs like Amavata rasa, rasonapindavati, sanjeevinivati, eranda tail, Simhnadguggulu, etc.; shows relatively better results over the allopathic drugs. This single case study also shows the better results in providing a better quality of life with negligible side effect.

## CASE HISTORY

A 26-year-old male patient, who was healthy one and a half years before, developed low backache, chiefly on the left

side, which gradually worsened over day by day. After few days he was not capable to get out of bed, and was taken to an orthopedic specialist who diagnosed sciatica. He was treated accordingly for a week, following which he developed both fever and pain in bilateral knee and shoulder joints. He was then referred to Rheumatology OPD of BHU for further evaluation. After systematic examination, he was diagnosed as having ankylosing spondylitis. He discharged himself against medical advice due to no improvement from modern treatment and came to OPD No.23 of Kayachikitsa Department with following complaints: severe pain in both the low back and bilateral knee joints, morning stiffness for more than 1 hour, and headache. His low backache radiated to the left lowerlimb. It was more in the period of morning and evening hours, subsiding in the middle of the day. There was no history of other constitutional features like abdominal pain, vomiting, or skin rashes, nor of trauma or other major surgical or medical conditions. The patient's appetite was greatly reduced and accompanied with constipation. Urine was passed with no difficulty or burning sensation, but sleep was distressed by the combination of pain and fever.



## FAMILY HISTORY

The patient's family had a history of polyarthritis. His 37-year-old uncle was suffering from AS, while his 61-year-old grandfather had been under management for Rheumatoid arthritis for twenty years. The patient was prescribed the following medications: Indomethacin 75 mg twice a day, and Prednisolone 60 mg once daily, Rabeprazole, 20 mg twice a day

## EXAMINATIONS:

Vitals – pulse 86/min, regular, full volume, BP 130/82 mmHg (right arm sitting), temperature 99.4°F (oral, 8.30 am), and respiratory rate – 22/min. The nervous system, cardio-vascular system, and respiratory system were within normal limits (WNL).

Per abdomen examination was normal.

Spine– Scoliosis was observed in the thoracolumbar area towards left, lumbar lordosis obliterated, and tenderness over L3, L4, L5 region, also tenderness over bilateral sacroiliac joints. Other joints – there was temperature, swelling, and tenderness over bilateral knee joints and tenderness in the left hip. Activities were restricted and painful. SLR (straight leg raising test) was positive on left. The investigations had the following findings.

1. ASO (IU/ml): 41.10 (Reference range: <200 IU/ml),
  2. CRP (mg/l): 114.00, (Reference range : <10 mg/l),
  3. Serum Calcium (mg/dl):- 9.60 (Reference range: 8.9-10.3 mg/dl),
  4. Vitamin B-12 (pg. /dl):- 118.00 (Reference range: 211-911 pg /dl),
  5. Blood Hb 10.6 g/dl,
  6. TLC 10,300.
  7. DLC: N 79%, L 18%, E 2%, B 01%.
  8. RBS 110 mg/dl,
  9. CPK 138 U/L,
  10. Serum Creatinine 1.0mg/dl.
  11. Human leukocyte antigen (HLA) – B27 by flow cytometry – **Positive**.
  12. HLA B27 by PCR (polymerase chain reaction) – **Detected**.
  13. Urine examination was within normal limit.
  14. X-ray LS spine revealed bilateral sacroilitis (grade 2) and obliteration of lumbar lordosis.
  15. MRI lumbar spine revealed altered marrow signal (hypo-intense on T1 and hyper-intense on T2 weighted MRI) involving left sacral ala and iliac bones adjacent to sacro-iliac joints indicating bilateral sacroilitis, more on the left.
- The patient was systematically analyzed according to Ayurvedic norms, from which,



by applying the technique of exclusion, he was diagnosed as having Amavata<sup>[8]</sup> and a management approach was formulated. The *vyadhi* was considered *yapya*<sup>[9]</sup>. The patient's parents were therefore counseled about the nature of the illness and treatment was then begun.

## AYURVEDIC TREATMENTS:

### 1. Combination form of following drugs

#### A) Amavatari rasa<sup>10</sup>

Dose and Duration- 250 mg twice in a day with honey.

#### B) Mahavavatvidhwansan rasa<sup>11</sup>

Dose and Duration- 125 mg twice in a day with honey.

#### C) Godanti<sup>12</sup>

Dose and Duration- 500 mg twice in a day with honey.

#### D) Praval Pisthi<sup>13</sup>

Dose and Duration-250 mg. twice in a day with honey.

#### E) Sameerpannaga rasa<sup>14</sup>

Dose and duration- 125 mg twice in a day with honey .

#### F) Abrhaka bhasma<sup>15</sup>

Dose and Duration-125 mg twice in a day with honey.

### 2. Sanjeevani vati-<sup>16</sup>

Dose and Duration- 250 mg twice in a day with Honey.

### 3. Rasonpinda vati-<sup>17</sup>

Dose and Duration- 250 mg twice in a day with honey

### 4. Simhnad Guggulu<sup>18</sup>

Dose and Duration -250 mg thrice in a day

### 5. Rasnasaptakkwatha<sup>19</sup>

Dose and Duration- 40 ml twice in a day

6. An Ayurvedic Analgesic oil (**Mahavishgarba tail**) for local application thrice in a day.

## OBSERVATIONS AND RESULTS

After 15 days treatment with the above mentioned drugs, patient got symptomatic relief in his complaints and so he was discharged from IPD and advised to come in the OPD at the interval of one month.

1) FIRST FOLLOW-UP:- After 1 month: -

Improvement was seen in the earlier complaints of hip joint pain but new complaints of pain and swelling with morning stiffness in the left knee joint (since 20 days), pricking pain in left leg (on and off), pain in right knee joint with stiffness, developed. So he was prescribed the following drugs:-

1.

#### A) Amavatari rasa-

Dose and Duration-250 mg twice in a day with honey for 30 days.

#### B) Mahavavatvidhwansan rasa-



Dose and Duration- 125 mg twice in a day with honey for 30 days.

### C) Godanti-

Dose and Duration- 500 mg twice in a day with honey for 30 days.

### D) PravalPisthi-

Dose and Duration-250 mg. twice in a day with honey for 30 days

### E) Sameerpannaga rasa

Dose and duration- 125 mg twice in a day with honey for 30 days.

### F) Amrita satwa

Dose and Duration-500 mg twice in a day with honey for 30 days

### G) Suddhakupilu

Dose and Duration-60 mg twice in a day with honey for 30 days

NOTE: The above drugs were given in the combination form.

### 2. Sanjeevanivati-

Dose and Duration- 250 mg twice in a day with honey for 30 days

### 3. Rasonpindavati-

Dose and Duration- 250 mg twice in a day with honey for 30 days.

### 4. Simhnadguggulu –

Dose and Duration -250 mg thrice in a day with honey for 30 days

### 5. Rarnasaptakkwatha-

Dose and Duration- 40 ml twice in a day for 45 days.

6. An Ayurvedic analgesic ((Mahavishgarba tail) oil for local application thrice in a day for 45 days.

7. Calcium supplementation as prescribed by Rheumatology for one month.

2) SECOND FOLLOW-UP:-After 1 month Improvement in the preceding complaints of swelling and morning stiffness of left knee joint, pricking pain in left leg (on and off), hip joint ain, pain in right knee joint (65% improvements as per the patient) and so same treatment was continued for next one month.

3) THIRD FOLLOWS-UP; - After 1 month-Improvement (80% as per the patient) in the earlier complaints and no any considerable fresh complaint was found and same treatments continued for next 1 month.

## DISCUSSION

AS belongs to a set of rheumatic diseases known as spondyloarthropathies (SpA), which have a strong involvement with genetic marker HLA-B27.<sup>[20,21]</sup> AS usually develops in the second or third decade of life,<sup>[21]</sup> affecting young men more commonly than young women, the estimated male to female ratio 2.5 to 5:1<sup>[22]</sup>. The sacroiliac and hip joints are mainly affected and the cervical spine is involved late in the disease. Other joints that may be implicated



include the shoulders, elbows, ankles, wrists, and small joints of the hands or feet. Morning stiffness and nocturnal back pain are hallmarks. Constitutional features (e.g., fever, anorexia, weight loss) are not rare at the onset. With progressive axial involvement, pain and stiffness result in difficulty in walking and other every day actions.

LS spine X-ray can reveal sacroiliitis.<sup>[22]</sup> Axial radiographic findings also contain marginal bridging syndesmophytes, interapophyseal joint fusion, and “squaring” of lumbar and thoracic vertebrae, together producing the model appearance of a “bamboo spine.” Clinical course and disease severity are highly changeable. Prolonged incidence of the disease leads to ankylosis of the spine leading to kyphosis and other spinal abnormalities. Patients with AS are at risk of complications, some of which may be life-threatening like restrictive lung disease,<sup>[23]</sup> post-traumatic intervertebral fractures, cauda-equina syndrome, osteoporotic compression fractures, or spondylodiscitis.<sup>[24,25]</sup> The differential diagnosis for such a presentation includes collagen vascular diseases like RA, SLE, and also rheumatic fever.<sup>[20]</sup>

The primary step in initializing Ayurvedic management is to arrive at as precise a

diagnosis as possible based on its principles<sup>[26]</sup> rather than building an open correlation of Ayurveda’s classification of vyadhis with those of recent medicine, it is always better to formulate an Ayurvedic diagnosis with the presenting features of the particular patient. In this case, the patient had *Kateeshola*(low back pain),*Ruja* in *janu* and *amsasandhis*(pain in knee and shoulder joints), *Sophainjanusandhis* (swelling in knee joints), *Jwara*(fever), *Alasya* (lethargy), *Sthamba* (stiffness of body parts and joints), and *Gourava* (heaviness) *Aruchi* (loss of appetite), *Vibandha* (constipation),<sup>[26,27]</sup>

The pathologies considered for differential diagnosis within the Ayurvedic pattern included *Jwara*, *Amavata*, *Vatarakta*, and *Gridrasi*.<sup>[26,27]</sup> Some of the presentations bore a similarity to *vatarakta*, but that was excluded by the lack of specific features of *rakta* (blood) involvement like *kandu* (itching) *vaivarnya* (discoloration of skin), and involvement of small joints of hands and feet. *Gridrasi* was similarly excluded by the patient having other dissimilar features like *jwara*, *vibanda*, and pain in knee and shoulder joints. The patient had features of *ama*<sup>[26]</sup> (undigested toxic matter) in his body: *jwara* (fever), *alasya* (lethargy), *gour*



*ava* (heaviness), *sopha* (swelling), *vibanda* (constipation), and *aruchi* (loss of appetite). Along with this was the pain in *kati* (low back) and other *sandhis* (joints), all pointing toward the diagnosis of *amavata*.<sup>[27]</sup>

In the pathogenesis of Amavata, important components are Ama and Vata. As per Ayurveda, no disease occurs without impairment of Agni. So the important issue is the Chikitsa of Ama linked with vitiated Vata and the Chikitsa of Mandagni. The drugs used here in the management of Amavata have properties of Amapachak, Vatasamak and Agnideepan. Sanjeeviniivatiimproves the Mandagni and provide relief in pain, because of its ingredient i.e. Bhallatak is very effective for Agnivardhan (CharakChikitsa 1/3/19). Amavatari rasa pacify the Ama along with vitiated Vata. Godantibhasma has anti-inflammatory and antipyretic properties so it provides relief in fever, pain and joint swelling. Rasonpind, Mahavataavidwasan rasa pacify the vitiated Vata, Rasnasaptakkwatha also pacify the aggravated Vata and so works as Vednasamak because of its main ingredient i.e. Rasna (Charak sutra 25/40). SimhnadGuggulu and MahayograjGuggulu are indicated in the chikitsa of Amavata. The main ingredient of SimhnadGuggulu is

Erand tail which is very effective in the treatment of Amavata.

In the pathogenesis of AS, there is contribution of 5 genes (IL23R, PTER4, IL12B, CARD9 and TYK2). These 5 genes are also concerned in the pathogenesis of inflammatory bowel disease (IBD), since the patient of IBD complaints for fever, altered bowel habit, etc. and the Ayurvedic drugs, used here, enhance the Mandagni and subsides the inflammation so reduce the formation of Ama and hence improves the changed bowel habits.

Since in the modern the management of Amavata (AS/RA) is mainly done with the NSAIDs and Immunosuppressive, these drugs have countless side-effect and long term complications. NSAIDs cause ulceration of gastric mucosa, hepatotoxicity, nephrotoxicity etc. Immunosuppressive drugs put forward more chances of opportunistic infection. Such types of side-effects are negligible with the Ayurvedic drugs which are used here. So Ayurveda provides better alternative for the management of the Amavata over the allopathic drugs in respect to the side effect, frequency of the recurrence of Amavata.



## CONCLUSION

This case highlights the fact that confidence can be found in Ayurvedic management principles even in cases where contemporary medicine's prediction is poor. The patient was diagnosed in Ayurvedic terms and managed therefore. On this basis, the *vyadhi* was identified as being *yapya*, and treatment was planned accordingly. While the assert cannot be prepared that the patient is completely cured of the illness, as at the present he is symptomatically normal, which in the context of modern medicine is tantamount to returned to health, though this is not true in Ayurveda. Furthermore, according to Ayurveda, future exacerbation and reversion can be prevented by appropriate diet and continuing medication. Further clinical studies should be done to confirm the treatment principles applied in this case.



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