

EFFECT OF ADJUVANT AYURVEDIC TREATMENT IN CONSERVATIVE MANAGEMENT OF PARAPLEGIA DUE TO TUBERCULOSIS OF SPINE: A Case Study

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Article Received on	-	13 th April 2014
Article Revised on	-	28 th April 2014
Article Accepted on	-	9 th May 2014

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CASE STUDY

eISSN 2348- 0173

**EFFECT OF ADJUVANT AYURVEDIC TREATMENT IN
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ABSTRACT:

Spinal tuberculosis is often associated with neurological deficit as severe as quadriplegia or paraplegia. Though surgery along with anti tuberculosis treatment (ATT) has promising outcomes; in patients unfit for surgical management or do not show significant improvement, neurological deficit may persist for long time or may be permanent and badly affects quality of life. This patient (58 years old female) of spinal tuberculosis was diagnosed as a case of *Asthimajja Gata Vata* from *Ayurveda's* point of view. In view of paraplegia (Frankel grade A), neurological improvement with only conservative treatment was matter of concern. Patient received ATT (INH, Rifampicin, Pyrazinamide, Pyridoxine and Streptomycin) and *Ayurvedic* medicines - *Kaishora Guggulu*, *Samshamani Vati* and combination of *Swarna Malini Vasanta*, *Abhrak Bhasma* and *Chausasti Pippali*, along with *Abhyanga* with *Tila Taila* and *Matra Basti* of *Guduchi Siddha Yamaka Sneha*. This patient showed significant improvement in neurological deficit within two months of *Ayurvedic* treatment. Complete remission was seen in loss of sensation, back pain, loss of appetite. Muscle power showed significant improvement (from 0 to 4). Marked improvement was seen in Frankel scale from A to D. Patient showed good tolerance for ATT. *Ayurvedic* treatment can be helpful as adjuvant treatment with conventional ATT for faster recovery from neurological deficits, improvement in quality of life as well as for good tolerance of ATT.

Key Words : Pott's spine, *Swarna Malini Vasanta*, *Guduchi*, *Tinospora cordifolia* (*Willd*), *Basti*

INTRODUCTION

Neurological complications, such as quadriplegia or paraplegia, are most dreadful problems due to tuberculosis of spine.^[1] It badly affects the quality and span of life. Hence along with anti tuberculosis treatment (ATT) surgical treatment is advocated in cases with significant neurological deficit with demonstrable extradural compression.^[2] Though combined treatment, ATT and surgery, have shown promising results some patients do not show improvement in neurological deficit. This patient of spinal tuberculosis was in Grade A of Frankel classification of spinal injury^[3]. According to symptoms and pathology from *Ayurveda's* point of view the patient was diagnosed as a case of *Asthimajja Gata Vata*. Patient received ATT and *Ayurvedic* oral treatment, *Abhyanga* and *Matra Basti*. As the patient had decided against surgical treatment, faster neurological recovery was matter of concern. The patient was treated as per *Ayurvedic* principles of treatment of *Asthimajja Gata Vata*^[4]. Significant improvement was seen in muscle power, loss of sensation, straight leg rising and patient improved up to stage D of Frankel scale after 55 days of *Ayurvedic* treatment along with ATT. Though surgery is proved treatment of spinal tuberculosis in patients unfit for surgery or do not show improvement, *Ayurvedic* treatment

can be helpful. This is an observation in single patient and further study is necessary to establish role of *Ayurvedic* treatment in cases of spinal tuberculosis.

CASE REPORT

A Female patient of 58 year, presented on 3.10.2005 in M A Podar hospital, with complaints of total sensory motor loss in both lower extremities since two days. Patient was suffering from low back pain, body ache and anorexia since two months, numbness and tingling in both lower extremities since eight days and also had history of fall in home while walking five days before. Patient was admitted. Detail history taking revealed that she was tailor and used to work on manual pedalling sewing machine daily for ten hours since 15 years. Physical examination showed tachycardia (pulse 104/ min), muscle power in both lower extremities was zero while normal in both upper extremities. Straight leg rising test done passively was painful at 45°. Reflexes in upper extremities were normal while in both lower extremities they were sluggish. Haemogram showed raised erythrocyte sedimentation rate (ESR 55 after one hour by Wintrob's method) and while other parameters were within normal limits (haemoglobin - 13.2 gm%, total leucocytes

5000/mm³, neutrophils 79, lymphocytes 28, eosinophils 2). Urine investigation showed moderate protein loss and suggested urinary infection (Pus cells 10 – 15/hpf, epithelial cells 5 – 10/hpf). Other investigations such as liver functions, renal functions, blood sugar and chest radiograph were within normal limits. Radiograph of lumbar spine showed sacralisation of fifth lumbar vertebra and reduced inter-vertebral space at multiple levels in lumbar and dorsal spines. Considering the history of recent fall, raised ESR and sudden loss of power in lower extremities with sluggish reflexes magnetic resonance scan (MRI) of dorsal and lumbar spine was advised to patient. MRI showed destruction of adjoining parts of ninth and tenth dorsal spine along with inter-vertebral disc suggestive of tuberculosis of spine. Associated epidural, paraspinal soft tissue represented granulation tissue or abscess and indentation of chord by epidural tissue was also seen. (Figure 1)

Expert opinion from spine surgeon in KEM Hospital, Mumbai was taken, who suggested anti tuberculosis treatment (ATT) and surgical removal of abscess and fixation of ninth and tenth dorsal spines. After discussion with the surgeon about cost and risk associated with surgery, patient denied for surgery and agreed to start ATT and insisted for *Ayurvedic* treatment along with ATT. So the patient continued her admission in hospital and received *Ayurvedic* treatment.

DIAGNOSIS

In view of MRI, raised ESR and other symptoms it was a case of tuberculosis of spine. Considering the Frankel classification patient was in Grade A – complete neurological deficit with no sensory or motor sparing distal to the spinal lesion. For *Ayurvedic* diagnosis major etiological factors revealed were excess physical activity involving both lower extremities for many years as part of tailoring occupation, sitting in improper position without any support for back were responsible for strain on *Asthi* and *Majja Dhatu* at *Kati Pradesh*. Due to long working hours and low socio economical status the patient could not take meals at proper timing (*Atita Kala Bhojana*) and also used to take a lot of stale food (*Paryushita Aahara*) and bakery products. These etiological factors when present for long time are responsible for malfunctioning of *Agni* and collection of *Sama Doshas* in body. From *Ayurveda's* point of view, differential diagnoses considered were *Siragata Vata*, *Sandhigata Vata* and *Asthimajja Gata Vata*. Symptoms of *Siragata Vata* have specific mention of dull pain (*Manda Rujā*), wasting (*Shosha*), oedema (*Shwayathu*) which were absent in this patient.^[5] *Sandhigata Vata* is relatively chronic

disease and shows pain mainly during movement.^[6] *Asthi Majjagata Vata* specifically mentions about destruction of joint structure (*Bhedo Asthi Parvanam*) and power loss (*Bala Kshaya*)^[7]. Hence considering etiological factors and symptoms of patient the patient was diagnosed as a case of *Asthimajja Gata Vata*.

Treatment

The patient received ATT as advised by spine surgeon from KEM Hospital, which included INH 500 mg, Refampicin 450 mg, Pyrizinamide 750 mg and Pyridoxine 40 mg orally once per day for 18 months. Patient also received intramuscular injections of Streptomycin 750 mg daily for first 60 days. Along with ATT patient received *Kaishora Guggulu* 500 mg thrice daily after food with warm water, *Samshamani Vati* 1 gm thrice daily after food with warm water. Combination of *Swarna Malini Vasanta* 60 mg, *Abhrak Bhasma* 120 mg and *Chausasti Pippali* 250 mg was given twice daily at empty stomach and at night with honey. *Panchakarma* treatment included gentle application of *Tila Taila* on both lower extremities and *Matra Basti* of *Guduchi Siddha Yamaka Sneha*. ATT and oral *Ayurvedic* medicines were started on 27.10.2005, while *Abhyanga* and *Basti* were started on 18.11.2005.

TREATMENT OUTCOMES

After completion of 12 *Basti* and one month of oral treatment, loss of power and sensation in both lower extremities recovered slightly and muscle power improved from 0 to 1. But low back pain, tingling, numbness were same as before.

After completing 25 *Basti* and 45 days of oral treatment total remission was seen in loss of sensation and body ache. Marked improvement was seen in muscle power, low back pain, tingling and numbness. Patient could raise her legs against gravity up to 10 - 15°. Muscle power improved up to 3.

After completing 55 *Basti* and 85 days of oral treatment complete remission was seen in low back pain, tingling, numbness, body ache, loss of appetite. Muscle power improved to 4 and patient could raise her right and left leg up to 30 and 45° respectively (Figure 2). Weight increased from 42 to 48 kg. Patient could sit in squatting position and could stand using walker for 2 to 3 minutes (Figure 3). So the patient was advised to use tailor's brace. Patient demanded discharge due to family matters and was discharged on 21.1.2006. At time of discharge the patient was found to improve from Frankel's stage A to stage D – sparing of sensation and useful motor function distal to the spinal lesion.

She was asked to continue ATT as per schedule and continue *Ayurvedic* medicines and *Abhyanga*. Patient kept regular follow up and continued ATT and *Ayurvedic* treatment. After completion of ATT, significant improvement was seen. Muscle power improved to almost normal. Patient could do her house hold activities very well and could walk using a stick (Figure 4).

DISCUSSION

Kaishor Guggulu is a classical herbal medicine used in gout and arthritis. It reduces oedema (*Shwayathu*) and obstruction (*Vibandha*) and also improves appetite.^[8] *Samshamani Vati* is herbal preparation containing *Guduchi* (*Tinospora cordifolia* Willd). *Guduchi* is drug of choice in such patients owing to its *Tikta*, *Snigdha*, *Agnideepana* and *Rasayana* properties.^[9] Ether extract of stem of *Tinospora cordifolia* (Willd) has shown inhibitory effect on growth of *Mycobacterium tuberculosis* at in vitro studies.^[10,11] Clinical studies have shown that simultaneous administration of *Guduchi* along with ATT provide better physical and psychological well being by potentiating effect of ATT.^[12] It is also well known to prevent hepatotoxicity due to ATT.^[13] It has anti inflammatory and anti oxidant property. *Tinospora cordifolia* (Willd) has been reported to stimulate growth of osteoblasts, increases the differentiation of cells into osteoblastic lineage and also increases the mineralization of bone like matrix making it potent anti osteoporotic medicine.^[14] Considering these effects in such patient having tuberculosis of spine, *Guduchi* becomes drug of choice not only due to its anti tuberculosis and hepatoprotective property but also due to its protective and probable restorative effect on spines. *Swarna Malini Vasant* is a herbo mineral combination containing *Suvarna* (gold), *Mukta* (pearls), *Hingula* (HgS), *Kharpara* (Calcium zinc carbonate), *Maricha* (*Piper nigrum* Linn.) treated with butter and lemon juice.^[15] It is well known medicine useful in improving *Dhatwagni*. *Abhrak* (mica) is *Snigdha*, pacifies *Vata*, *Pitta* and corrects *Kshaya*, *Deepana* and *Balya*.^[16] *Pippali* (*Piper longum* Linn.) triturated sixty four times with decoction of *Pippali* makes it *Chausasti Pippali*. It is *Snigdha*, *Deepana*, pacifies *Vata* and *Kapha* and *Rasayana*.^[17] Hence in this patient combination of *Swarna Malini Vasant*, *Abhraka* and *Chausasti Pippali* will help in relieving *Margavarodha* of *Vata* without vitiating *Vata*. These medicines are known to have positive effect in improving *Jatharagni* as well as *Dhatvagni*. So it can help in improving digestion as well as metabolism, leading to weight gain. Treatment of *Asthimajja Gata Vata* includes *Basti* of *Mahasneha*^[4] and milk or ghee treated with *Tikta Dravya*.^[18] Due to financial constraints and ethical

issues from patient, related with use of *Vasa* and *Majja*, *Yamaka Sneha* (sesame oil and ghee) treated with *Guduchi* were used for *Basti*. *Abhyanga* with *Tila Taila* were used as local treatment to avoid wasting due to power loss.

Basti is highly recommended in cases of paraplegia, fractures, muscular wasting.^[19] It is observed that in this patient though *Basti* is found very useful, it needs to be administered for longer time. But it should be kept in mind that continuous use of *Sneha Basti* can vitiate *Doshas* and hamper function of *Agni*.^[20] Hence status of *Agni* should be accessed daily. As this patient was suffering from anorexia at time of admission, *Basti* were started three weeks after starting oral medicines, when anorexia was considerably reduced.

The objective of treatment in this patient was not to treat tuberculosis of spine, as conventional treatment was available, but to improve quality of life of patient especially when the patient has denied for surgical management. Surgical treatment may not be useful in some cases. In a study it is found that 8% of patient did not show improvement in spite of ATT and surgical treatment.^[21] Though conservative treatment alone is also proved effective in spinal tuberculosis the rate of recovery in such cases is slower and reported as 2 to 6 months.^[22] But in this patient it was seen that adjuvant *Ayurvedic* treatment helped patient in faster recovery in this case. Degree and duration of disability and dependence on others were less. Patients receiving only conservative management possess a risk of disease reactivation, severe kyphosis or late instability that can lead to paraplegia.^[23] As this patient did not show up for follow up after completing ATT, no comment can be made on outcomes of *Ayurvedic* treatment in long run.

Tolerability of ATT was another important question. Anti tuberculosis medicines are known hepatotoxic and produce variety of symptoms such as rash, gastrointestinal intolerance, hepatitis, peripheral neuropathy etc. In such case ATT is stopped till toxic symptoms are resolved. In this case due to adjuvant *Ayurvedic* treatment patient did not show any symptoms of intolerance and could complete ATT in time. As discussed before *Ayurvedic* medicines are useful as hepatoprotective with ATT.

Though surgical skills and technology are advancing spinal surgeries carry potential risk as compared to other orthopaedic surgeries. So patients in whom, the risk of surgery is higher than the expected outcome, *Ayurvedic* treatment can be useful. Also in patients who do not show significant improvement, alternative treatments, such as this, can be useful.

It is an observation in a single case and further research in this direction is required to establish role of *Ayurvedic* treatment and *Panchakarma* in cases of tuberculosis of spine.

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Figure 1: MRI showing lesion of spinal tuberculosis



Figure 2: Improvement in SLRT after 55 days of Basti



Figure 3: Patient could stand with walkerafter 55 days of Basti

- 3.10.2005 – Patient admitted in hospital
- 27.10.2005 – Diagnosed as tuberculosis of spine and ATT, Ayurvedic oral medicines started. Frankel stage A
- 18.11.2005 – Basti and Abhyanga started
- 30.11.2005 – Completed 12 Basti. Muscle power improved from 0 to 1. Loss of sensation slightly less. Low back pain, tingling, numbness same.
- 13.12.2005 – Completed 25 Basti. Muscle power improved to 3. Loss of sensation totally relieved. Low back pain, tingling, numbness markedly relieved.
- 21.1.2006 – Completed 55 Basti. Muscle power improved to 4. Straight leg rising up to 45°. Could stand using walker for 2 to 3 minutes. Frankel stage D. Patient discharged.
- Aug 2007 – Completed ATT. Muscle power nearly normal. Could do her house hold activities very well and could walk using a stick.

Figure 4: Time line

CITE THIS ARTICLE AS –

Deshpande Vaishali et. al. Effect of Adjuvant Ayurvedic Treatment In Conservative Management of Paraplegia Due to Tuberculosis of Spine: A Case Study- Int. J. Ayu. Alt. Med., 2014; 2(2):45-50

Source of Support – Nil

Conflict of Interest – None Declared