



## Case Study

### MANAGEMENT OF PARAPARESIS DEVELOPED AFTER SPINAL TUBERCULOSIS THROUGH AYURVEDA- A CASE STUDY

**Mohita Bohra**

Assistant Professor, Dept. of Panchkarma, Om Ayurvedic Medical College, Hospital and Research Centre, Uttarakhand, India.

#### ABSTRACT

Spinal tuberculosis is one of the most dangerous and destructive form of tuberculosis. Predisposing factors for spinal TB are same as that of pulmonary TB, which include poverty, overcrowding, illiteracy, malnutrition, diabetes mellitus, HIV infection, alcoholism, drug abuse. Though TB of cervical spine is rare but neurological deficits are more common as compared to lumbar spine. This is a case of 9 year old male child who developed neurological deficits after TB cervical spine. *Panchakarma* therapy along with oral medicines given for duration of one year provided significant relief in symptoms as- generalized weakness, muscle rigidity, muscle weakness. Further continuation of treatment is expected to bring more benefit.

**KEYWORDS:** Neurological deficits, *Panchakarma*, Spinal tuberculosis.

#### INTRODUCTION

Spinal tuberculosis (TB) is perhaps the most clinically important extra-pulmonary form of the disease.<sup>[1]</sup> Cervical spine TB is rare comprising 2-3% of cases of TB spine.<sup>[2]</sup> Tuberculosis is a disease of poverty that affects mostly young adults in their most productive years.<sup>[3]</sup> In present case also poverty, illiteracy, malnutrition may be called the culprit for development of disease. Neurologic deficits are common with involvement of thoracic and cervical regions. Left untreated, early neurologic involvement may progress to complete paraplegia or tetraplegia. The reported incidence of neurological deficit in spinal tuberculosis varies from 23 to 76%.<sup>[4]</sup> Here presenting a case of development of neurological deficits after tuberculosis of cervical spine.

#### Case history

A 9 year old male patient with poor socio economic status attended Panchakarma O.P.D. of Rishikul Govt. Ayurvedic P.G. College, Haridwar with chief complaints as- Generalized muscle wasting since 2 yrs., inability to hold neck since 2 yrs., inability to sit and walk without support since 2 yrs., weakness with spasmodic pain in upper and lower extremities since 2 yrs., constipated bowel habit (once in 3 days) since 2 yrs.

His past history revealed that patient was born normal and lived a normal life till the age of 7yrs. Then at the age of 7yrs., he developed continuous backache, weight loss and mild fever which were not relieved by analgesic medicines given

at local hospital. When taken to higher centre he was diagnosed spinal T.B. which got confirmed by MRI scanning (involved C2-C3-C4). There he was treated with ATT (for 18 months). This treatment helped in curing tubercular infection and relieving fever and backache but symptoms like weakness along with pain and stiffness in whole body especially extremities along with generalized loss of muscle mass persisted. The symptoms gradually worsen. Second MRI was done which revealed C2-C3-C4 cord compression due to vertebral subluxation. Then patient attended OPD of Rishikul Ayurvedic College.

On examination his B.P., pulse, respiratory rate were under normal range. There were no signs of icterus and cyanosis though mild pallor was present. Height of patient was 128 cm and weight 22.5 kg. No relevant family history was present. On Ten-fold examination (*Dasvidha Pariksha*) *Prakriti* was found *Vata-Pittaja*, *Vikriti: Vataja*, *Sara: Hina*, *Samhanana: Avara*, *Pramana: Avara*, *Satmya: Madhyama*, *Satva: Madhyama*, *Abhyavarana Shakti & Jarana Shakti: Avara*, *Vyayama Shakti: Avara*, *Vaya: Balavastha*.

On Systemic examining CVS, GIT, Respiratory system all findings were found normal.

Detailed examination of nervous system findings were noted

Patient was conscious and well oriented.

Motor functions - The motor functions when neurologically examined showed serious disabilities.

The patient was unable to walk, even sitting and standing with support was difficult. He also had severe muscle wasting and was also emaciated. Highly any muscle bulk was visible and muscle tone was highly increased. Tendon reflexes were found to be diminished.

Sensations were found to be diminished.

MRI findings (1<sup>st</sup> visit) - Spinal tuberculosis involving C2-C3-C4 spine with involvement of vertebral disc.

(2<sup>nd</sup> visit) - Cervical Cord Compression (due to C3-C4 vertebral subluxation).

### Treatment plan

First sitting of Panchakarma therapy was planned for duration of 21 days on 1<sup>st</sup> visit.

As per symptoms, in *Ayurveda* this disease can be correlated with *Sarvang Vata Roga* described in *Charaka Samhita*.<sup>[5]</sup> The symptoms like- *Hastapadasamkocha*, *Sira-snayuvishosha*, *Toda* and *Shool*<sup>[6]</sup> which are described under this disease, were clearly noticed in patient. And so, the treatment was planned emphasizing on alleviation of *Vata*. *Brihana* and *Ushna Panchakarma* therapies along with some *Samshamana* drugs were given to patient for a total duration of 1 year. Two sittings of therapy were planned maintaining a gap of six months.

**Table 1: First sitting of therapy**

Day	Therapy
1 <sup>st</sup>	<i>Ruksha Udwartana</i>
2 <sup>nd</sup>	<i>Ruksha Udwartana</i>
3 <sup>rd</sup>	<i>Ruksha Udwartana</i>
4 <sup>th</sup>	<i>Sarvang Abhyanga</i>
5 <sup>th</sup>	<i>Sarvang Abhyanga</i>
6 <sup>th</sup>	<i>Sarvang Abhyanga</i>
7 <sup>th</sup>	<i>Sarvang Abhyanga</i>
8 <sup>th</sup>	<i>Sarvang Abhyanga</i>
9 <sup>th</sup>	<i>Sarvang Abhyanga</i>
10 <sup>th</sup>	<i>Sarvang Abhyanga</i>
11 <sup>th</sup>	<i>Sarvang Abhyanga</i>
12 <sup>th</sup>	<i>Shasti Shali Pinda Sweda + Anuvasana Basti- 50ml. (Ksheerbala oil)</i>
13 <sup>th</sup>	<i>Shasti Shali Pinda Sweda + Anuvasana Basti- 50ml. (Ksheerbala oil)</i>
14 <sup>th</sup>	<i>Shasti Shali Pinda Sweda + Niruha Basti- 250ml. (Dashmoola Kwath)</i>
15 <sup>th</sup>	<i>Shasti Shali Pinda Sweda + Anuvasana Basti- 50ml. (Ksheerbala oil)</i>
16 <sup>th</sup>	<i>Shasti Shali Pinda Sweda + Niruha Basti- 250ml. (Dashmoola Kwath)</i>
17 <sup>th</sup>	<i>Shasti Shali Pinda Sweda + Anuvasana Basti- 50ml. (Ksheerbala oil)</i>
18 <sup>th</sup>	<i>Shasti Shali Pinda Sweda+ Niruha Basti- 250ml. (Dashmoola Kwath)</i>
19 <sup>th</sup>	<i>Shasti Shali Pinda Sweda + Anuvasana Basti- 50ml. (Ksheerbala oil)</i>
20 <sup>th</sup>	<i>Shasti Shali Pinda Sweda</i>
21 <sup>st</sup>	<i>Shasti Shali Pinda Sweda</i>

**Table 2: Oral drugs given during and after therapy**

Oral drugs	Duration
1. <i>Dashmoola Kwath- 20ml. B.D empty stomach</i> 2. <i>Chitrakadi Vati- 1 tab. B.D.</i> 3. <i>Vatavindhwasana Rasa- 50mg.</i> <i>Dhatriloha- 100mg.</i> <i>Balchaturbhadra Churna - 250mg. B.D.</i> after meal with honey 4. <i>Drakshaasava- 10ml. BD after meal</i>	Initial 21 days (during therapy)

5. <i>Dashmoola Kwath</i> - 20ml. B.D empty stomach 6. <i>Praval Pishti</i> - 50mg. <i>Dhatriloha</i> - 100mg. <i>Shatavari Churna</i> - 250mg. B.D. <i>Ashwagandha Churna</i> - 250mg. after meal with milk 7. <i>Drakshaasava</i> - 10ml. BD after meal	For 6 months (after therapy)
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Second sitting of therapy was planned after a gap of 6 months for duration of 21 days.

**Table 3: Second sitting of therapy**

Day	Therapy
1 <sup>st</sup>	<i>Ruksha Udwartana</i>
2 <sup>nd</sup>	<i>Ruksha Udwartana</i>
3 <sup>rd</sup>	<i>Ruksha Udwartana</i>
4 <sup>th</sup>	<i>Sarvang Abhyanga + Shasti Shali Pinda Sweda</i>
5 <sup>th</sup>	<i>Sarvang Abhyanga + Shasti Shali Pinda Sweda</i>
6 <sup>th</sup>	<i>Sarvang Abhyanga + Shasti Shali Pinda Sweda</i>
7 <sup>th</sup>	<i>Sarvang Abhyanga + Shasti Shali Pinda Sweda</i>
8 <sup>th</sup>	<i>Sarvang Abhyanga + Shasti Shali Pinda Sweda</i>
9 <sup>th</sup>	<i>Sarvang Abhyanga + Shasti Shali Pinda Sweda</i>
10 <sup>th</sup>	<i>Sarvang Abhyanga + Shasti Shali Pinda Sweda</i>
11 <sup>th</sup>	<i>Sarvang Abhyanga + Shasti Shali Pinda Sweda</i>
12 <sup>th</sup>	<i>Sarvang Taildhara + Anuvasana Basti</i> - (50ml.)
13 <sup>th</sup>	<i>Sarvang Taildhara + Anuvasana Basti</i> - (50ml.)
14 <sup>th</sup>	<i>Sarvang Taildhara + Niruha Basti</i> - 300ml. ( <i>Yapana</i> )
15 <sup>th</sup>	<i>Shasti Shali Pinda Sweda + Anuvasana Basti</i> - 50ml. ( <i>Ksheerbala oil</i> )
16 <sup>th</sup>	<i>Sarvang Taildhara + Niruha Basti</i> - 300ml. ( <i>Yapana</i> )
17 <sup>th</sup>	<i>Sarvang Taildhara + Anuvasana Basti</i> - (50ml.)
18 <sup>th</sup>	<i>Sarvang Taildhara + Niruha Basti</i> - 300ml. ( <i>Yapana</i> )
19 <sup>th</sup>	<i>Sarvang Taildhara + Anuvasana Basti</i> - (50ml.)
20 <sup>th</sup>	<i>Sarvang Taildhara</i>
21 <sup>st</sup>	<i>Sarvang Taildhara</i>

**Table 4: Oral treatment given during and after therapy**

Oral drugs	Duration
1. <i>Dashmoola Kwath</i> - 20ml. B.D empty stomach 2. <i>Chitrakadi Vati</i> - 1 tab. B.D. 3. <i>Swarna Vasant Malini Rasa</i> - 50mg. <i>Dhatriloha</i> - 100mg. <i>Sitopaladi Churna</i> - 250mg. B.D. after meal with honey 4. <i>Drakshaasava</i> - 10ml. BD after meal	Initial 21 days (during therapy)
5. <i>Dashmoola Kwath</i> - 20ml. B.D empty stomach 6. <i>Praval Pishti</i> - 50mg. <i>Pippali Churna</i> - 50mg.	For 6 months (after therapy)

<p><i>BalaChurna</i>-100mg.  <i>Ashwagandha Churna</i>- 500mg.          B.D. after meal with milk          7. <i>Drakshaasava</i>- 10ml. BD after meal</p>	
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## MATERIALS AND METHODS

**Ruksha Udwartana**- Was done for initial 3 days in both sittings (30 minutes each day), using *Yava Churna* and Bengal gram flour (1:2).

**Sarvanga Abhyanga**- Was done for 8 days using *Mahanarayana* oil in first sitting and *Dhanwantara* oil in second sitting. *Abhyanga* was done for 45 minutes each day in described seven postures.

**Shashti-shali Pinda Sweda**-*Shashti* rice bolus was prepared after boiling it with *Dashmoola* and *Bala* decoction. After preparation *Ashwagandha* powder was added and *Pottalis* were made. The process was done for 60 minutes or until appearance of symptoms of *Samyaka Swedana*.

### Basti

**Yoga Basti**- The *Basti* was given for 8 days including *Anuvasana Basti* using *Ksheerbala* oil (50ml.) and *Niruha Basti* was prepared using honey- 25ml., *Lavana*- 5gm., *Sneha*-50ml. (*Ksheerbala* oil), *Kalka*- 5gm. (*Shatavaha*), *Kwath*- 200ml. (*Dashmoola Kwath*).

**Yapana Basti**- Honey- 25ml. *Lavana*- 5gm., *Sneha* - 75ml. (*Bala* oil) *Kalka*- 6gm. (*Shatavaha*) *Kwath*-*Madhyashti Ksheer Kwath* 100ml., *Mamsa Rasa* 50ml.

**Sarvang Taildhara**- In this lukewarm *Dhanwantara* oil was poured all over the body in a special rhythmic pattern continuously for about 60 minutes per day.

## OBSERVATIONS AND RESULTS

Observations were made before initiation of treatment and after completion of second sitting of therapy after a year. Improvement was noticed in pain, muscle tone, muscle power, muscle bulk which was depicted through increase in body weight and visual appearance and bowel habit of patient was improved as compared to before with daily evacuation of faeces.

Signs and Symptoms	BT	AT
<b>Pain</b>	3 (VAS scoring for pain)	7 (VAS scoring)
<b>Muscle Tone</b>	3 (Modified Ashworth Scale)	1+
<b>Muscle Power</b>	1/5 (B/L lower extremities) 2/5 (B/L upper extremities)	2/5 (B/L lower extremities) 3/5 (B/L upper extremities)
<b>Muscle Bulk</b>	highly emaciated	has gained muscle bulk
<b>Weight</b>	22.5 kg.	26 kg.
<b>Bowel Habit</b>	Hard stool once in 3 days	Semisolid stools once a day

## DISCUSSION

As a result of neurological deficit developed after TB spine patient developed paraparesis, increased muscle tone and decreased muscle bulk. He also suffered from generalized body pain. His weight continuously decreased due to diseases itself and antitubercular medications also contributed to the factor. ATD cured his tubercular infection but also caused decrease in appetite and poor bowel habit. Ayurveda correlates this disease with *Sarvang Vataroga* on the basis of symptoms, also there is weakness of *Jatharagni* and *Dhatwagni* which causes depletion of *Dhatu*. So, Ayurvedic treatment not only focused on dealing with neurological complications but also on correction of *Agni* (digestive fire) which weaken during disease and ATT. Initial aim of

treatment was correction of digestive fire which was achieved through therapy like *Ruksha Udwartana* and *Deepana- Pachana* drugs like- *Chitrakadi Vati*, *Baalchaturbhadra Churna*, *Drakshaasava*. After correction of digestive fire next aim was to provide nourishment to *Dhatu*s and increase strength of patient. Therapy like *Abhyanga*, *Basti*, *Shashtishali Pinda Sweda*, *Sarvang Taildhara* and medicines *Praval Pishti*, *Ashwagandha Churna*, *Shatavari Churna* helped achieving this aim.

*Ruksha Udwartana* helps in improving functioning of *Bhrajaka Pitta* and opening skin pores which enhance the absorption of materials used further.

*Abhyanga* is told as *Vatahara*, *Pushtikara*, *Dadhyakara*<sup>[7]</sup> which replenishes the loss of *Dhatu*, provide nourishment to muscles and relieves pain. Massage causes movement of the muscles thereby accelerating the blood supply, which in turn helps in relieving the muscular fatigue and reducing stiffness. It also helps in improving sensory functions.

*Shashtishali Pinda Sweda* alleviates *Vata*, relieves muscle pain and stiffness, improves muscle strength and provides nourishment.

*Sarvang Taildhara* provides benefit of both *Snehana* and *Swedana*. Lukewarm Oil when poured for a fixed duration provides nourishment to tissue and relieves muscle spasm.

*Basti- Dashmoola Kwath Niruha Basti* alleviates *Vata* which ultimately helps in relieving *Vata* symptoms. *Yapana Basti* is said to possess *Rasayana* effect and provides longevity. Thus, it provides added benefits of replenishment of *Mamsa Dhatu* and improving motor functions.

*Ashwagandha* is well known rejuvenator which has proven benefits like- efficient weight gain,<sup>[8]</sup> neuroregenerative effect<sup>[9]</sup> thus, helped in increasing muscle bulk and improving symptoms of cord compression.

*Dhatriloha* has *Rasayana* effect which helped in replenishing depleted *Dhatu*.

## CONCLUSION

Here cervical cord compression developed after TB spine which results in gradual muscle atrophy, loss of function and emaciation of patient. ATT helped patient in managing tuberculosis but thereafter patient developed neurological complications. Ayurvedic treatment not only helped patient in managing neurological complications but also corrected his *Agni*, replenishes loss of *Dhatu* which finally helped him regaining body weight, posture and strength. The treatment will be continued further. This study may prove beneficial in

dealing with such cases with the help of Ayurvedic intervention, however further research is required to carry this study in larger group of patients for longer duration.

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### \*Address for correspondence

#### Dr Mohita Bohra

Assistant Professor,  
Dept. of Panchkarma,  
Om Ayurvedic Medical College,  
Hospital and Research Centre,  
Uttarakhand, India.  
Email: [mohita.india@gmail.com](mailto:mohita.india@gmail.com)

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