



Case Report

Management of juvenile spondyloarthritis through Ayurveda:- a case report

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ABSTRACT

Juvenile Spondyloarthropathies are the inflammatory arthritis before the age of 16 years and are characterized by the involvement of both synovium and entheses leading to spinal and oligoarticular peripheral arthritis, principally in genetically predisposed (HLA-B27) individuals. These arthropathies are having poorer chance of remission with conventional treatment in comparison to other juvenile arthritis; with less than 20% going into remission within five years of diagnosis. This paper is a retrospective observational study of this condition in one patient receiving Ayurvedic treatment in Paediatric Unit of Ch. Brahm Prakash Ayurved Charak Sansthan. A 15 years adolescent boy with the complaints of inability to stand and walk due to pain and swelling in large joints of body; was carried to Balroga OPD by parents. On the basis of history, physical examination and investigations, the condition is diagnosed *Aamavata* as per ayurvedic approach and juvenile spondyloarthritis as per modern medical science. This case is managed on the principle of treatment of *Aamavata* with administration of *Ajamodadi churnam* and *Mishreya ark* as deepana-pachana drugs followed by administration of *Simhnad Guggulu* and *Lakshadi Guggulu* with *Maharasnadi kashayam* and *Dashmoolaristam* for 3 months. *Rheumayoga gold* was also given from 4th week onward for 3 months. *Panchkarma* in the form of *Baluka swedana* and *Kshara basti* was also administered for 2 weeks after one month of oral medication. This treatment results in complete remission of all the signs and symptoms including pain and swelling of joints. The case is followed up for next three years without any relapse or progression in the disease. The case study infers that early intervention of Ayurvedic treatment in juvenile spondyloarthropathies may result in complete remission as well as may prevent progression of the disease. The case study provides a good hope for the management of this ailment as well as new ray for research.

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1. Background

Juvenile Spondyloarthropathies (JSpA) are the inflammatory arthritic diseases that exhibit overlapping clinical features and shared genetic predisposition which occur before the age of 16 years. They are characterized by the involvement of both synovium and entheses leading to spinal and oligoarticular peripheral arthritis, principally in genetically predisposed (HLA-B27) individuals. The principal clinical entities are enthesitis related arthritis, undifferentiated spondyloarthritis, ankylosing spondylitis, reactive arthritis, psoriatic arthritis and enteropathic arthritis

[1]. In comparison with other forms of juvenile arthritis, JSpA is likely to have a poorer outcome [2]. Observational studies suggest that continuous disease activity for more than five years forecasts disability and that disease remission occurs in less than 20% of children within five years of diagnosis [3]. Ayurveda describe a joint disorder namely *Aamvata* which have symptoms almost similar to those of spondyloarthropathies.

2. Case history

A 15 years adolescent boy was carried to *Balroga* OPD by parents with the complaints of inability to stand and walk due to *sandhi vedana & sandhi shotha* (pain and swelling in large joints of body) for last one month. The patient was taking anti-inflammatory & analgesic drugs (ibuprofen 400 mg tds & serratiopetidase 10 mg tds) for the complaints for last one month with minimal relief.

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On enquiry the patient told that onset was acute with overnight pain and swelling of left ankle joint, which is followed by swelling and pain in left knee joint in few days. Then the pain and swelling gradually involve right knee joint as well. Before the onset of symptoms he had suffered a minor trauma to ankle and an episode of loose stools one week back which may be considered as factor for derangement of agni & aggravation of *Vata*.

During the course of the disease all these joints remained painful and swollen. He also suffered an episode of severe abdominal pain and loose stool around beginning of the 4th week of illness for which he was admitted to emergency department of an allopathic hospital. At the end of four weeks illness he suffered bleeding per rectum for which he again went to allopathic hospital, got evaluated but doesn't continue allopathic treatment and came to our OPD.

On enquiry patient told that pain is continuous, aching in nature, aggravated in night and by cold foods & movement of joints, mild relief with pain killers and associated with swelling and stiffness in joints, restricted movements, loss of appetite and fever.

There was no history of any kind of skin eruptions, pain or redness in eyes, pain or stiffness of small joints of hands or feet, cervical pain, painful micturition, chest pain, involuntary movements of limbs etc.

2.1. Past history

History of typhoid 4 years back, fracture around right elbow 5 years back, no other relevant past history.

Patient's diet and nutritional history doesn't reveal any kind of stressor, he was on vegetarian diet with occasional intake of junk food. No history of tea, tobacco, alcohol or other addictions.

2.1.1. Drug history

Patient has taken anti-inflammatory & analgesic drugs (ibuprofen 400 mg tds & serratiopetidase 10 mg tds) for last one month for present complaints.

2.1.2. Family history

Father had suffered some joint problem at the age of 19 years. No other relevant history of any illness found in other family members.

2.1.3. Genetic history

Patient was found to be HLA-B27 positive.

2.1.4. Socio-economic history

Patient belongs to lower middle class, living in sub urban area of Delhi. The periphery is not clean with large dirty drain nearby to the colony of the patient. Source of water is piped water supply.

2.2. Examinations

Patients is carried to the OPD with poor general condition, weight 42 kg, height 170.6 cm, pulse rate 106/min regular, febrile (101⁰ f), BP-110/60 mm of Hg, marked pallor, dry coated tongue, no icterus, no gross lymphadenopathy, no clubbing or cyanosis, no skin lesions.

2.2.1. Dashvidha pariksha

The patient is of *Vataj prakruti*, *Asthisara*, *madhayama sahanana*, *sama pramana*, *madhyama satva*, *mandagni*, *avara vyayam shakti*, *sarvanga santapa*, signs of *Aam* like *lipta jivha*, *daurbhaya*, *anna-anabhilasha*, *klesha* were present.

2.2.2. Chest

Normal in shape & appearance with symmetrical bilateral expansion, normal lung field resonance and equal bilateral air entry without any added sounds.

2.2.3. CVS

Apex beat in left 5th intercostal space medial to midclavicular line, *S₁S₂*- WNL, no murmurs.

2.2.4. Abdomen

Scaphoid abdomen, soft non tender without any organ palpable.

2.2.5. CNS

Conscious, oriented to time, person & place, Cranial nerves-intact.

2.3. Local examination

2.3.1. Darshana pariksha (Inspection)

Sotha & Raga of *sandhis* (large swollen and red left ankle, left knee, right knee bilateral knee effusion (Fig. 1) and bilateral hip joints) with *Mansha shosha* (severe muscle atrophy of thigh, pelvic girdle muscles).

2.3.2. Sparshana pariksha (Palpation)

All the affected *sandhis* (joints) were having *Santapa* & are *Sparsha Asaha* (warm and tender) with *Stambha* (minimal active as well as passive movements).

2.4. Ashthavidha pariksha

The *Ashthavidha pariksha* points to the *Aam* production in the body (Supplementary Table 1).

2.5. Investigations

Initial investigations (last week of June 2016); CRP-+ve, Mon-toux Test-negative, RA factor-negative, ASO titre-negative; Arthrocentesis reports shows TLC- 1750 cells/mm³ with 98% polymorphs & 2% lymphocytes, sugar-10 mg/dL, proteins- 4.4 gm/dL; CBC shows Hb-10 gm%, TLC-8600/ul, DLC-P-60%, L-32%, E-6%, M-2%. ESR- 59 mm fall in 1 h and Repeat CBC after 20 days shows ESR -120 mm fall in 1 h.

At the time of ayurvedic consultation (1st week of August 2016); CRP- +ve and ESR- 128 mm fall in 1 h.



Fig. 1. Bilateral knee effusion before treatment.

2.6. Nidana panchaka & diagnosis

On the basis of history, clinical findings and initial investigations the case was initially diagnosed as poly-articular arthritis which was later on revised as non specific juvenile spondyloarthropathy after completion of 6 weeks of persistent arthritis and positive report for HLA-B27. The diagnosis of JSpA in 15 years adolescent boy without any positive family history and onset from ankles was expected to not have good prognosis as per modern science knowledge and same was conveyed to the patient's attendants.

As per ayurvedic perspective, there is involvement of joints with signs of Vata vitiation and Aam production. **Nidana-** Abhighata, Mandagni causing factors; **Samprapti:** **Dosha-** Vata pradhana tri-dosha (mainly vyana & samana vayu, pachaka pitta & shleshaka kapha); **Dushya-** Rasa, Asthi, Majja, Kandra; **Agni-** Mandagni; **Aam-** Jatharagni & Dhatwagni janya; **Srotas-** Annvaha, Rasavaha, Asthi-vaha, Majjavaha; **Srotodushti-** Sanga; **Uthana-** Amashyotha; **Adhistan-** Sarva sandhi; **Rog Marga-** Asthi-sandhi- marma (Madhyama); **Vyadhi Swabhava-** Chirakari; **Sadhyashdhyata-** Kricha-sadhya; **Poorva roopa-** Symptoms of Aam in the form of weakness, Atisara, mandagni; **Roopa-** Sandhi saruja shopha (painful joint swelling), Jwara (Fever), Trishna (Thirst), Aruchi (loss of appetite), Utsaha hani (poor work capacity), Kukshi shoala (abdominal pain), Jadya (inability to perform daily activities); **Upshya-Anupshya-** increase in symptoms by cold food items night, application of oil and Potali swedana. Improvement with light, hot food items, Ruksha swedana.

Thus the diagnosis of Aamvata was made and treatment was started on its line. As the disease was of recent onset but is in balyawastha (childhood period) guarded prognosis was expected as per ayurvedic approach.

3. Interventions and results

The initial focus was on reducing inflammation of joints, providing relief from pain and alleviating Aam production.

Medications prescribed at first visit were *Mishreya ark* (for *deepana, pachan & raktatisar har*) 15 ml twice daily with water, *Ajmodadi churna* 3 g twice daily with warm water, *Lakshadi Guggulu* and *Simhnad Guggulu* 500 mg each twice daily with *Maharasnadi Kashaya* 40 ml and *Dashmoolaristam* 20 ml with equal water twice daily after meals for a period of one week. The patient was put on bland diet and advised complete rest and hot water fomentation.

In next visit, there was a mild symptomatic relief and on examination bilateral knee effusion was slightly reduced in size with reduction in inflammatory signs. Patient was evaluated for involvement of eyes by ophthalmologist. Two medications were added to previous treatment for next 2 weeks. They are *Mahasankh vati* 250 mg twice daily with luke warm water and *Laghuvishgarbha talium* for local application followed by *Baluka swedana*.

At third visit there was very good symptomatic relief but joint effusions were persisting so a gold preparation in the form of *Rheumayoga Gold* (containing *Suvarna Bhasma* 1 mg, *Yograj guggul* 30 mg, *Maharasnadi Kwatham* (solid extract) 235 mg, *Bang Bhasma* 5 mg, *Nag Bhasma* 5 mg, *Loh Bhasma* 5 mg, *Mandur Bhasma* 5 mg, *Makshik Bhasma* 5 mg, *Abhrak Bhasma* 5 mg, *Rasa Sindur* 5 mg) was started as 1 tab twice daily for two weeks.

At fourth visit patient was admitted with the intention to extract out remaining Aam and reduce joint swelling with *Panchkarma* procedures. The patient was put on *Ksharabasti* 300 mL daily for 10 days with *Patra potali swedana* for 10 days. As joint swelling and pain increases during the course of *Patra potali swedana*, it is replaced by *Baluka swedana* for next one week. During hospital stay patient was given oral medication which include *Ajmodadi churna*

3 gms twice daily, *Simhnad guggulu* and *Lakshadi Guggulu* 500 mg twice daily with *Dashmoola Kwath* 30 mL, *Balarista* 20 mL twice daily and *Yavani ark* 10 mL twice daily with equal water. By the end of course of treatment in hospital, there was marked decrease in bilateral knee effusion (Fig. 2) with no signs of inflammation in any joints of body. The patient was able to walk freely without pain. Interventions and results with timeline are summarized in [Tables 1 and 2](#).

The oral medication was continued for next three months to prevent relapse of the disease.

3.1. Diet

Light bland diet was prescribed throughout the treatment and was indicated during follow up period also. The diet advised includes boiled old rice, breads made up of old wheat flour, soup of pulses like *Masoor* (lentils), *Kulath* (horse gram), *Mudga* (green gram) and *Arhara* (pigeon pea), vegetables like *Parwla* (pointed gourd), *Vastuka*, brinaja, *Karvellaka* (bitter gourd), bottle gourd etc. The foods asked to avoid were heavy, oily, improperly cooked foods, junk food, milk items like curd etc.

3.2. Follow-up and outcome

Initially patient was followed up weekly. At follow ups patient was assessed for effect of therapy, reduction in disease activity, and improvement in daily activity function score as well as appearance of any untoward effect and tolerance of medications. Treatment adherence was assessed by asking patient as well as parents of the patient. The patient show good results with ayurvedic treatment and the outcome is discussed in the [Supplementary Tables 2 and 3](#) in terms of patient assessed outcome and clinician assessed outcome.

4. Discussion

The condition was approached and managed with the principles of management of Aamvata. In Aamvata, two main events are contributing to the pathogenesis of the disease. They are production of Aam and also the Vata vitiation. According to Ayurveda, the treatment of Aamvata includes treating Aam with *Langhana*,



Fig. 2. Complete remission after treatment.

Table 1
Time line of the case.

Time	Clinical events and interventions
Last week June 2016	Onset of joint pain and swelling in Left ankle and left knee joint Investigation shows RA factor & ASLO – negative, CRP- positive, Synovial fluid- TLC- >1750 cells/mm ³ with 98% polymorphs Start allopathic medicine (ibuprofen 400 mg tds & serratiopetidase 10 mg tds)
1st week July 2016	Involvement of right knee and both the hip joints
3rd week July 2016	Episode of severe abdominal pain and loose stool, got indoor treatment at allopathic hospital for 3 days
4th week July 2016	Episode of bleeding per rectum USG Abdomen- no abnormality detected
2nd August 2016	First visit to our OPD, ESR-128 mm/h, CRP- positive, BASDAI- 8.1 Diagnosis of Aamvata (sero-negative polyarthritis) made and started orally Ajmodadi churnam, Mishreya Ark, Lakshadi Guggulu, Simhnad Guggulu with Maharasnadi kashayam and Dashmoolaristam with strict dietary instructions
9th August 2016	Mild improvement, BASDAI-7.1 Mahasankh vati added to previous oral medication with local application of laghuvisgarbha tail followed by Baluka swedana
16th August 2016	As 6 weeks of arthritis was completed, clinical diagnosis of JSpA made, ophthalmic examination to rule out iridocyclitis performed which comes out negative, HLA-B27 advised
23rd August 2016	Improvement in pain and joint movement but less improvement in joint swelling, ESR-94 mm/h, CRP-positive, BASDAI-5.1 Tab Rheumayog Gold added to previous drug regimen and Mahasankh vati stopped
30th August 2016	Swelling persists, got admitted Panchakarma procedures started- Ksharabasti for 10 days, Patra potali swedana Oral medication- Ajmodadi churnam, Yavani Ark, Lakshadi Guggulu, Simhnad Guggulu with Dashmoola kwatham and Balaristam
4th September 2016	Increase in joint pain and swelling Patra potali swedana replaced by Baluka swedana, rest same continued for 10 days
13th September 2016	Relieved of pain and swelling, BASDAI-1.2, ESR- 42 mm/h, CRP-negative, HLA- B27- positive Oral medication continued for next 3 months
10th January 2017	Patient in complete remission, no complaints and positive clinical findings
February 2020	Patient still in remission with occasional heel pain

Deepana, Pachana with *Tikta & Katu dravyas* followed by *Virechan* and treatment of *Vata* with *snehapana* and *Basti*. However a good measure of treating both *Aam* and *Vata* is prescribed as use of *Ksharabasti* [4].

Table 2
Summary of Interventions & results.

Duration of treatment	Drugs used	Dosage	Rationale of drug use	Results
1st week	<i>Ajmodadi Churna</i> <i>Mishreya Ark</i> <i>Simhnad & Lakshadi Guggulu</i> <i>Maharasnadi Kashaya</i> <i>Dashmoolaristam</i>	3 g BD 15 ml BD 500 mg BD 40 ml BD 20 ml BD	<i>Deepana, Pachana</i> <i>Deepana, Pachana, Vatanuloman</i> <i>Shothahar, Vataghna</i> <i>Shothahar, Vatanuloman</i> <i>Shothahar, Vataghna</i>	Reduction in <i>Aam</i> signs Reduction in pain Reduction in pain
2nd -3rd wk	Same as 1 st week + <i>Shankh Vati</i>	250 mg BD	<i>Deepana, pachana, Vatanuloman</i>	Complete relief in pain & mild reduction in swelling
4th week	Same as 1 st week + <i>Rheumayoga gold</i>	1 tab bd	<i>Vatahara, Rasayana</i>	Reduction in swelling & improvement in weakness
5–6th week	Oral medicine+ <i>Baluka Swedana & Kshara Basti</i>	300 ml/day	<i>Aamhar, Rukshana, Vatahara</i>	Complete remission of the disease

In this case the first line of drugs include *deepana* and *pachana* with *Ajmodadi churna* [5] and *Mishreya Ark, swedana* and use of *Vata anulomana* drugs like *Dashmoolaristam* [6] and *Maharasnadi kashayam* [7] and also *vata shaman* and *santhi shothahara* drugs like *Simhnad Guggulu* [8]. As there was good initial response in reduction of pain the same treatment plan was advised for next two weeks with addition of *Shankhvati* for increasing *agni* and *snehana* with oil to reduce *Vata*. But as the swelling persist even after treatment for 3 weeks, addition of a Gold preparation as *rasayana* and *vata* pacifying agent *Rheumayoga Gold* was prescribed for one week but after having incomplete remission patient was admitted and *kshara basti* [9] administered to extract out remaining *Aam* and *sthanika swedna* done with *Potali* initially followed by *Baluka swedana* for 2 weeks. The use of *Potali swedana* worsening the pain and relief with *Baluka swedana* indicate role of *Aam* in this condition [10]. With these *panchkarma* procedures internal *shamana* drugs were used. This completes the treatment regimen of disease and the patient was completely relieved of pain and swelling of joints. As per recent reasearches on these formulations, *Ajmodadi churna* shows significant anti-inflamatroy action in rats [11]. *Simhnad guggulu* has been found effective in the management of *Aamvata* in various clinical studies in adults [12]. *Lakshadi guggulu* is also proven for its antiarthritic and chondroprotective activity in *in vitro* study [14]. Various *in vitro* and experimental studies have shown that *Maharasnadi kashayam* possesses anti-inflammatory, analgesic [15,17] & antioxidant activities [16] through which it produces its anti-arthritis effects. *Dashmoolaristam* also possesses analgesic and anti-inflammatory activities [18]. The worth of *ksharabasti* in *Aamvata* has been proven in various clinical studies [19,20]. Thus this treatment protocol for JSpA with the use of these formulations and *panchkarma* procedure is having scientific justification as well.

Drugs were chosen according to *prakruti* (constitution), *satva* (mental strength), *satmaya* (dietary pattern) & *vaya* (age) of patient and also according to *desha* (regional variation), *kala* (seasonal variation), *roga avastha* (disease severity). For prevention of the condition some *rasayana, deepana, pachana & Vata shaman* drugs were continued for next 3 months.

At present, the patient is under continuous observation through quarterly follow-ups. The patient is still under clinical remission as of February 2020. This is a significant finding considering the prognosis and unsatisfactory treatment in modern medicine.

This case study infers that early intervention of ayurvedic treatment protocols particularly *panchkarma* procedures in JSpA are beneficial in inducing remission. Prolonged treatment with ayurvedic medication and following ayurvedic pattern of diet as well as life style can keep patients of JSpA in remission. However as this was a single case study the results and outcomes may vary upon enrolment of large number of patients of JSpA.

5. Conclusion

This case study concludes that early use of ayurvedic formulations and *panchkarma* procedures are helpful in reducing pain and swelling in the patients of spondyloarthritis. Ayurvedic management can induce early remission of the disease and can prevent further relapses. However clinical trials with large number of patients are required to further validate the results.

5.1. Patient perspective of treatment

Patient as well as parents was totally satisfied with the treatment. As initially they have taken the patient in wheel chair and after treatment of 6 weeks patient was fully fit to walk or do any routine activity.

5.2. Patient consent

Written consent of patient had been taken for publication of this case study.

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Conflict of interest

None.

Appendix A. Supplementary data

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