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Case report

Ayurvedic approach for management of ankylosing spondylitis: A case report

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ABSTRACT

Ankylosing spondylitis (AS) is a rheumatic disease with various skeletal and extra skeletal manifestations. No satisfactory treatment is available in modern medicine for this disorder. Various *Panchakarma* procedures and Ayurvedic drugs have been proved useful for these manifestations. We present a case of AS, which was treated for two months with a combination of *Panchakarma* procedures and Ayurvedic drugs. Ayurvedic treatments, in this case, were directed toward alleviating symptoms and to reduce severe disability. The patient was considered suffering from *Asthimajja gata vata* (~Vata disorder involving bone and bone marrow) and was treated with *Shalishastika Pinda Svedana* (sudation with medicated cooked bolus of rice) for one month and *Mustadi Yapana Basti* (enema with medicated milk) with *Anuvāsana* (enema with *Asvagandha* oil) in 30 days schedule along with oral Ayurvedic drugs for two months. *Pratimarsha nasya* (nasal drops) with *Anu Taila* (oil) for one month was given after completion of *Basti* procedure. Patient's condition was assessed for symptoms of *Asthimajja gata vata* and core sets of Assessment of Spondylo Arthritis International Society showed substantial improvement. This study shows the cases of AS may be successfully managed with Ayurvedic treatment.

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1. Introduction

Ankylosing spondylitis (AS) is a chronic inflammatory disorder that primarily involves the sacroiliac joints and the axial skeleton. There is also a variable involvement of peripheral joints and articular structures. Musculoskeletal pain, stiffness, and immobility of spine due to AS is a major burden. Prevalence of AS in India is 0.03% as per surveys conducted by Bone and Joint Decade India from 2004 to 2010 [1]. Unavailability of satisfactory treatment in bio-medicine leads to permanent deformity in this disease. There is a need to search satisfactory treatment available in other medical system. A patient with AS was treated with Ayurvedic management of *Ama-vata* [2]. The manifestation of *Vata Vyadhi* (different disease due to *Vata dosha*) is prominent in fully established AS. In AS; the enthesal fibrocartilage is the major target of the immune system, and there may be destructive synovitis. The myxoid subchondral bone

marrow is mainly affected. There is the destruction of nearby articular tissues or joint tissues as disease progresses. The new and original cartilages are replaced by bone through fusion. This causes fusion of the joint bones that causes stiffness and immobility. This fusion leads to bamboo spine formation, a hallmark of AS. Ayurveda interprets these changes as vitiated *Vata dosha* that affect *Asthi dhathu* (bones). We present a case that was successfully treated on the line of Ayurvedic management of *Asthimajja gata vata* (~Vata disorder involving bone and bone marrow).

2. Presenting complains

A 34-year-old Indian, married, nonsmoking, nonalcoholic male consulted in Out-Patient Department of National Institute of Ayurveda, Jaipur for a complaint of gradually progressive lower back pain along with stiffening and deformity of the spine and hip since last 17 years. The case was subsequently admitted to the male *Panchakarma* ward of National Institute of Ayurveda, Jaipur on March-10, 2015 for the administration of *Panchakarma* procedures. None of the family members had a history of AS. For a long time, the case was on self-medication and taking tablet diclofenac sodium—75 mg when needed for pain relieving.

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3. Clinical findings

The patient had several episodes of lower back pain which woke him at night, followed by spinal stiffness in the morning. The patient also had pain and stiffness in the bilateral shoulder, hip, knee, and ankle joints. Swelling in the left knee joint was reported. Neck movements were restricted, and both upper limbs had a movement range up to 45°. Past medical history of the patient was remarkable for AS (Table 1). This patient was an established AS case. On examination, the patient was found to be anxious with disturbed sleep, had a moderate appetite, *Vishmagni* (unstable digestive functions), *Krura Kostha* (bowel hard to purgate) with normal micturition. The tongue was clean, the voice was clear, and skin roughness was prominent. Patient had *Vatapitta prakriti* with *Madhyam* (medium) *Sara* (purest body tissue), *Madhyam Samhanana* (medium body built), *Sama Pramana* (normal body proportion), *Madhyam Satmya* (homologation), *Madhyam Satva* (mental strength), *Avara Vyayamshakti* (least capability to carry on physical activities), *Madhyam Aharshakti* and *Jaranshakti* (medium food intake and digestive power). *Asthivaha Srotodusti* (pathology in bone) and *Majjavaha srotodusti* (pathology in bone marrow) were more prominent. The examination also revealed kyphosis, stooping forward position of the neck and flexion deformity of both hip joints. There was a loss of lateral and anterior flexions of lumbar spine and tenderness over the sacroiliac joint. Chest expansion was 2.4 cm, and Schober's test was positive. X-ray of vertebral column showed a complete fusion of vertebral bodies and other associated areas were also ossified which produced a characteristic bamboo spine appearance. Scoliosis of the dorsal spine with convexity towards right side was seen. X-ray of hip joints revealed bilateral sacroiliitis of both sacroiliac joints. Baseline hematological investigation was done on March 12, 2015, which revealed hemoglobin (Hb) – 11.6 g%, total leukocyte count – 6700th/ μ L, erythrocyte sedimentation rate (ESR) – 75 mm/h and C-reactive protein was positive. The human leukocyte antigen (HLA) typing was previously done on March 21, 2003, that was positive for HLA B27.

4. Diagnostic focus and assessment

The patient had complained of continuous joints pain, kyphosis, scoliosis, limping, fatigue, weight loss, and severely disturbed sleep.

These symptoms can be compared with symptoms of *Asthimajja gata vata* as *Asthibheda* (stabbing pains in bones), *Parva bheda* (pain in joints of fingers) *Sandhishoola* (pain in joints), *Mamsa kshaya* (depletion of muscular tissue) and *Bala kshaya* (decreased vitality and strength), *Aswapana* (sleeplessness) and *Satataruka* (continuous pain) are the manifestation of *Asthimajja gata vata* [3]. *Adhyasthi* (Fusion of syndesmophytes) is the manifestation of *Asthipradoshavikara* (Diseases of bones) [4]. *Vinamata* (bending of the body as kyphosis) is the manifestation of *Majjavritavata* [5]. *Amavata* and *Vatarakta* (~various diseases of the rheumatic spectrum) was the differential diagnosis in the case. The patient was in *Niramavastha* (stage of disease without *Ama*) condition with apparently normal appetite and no *Rakta Dusti* (vitiation of blood) and *Purvaroop* (prodromal symptoms) of *Vatarakta* was evident, thus patient considered to suffer from *Nirama Vata Vyadhi* (*Vata* disease without *Ama*). As the disease had become deep-seated showing the features of *Asthimajja gata vata*, thus it was considered as Ayurvedic diagnosis for the case.

5. Therapeutic focus and assessment

Snehana (oleation), *Svedana* (sudation), and *Mridu Virechana* (mild purgation) are the line of treatment in *Nirama Vata Vyadhi* as indicated in *Charaka Samhita*. *Tiktadi Kshira Basti* is also indicated for any bone pathology in *Charaka Samhita*. At the beginning of treatment, the patient was in *Niramavastha* condition, and his appetite was apparently normal. In the case, *Mridu Virechana* with castor oil was given in the dose of 20 ml with milk for the first three consecutive nights before starting of *Basti* procedure. After *Mridu Virechana*, the patient was treated with *Shalishastika Pinda Svedana* (sudation with medicated cooked bolus of rice) for one month and *Mustadi Yapana Basti* (enema with medicated milk) with *Anuvasana* (enema with medicated oil) of *Ashvagandha* oil as *Karma Basti* (a 30 days schedule) along with combination of oral Ayurvedic drugs – *Rasrajrasa* – 100 mg, *Triyodashanga Guggulu* – 1 g, *Ashvagandha churna* (powder of *Withania somnifera*) – 3 g, *Eranda moola churna* (powder of *Ricinus communis* L.) – 2 g and *Chausatha Prahari Pippali churna* (processed powder of *Piper longum* L.) – 500 mg twice a day for two months. After completion of these *Panchakarma* procedures, the patient was discharged on April 13, 2015. At the time of discharge, the patient was advised to continue oral treatment and

Table 1
Timeline of the case.

| Year | Clinical events and intervention |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1998 | Onset of lower backache |
| 2003 | Diagnosed for ankylosing spondylitis. (HLA-B27 – positive. ESR – 55 mm/h, X-ray pelvis, and spine revealed bilateral sacroiliitis, hematological, biochemical reports were normal) |
| 2004 | Patient underwent for naturopathy treatment for 2 months |
| 2004–2008 | Patient had no major illness, was not under any medical supervision |
| 2009 | The condition of patient worsening, X-ray revealed osteoarthritic changes with marginal sclerosis and mildly reduced hip joint space, destruction of SI joint margins with widened SI joint spaces. He was treated with <i>Panchakarma</i> for 2–3 months, symptoms relieved |
| 2010–2014 | The patient was not under any medical supervision. He self-medicated with diclofenac sodium – 75 mg when needed |
| 10/3/2015 | Patient was admitted in I.P.D. for agonizing pain and severely restricted spinal movements |
| 10/03/2015–12/03/2015 | Castor oil was given at night for mild purgation |
| 12/03/15 | Hematological investigations were done (Hb – 11.6 g%, TLC – 6700th/ μ L, ESR – 75 mm/h and CRP-was positive) |
| 13/03/2015–11/04/2015 | <i>Shalishastika Pinda Svedana</i> and <i>Mustadi Yapana Basti</i> alternated with <i>Anuvasana</i> of <i>Ashvagandha</i> oil along with Ayurvedic oral drugs such as <i>Rasrajrasa</i> , <i>Triyodashanga Guggulu</i> , <i>Asvagandha churna</i> , <i>Eranda mool churna</i> and <i>Chausath Prahari Pippali churna</i> . Ayurvedic oral medication is continued to till date |
| 08/04/2015 | Hematological parameters were reinvestigated (Hb – 11.3 g%, ESR – 45 mm/h) |
| 13/04/2015 | Patient was discharged from I.P.D. (BASDAI – 4.9, BASFI – 6.1, BASMI – 6.5) |
| 13/04/2015–12/05/2015 | <i>Pratimarshya nasya</i> was given in dose of 2 drops/nostril twice in a day along with Ayurvedic oral drugs |
| 16/05/2015 | Hematological investigations were repeated, and assessment for clinical improvement was done (Hb – 13.0% and ESR 20 mm/h, BASDAI – 3.5, BASFI – 4.8, BASMI – 5.4) |
| September-2015 | Patient condition is stable with slight improvement in pain and spinal mobility (BASDAI – 3.8, BASFI – 4.3, and BASMI – 5.1) |

HLA = Human leukocyte antigen, ESR = Erythrocyte sedimentation rate, SI = Sacroiliac, Hb = Hemoglobin, TLC = Total lymphocyte count, CRP = C-reactive protein, BASDAI = Bath Ankylosing Spondylitis Disease Activity Index, BASFI = Bath Ankylosing Spondylitis Functional Index, BASMI = Bath Ankylosing Spondylitis Metrology Index.

Table 2

Ayurvedic management of the case of ankylosing spondylitis.

| Intervention | Details of intervention | Dose | Anupana | Treatment duration |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------|
| Oral medication | | | | |
| Rasrajrasa | Rasasindura, Au, Ag, Abhraka, Vanga, Lauha, Hg, S | 100 mg twice a day | Honey | 2 months |
| Ashvagandha churna | | 3 g twice a day | Milk | 2 months |
| Eranda moola churna | | 2 g twice a day | Milk | 2 months |
| Chausatha Prahari Pippali churna | | 500 mg twice a day | Honey | 2 months |
| Triyodashanga Guggulu | | 1 g twice a day | | 2 months |
| Panchakarma procedures | Method of preparation | Method of administration | Treatment duration | |
| Shalishastika Pinda Svedana | A bolus of rice boiled in milk and Bala Kwatha | Massage with Ashwagandha oil was done on the whole body for 15 min followed by whole body massage for 45 min with the help of a cotton bag filled with bolus of processed rice | 1 month | |
| Ashwagandha oil Anuvasana Basti | 75 ml of oil mixed with rock salt | Given after meal with Basti Yantra | Total 18 Basti in Karma Basti manner | |
| Mustadi Yapana Basti | Saindhava salt 5 g, honey 25 g, Ashwagandha oil 50 ml, Panchatikta Ghrita 25 ml and milk processed with Mustadi Yapana Basti, Kwath drugs 300 ml and soup of goat femur bone marrow 50 ml | Given with Basti Yantra before meal | Total 12 Basti in Karma Basti manner | |
| Pratimarsha Nasya with Anu Taila | | | 1 month after completion of Basti procedure | |

Pratimarsha nasya (a type of Ayurvedic nasal therapy) with Anu Taila (oil) in dose of 2 drops/nostril twice a day for next 1 month (Tables 1 and 2).

No concomitant allopathic medication was given during this whole treatment period. For assessment, symptoms of Asthimajja gata vata and core sets of Assessment of Spondylo Arthritis international Society were used [6].

6. Follow up and outcomes

Hematological parameters were reinvestigated on April 08, 2015. At this time, Hb was 11.3 g% and ESR was changed to 45 mm/h. The patient was re-examined, and hematological investigations were repeated on May 16, 2015 that revealed Hb 13.0% and ESR 20 mm/h. The Very good response was noted on various parameters in this case (Table 3). Spinal mobility, stiffness, fatigue, pain, and acute phase reactants (ESR) were reduced after treatment. There was an improvement in functional capacity and global condition of

the patient. Moderate improvement in enthesitis was found, and kyphosis was reduced. The patient had improved physical strength, and 2.7 kg body weight was increased during the treatment. The patient had both upper limbs movement range up to 90° and neck movement up to 75° in the left side and up to 60° in the right side.

7. Discussion

The case was treated on the line of management of Asthimajja gata vata. Castor oil which was given for 3 days has Mridu virechana (mild purgation) property, thus employed before Basti procedure for proper evacuation of bowel [7]. Snehana, Svedana, Panchakarma procedures, uses of Basti, uses of milk, and Ghrita processed with Tikta Rasa are indicated for bone pathology [8]. Foods and drugs having sweet and bitter properties are indicated in Majja-pradoshaja (disease occurring in vitiated bone marrow) diseases. Mustadi Yapana Basti is a combination of drugs, which are having Tikta and Madhura Rasa (bitter and sweet taste) dominance.

Table 3

BT and AT comparison in case of ankylosing spondylitis.

| Domain | Instrument | BT | AT | Percentage relief |
|----------------------------|------------------------|---------|---------|-------------------|
| Function | BASFI | 9.4 | 4.8 | 48.9 |
| Pain | NRS | 10 | 3 | 70 |
| Spinal mobility | BASMI | 8.7 | 5.4 | 37.94 |
| Patient global | NRS | 9 | 3 | 66.67 |
| Affected peripheral joints | Peripheral joint count | 14 | 0 | |
| Enthesitis | MASES | 9 | 3 | |
| Stiffness | NRS | 10 | 4 | 60 |
| Acute phase reactants | ESR | 75 mm/h | 20 mm/h | 73.33 |
| Fatigue | BASDAI | 8.7 | 3.5 | 59.77 |

BASDAI = Bath Ankylosing Spondylitis Disease Activity Index, BASFI = Bath Ankylosing Spondylitis Functional Index, BASMI = Bath Ankylosing Spondylitis Metrology Index, MASES = Maastricht Ankylosing Spondylitis Enthesis Score, ESR = Erythrocyte sedimentation rate, NRS = Numerical rating scale 0–10, BT = Before treatment, AT = After treatment.

Ashwagandha oil, Ghrita and honey are other components [9]. Tikta Rasa has Shothaghna (anti-edematous and anti-inflammatory) and Pittahara properties (suppression and elimination of vitiated Pitta dosha). Majja (bone marrow) was used instead of Mamsa Rasa (meat soup) for the formation of Basti [10]. Majja which was used in Basti improved the quality of various tissue especially blood and bone marrow of the case and alleviates symptoms. Shalishastika Pinda Svedana provides nourishment to muscles, bones and peripheral nerves, reducing fasciculation, dyspnea (due to atrophy of respiratory muscles) inflammation, enthesitis, and peripheral neuropathy. Nasya with Anu Taila is helpful in alleviating the diseases above supraclavicular region such as Galgraha (stiffness of neck) and Hanugraha (stiffness of jaw) [11,12]. Rasrajrasa has Balya (anabolic) and Vajikarana (aphrodisiac) properties. It is indicated in Paralysis, all type of Vatajvikara (diseases due to Vata dosha), Dhanustambha (stiffness of spine), Hanustambha (lock jaw), Apatanaka (spasm of muscles and tetanus like condition) and vertigo [13]. The stiffness of spine and lock jaw condition are the main complaint in AS thus this drug is helpful. Ashwagandha has Rasayana (immunomodulator) and Balya (anabolic) properties [14]. Triyodashanga Guggulu is useful in Snayugatavata (~various tendon and ligament disorders), Asthigatavata (disorders of bone), Majjagatavata (disorders of bone marrow), Khanjavata (limping disorders), and various Vata disorders (~neurological, rheumatic, and musculoskeletal diseases) [15]. Chausatha Prahari Pippali is useful in Vatakaphaja (diseases due to Vata and Kapha dosha) disorders, cough, dyspnea, dyspepsia, etc. [16] Eranda moola is a potent analgesic with positive action for various rheumatic conditions [17]. These drugs and procedures have the properties to treat the manifestation of AS such as pain, inflammation, stiffness, scoliosis, kyphosis, fatigue, and weight loss. At present, the patient is under continuous observation and oral treatment. The quality of life of the patient has improved. There is no worsening of any symptoms and sign until September 2015. This is an important finding considering the prognosis and unsatisfactory treatment in modern medicine.

8. Conclusion

This combined Ayurvedic treatment of above mentioned oral Ayurvedic drugs and Panchakarma procedures were helpful in treating the patient of AS. This approach may be taken into consideration for further treatment and research work for AS.

8.1. Patient perspective

The patient was satisfied with the improvement. He was able to walk without any aid and could move his neck, joint swelling was reduced, and he hopes recovery from Ayurvedic management.

8.2. Patient consent

Written permission for publication of this case study had been obtained from the patient.

Source of support

Nil.

Conflicts of interest

None declared.

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