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Case Study

# AYURVEDIC APPROACH IN THORACIC MYELOPATHY

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**ABSTRACT**

Thoracic myelopathy is a disorder characterized by spinal cord compression occurring in the thoracic region of the spine. It is relatively rare due to the limited degenerative changes that occur at this level of the spine, largely because the rib cage restricts movement in that area. A 54-year female patient complaint of burning pain over bilateral foot since 1 year and aggravated since 3-4 months, weakness of bilateral lower limbs for 3 months, loss of sensation over lower back, lower abdomen, bilateral lower limbs for 2weeks, urinary retention and feacal incontinence for 2 weeks came to the OPD of our hospital. The condition was diagnosed as thoracic compressive myelopathy through clinical examination and MRI spine. On the basis of clinical feature condition is similar to *Kaphavrutha vata* in Ayurveda. Patient underwent Ayurvedic treatment modalities *Rooksha swedam* (dry sudation using medicinal powder*), Sankara sweda, Dasamoola kashaya dhara, Abhyangam* (oil massage), *Matravasthi* (oil enema) and *Kayasekam*. After treatment symptoms reduced and Sensory, motor and autonomic functions improved. The treatment outcome suggests that ayurvedic treatment modalities can be a valuable alternative management for spinal cord disorder.

## INTRODUCTION

Myelopathy refers to a symptomatic injury of the spinal cord that can arise from various causes such as degeneration, tumours, inflammation, infection, and vascular anomalies. It can happen at any level of the spinal cord, but it is most frequently seen in the cervical region and less common in thoracic region. Thoracic spine is made up of 12 vertebrae, ranging from T1 to T12. Key distinguishing feature of the thoracic vertebrae are their body size, which is larger than that of cervical vertebrae but smaller than that of the lumbar vertebrae, as well as their pointed and downward sloping spinous processes. and articulation with the rib. The rib cage limits the movement of the thoracic spine more than that of the cervical spine, which is believed to be a factor in the lower occurrence of the degenerative spinal myelopathy in the thoracic region compared to the cervical region. [1-2].

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The condition that may leads to thoracic myelopathy consist of ossification of the posterior longitudinal ligament (OPLL), Ossification of the ligamentum flavum (OLF), Spinal cord tumors, trauma, Infection, thoracic disc diseases and spinal cord herniation. Thoracic myelopathy may present with symptoms including leg pain, upper and lower back pain, motor and sensory impairment and disturbance in bowel and bladder function [3]. As per Ayurvedic guidelines, this condition may be correlated with *Kaphavruta vyana vata*[4] and *Kaphavruta apana vata*[5] having *Lakshanas* (symptoms) like *Skalitha gati* (impairment in walking), *Parvasthi graham* (catching in joints) *Gurutha angeshu* (heaviness over body), *Moothra shakruth apravarthi* (obstruction to urine and feces). Hence the treatment was planned with Ayurveda intervention followed the protocol of *Kaphavruta vata.*

### Case History

A 54 years female patient came to our OPD in a wheel chair with complaints of burning pain over bilateral foot since 1 year and aggravated since 3-4 months, weakness of bilateral lower limbs for 3 months, loss of sensation over lower back, lower abdomen, bilateral lower limbs for 2 weeks, urinary retention and fecal incontinence for 2 weeks.

Symptoms had a gradual onset with burning pain over bilateral foot and low back pain. She mentioned her burning pain is similar to the sensation caused when rubbed with chillies. Pain is more at night and when exposure to cold and it got relief when taking rest. when pain got more severe, she consulted a physician and took medicine. Gradually she noticed bilateral lower limb weakness hampering her daily activities. With the passage of time, she had recurrent falls while walking and thus she used to walk slowly keeping her leg wide apart, which made her much more comfortable during walking. Two weeks back the condition become more severe with loss of sensation and complete weakness of lower limb along with walking difficulty which made her bedridden. Later that urinary retention and feacal incontinence also developed. The patient consulted an orthopedic doctor and suggested surgery. They came to our hospital because they were unwilling to undergo surgery. She had a past history of papillary thyroid carcinoma– Underwent surgery in 2016.

**Drug history**

- Thyronorm 125 mg (1-0-0)

**Physical examination**

**General examination**

- General assessment of illness: Moderate
- Built and state of nutrition: Well-built and well nourished
- Attitude: Normal
- Gait: Not elicited (as the patient was bedridden)
- Decubitus: Supine position

**Personal history**

Appetite - Reduced,
Sleep - Disturbed
Micturition - Retention since 7 days (catheterization was done)
Bowel - Incontinence since 7 days
Tongue - Uncoated

**2) Local examination**

**Table 1: Examination of spine and other joints**

| S.No. | Joints | Inspection | Palpation | Rage of motion |
|---|---|---|---|---|
| 1 | Thoracic spine | No spinal deformities | No tenderness | |
| 2 | Lumbosacral spine | No spinal deformities or swelling | No tenderness | Flexion, extension, lateral flexion unable to perform |
| 3 | Hip joints | No abnormality detected | No tenderness | All movements of joint unable to perform |
| 4 | Knee joints | No abnormality detected | No tenderness | All movements of joint unable to perform |
| 5 | Ankle joints | No abnormality detected | No tenderness | All movements of joint unable to perform |
| 6 | Cervical spine and shoulder joint | No abnormality detected | No tenderness | All movements of joint possible |
| 7 | Elbow and wrist joint | No abnormality detected | No tenderness | All movements of joint possible |

**Table 2: Tendon reflexes**

| S.No. | Reflex | Right | Left |
|---|---|---|---|
| 1 | Knee jerk | +3 | +3 |
| 2 | Ankle jerk | +4 | +4 |
| 3 | Plantar reflex | +ve | +ve |
| 4 | Ankle clonus | +ve | +ve |

**Table 3: Muscle power**

| S.No. | Action tested | Right | Left |
|---|---|---|---|
| 1 | Hip flexion | 0/5 | 0/5 |
| 2 | Abduction of thigh | 0/5 | 0/5 |
| 3 | Abduction and internal rotation thigh | 0/5 | 0/5 |
| 4 | Extension of thigh | 0/5 | 0/5 |
| **5** | Flexion of knee | 0/5 | 0/5 |
| 6 | Extension of knee | 1/5 | 1/5 |
| 7 | Dorsiflexion of foot | 0/5 | 0/5 |
| 8 | Plantarflexion of foot | 0/5 | 0/5 |
| 9 | Dorsiflexion big toe | 0/5 | 0/5 |

**Muscle Tone**

Bilateral Upper limbs: Normal

Bilateral Lower limbs: Spastic

**Muscle bulk**

No wasting of calf and thigh muscle

**Sensory System**

**Superficial and Deep sensation**

- Touch, pain and temperature sensation are normal From C1-T8 nerve root.
- Touch - Hypoesthesia below umbilicus (T9- S5 dermatome)
- Temperature – impaired (T9- S5 dermatome)
- Pain – Sensation impaired (T9- S5 dermatome)

**Investigations (MRI Dorsal Spine 09/03/2024)**

- D1-2 disc: Calcified PLL along with posterior disc bulge abutting ventral cord surface.
- D4-5 disc: Bilateral ligamentum flavum calcification/ossification along with calcified PLL and central disc bulge stenosing the spinal canal and compressing the cord at D4 subendplate level. No obvious cord signal alterations at present.
- D5 D6 disc posterior longitudinal ligament calcification along with flavum calcification abutting cord surface, no cord signal changes.
- D6-7 disc: Large posterior calcified disc/calcified PLL, posteriorly displacing and severely flattening the cord with cord hyperintensity.
- D9-10 disc: Heavily calcified ligamentum flavum severely stenosing the spinal canal, anteriorly displacing and severely flattening the cord with resultant cord hyperintensity at D9 mid body level.
- D10-11disc: Bilateral flavum calcification abutting posterior cord surface, no cord signal changes.

**Intervention**

The treatment was planned according to the protocol of *Kaphavrut avata chikitsa* which include *Swedana* (sudation), which was achieved with *Rookasha sweda* (dry sudation), *Sankara swedam, Dasamoola dhara*. Each treatment was followed by *Virechana* (purgation). After *Swedana (*sudation), both internal and external *Snehana* was done.

**Table 4: Timeline and progress**

| S.No | Date | Treatment | No. of days | Changes noted |
|---|---|---|---|---|
| 1 | 15/3/2024 | *Rooksha Swedam* with *Kolakulathathi Choornam* | 7 days | Deep sensation regained at dermatone T9, L2, L3 and L5 |
| 2 | 22/3/2024 | *Virechana* with *Nimbamrita Erandam* 25ml | 1 days | 2 Vega attained |
| 3 | 23/3/2024 | *Sankara Sweda* | 7 days | Deep sensation regained at dermatome T10, T11, T12, L4 and superficial sensation regained at L4-L5 dermatome |
| 4 | 30/3/2024 | *Virechana* with *Nimbamrita Erandam* 25ml | 1 days | 3 *Vega* attained |
| 5 | 31/3/2024 | *Dasamoola Ksheeradhara* | 2 days | Burning pain aggravate over bilateral lower limbs |
| 6 | 2/4/2024 | *Dasamoola Kashaya Dhara* | 7 days | ▪ Deep sensation regained at S1-S5 dermatome<br>▪ Superficial sensation regained at T9-T12 dermatome<br>▪ Burning pain reduced |
| 7 | 10/3/2024 | *Sneha Panam* with *Karaskara Ghritham* | 2 days<br>Day 1: 25ml (6.30am)<br>Day 2: 50ml (6.30am) | Burning pain aggravated over bilateral lower limbs |
| 8 | 12/4/2024 | *Abhyangam* with *Dhanwantharam Tailam + Sahacharadi Taila + Mathra Vasthi* with *Dhanwantharam Mezhuku Pakam* | 7 days | ▪ Aggravated burning pain reduced<br>▪ Superficial sensation regained at L1-L3<br>▪ All muscle tone become Normotonic<br>▪ Dorsiflexion and plantar flexion of foot become 3/5 in power<br>▪ Control of bowel attained - 5th day |

| | | | | |
|---|---|---|---|---|
| 9 | 19/4/2024 | *Virechana* with *Nimbamrita Erandam 25ml* | 1 day | • 2 *Vega* attained<br>• Followed by 6 days of *Peyadi* karma<br>• Muscle power (knee joint and hip joint) become -3/5. |
| 10 | 26/4/2024 | *Kayasekam* with *Dhanwantharam Tailam + Sahacharadi Tailam* | 7 days | Patient stands with support |

**Table 5: Internal medication**

| S.No | Medicine | Duration | Dose | Time |
|---|---|---|---|---|
| 1 | *Gandharvahastadi Kashayam* | 21/3/2023 to 28/4/2023 | 90ml | Twice daily before food |
| 2 | *Sahacharadi Kashayam* | 21/3/2023 to 28/4/2023 | 90ml | Twice daily before food |
| 3 | *Shaddharanam* Tablet | 21/3/2023 to 28/4/2023 | 1 Tablet | Twice after food |

**Follow up and outcome**

After 45 days of Ayurveda treatment patient regained full sensation of lower limbs, control of bowel attained and able to stand with support but urinary retention persists. On discharge patient was prescribed *Dasamoola rasnadi kashayam* 90ml thrice daily with *Gandharva erandam* 1 tea spoon, *Chandra prabha (1-0-1), Gandharva erandam*– 10ml weekly 3 days morning for 1 month. After one month of follow up patient had no specific new improvements.

**DISCUSSION**

The exact cause of calcification in the Posterior longitudinal ligament (OPPL)and Ligamentum flavum (OLF) remains uncertain. However, two contributing have been proposed, systematic factors and local factors. The former includes heredity, abnormal metabolism of carbohydrates, calcium, abnormal secretion of gender hormonean degeneration of ligaments, local factors include mechanical stress[6].

Here the patient had a history of CA thyroid which may leading to calcium metabolism abnormality which finally leadings to calcification of PLL and LF. Due to intake of *Snigdha Guru madhura Ahara* (taking unctuous and sweet food) daily and *Vegadharana* (suppression of natural urges*), Akala shayana* (untimely sleep)*, Chintha* (over thinking) leads to aggravation of *Ama* and *Kapha*. This *Kapha Sthana samsraya* (lodgment) at *Kati pradesha* (lower back area) leading to *Marga avarodham* (obstruction of passage) of *Vyana vayu* and *Apana vayu* which produce *Lakshanas* (symptoms) like *Skalitha gati* (impairment in walking), *Parvasthi graham* (catching in joints) *Gurutha angeshu* (heaviness over body), *Moothra shakruth apravarthi* (no elimination urine and feces). Thus, *Kapha hara kriya* (reducing the *Kapha*), cleaning the *Srothas (*channels) and optimizing the course of *Vata* are the principle factors in treatment. Thus, incorporating *Rookshana, Amapachana* (burning *Ama*)*, Deepana* (ignite *Agni*)*, Swedana* (sudation)*, Koshtashodana* (clearing the gastrointestinal tract) and *Brihmana* (nourishing) was done.

**Probable mode of action**

*Rooksha sweda* (dry sudation) with *Kolakulathadi choornam* [7] was done initially. *Swedana* help to pacify *Kapha* and facilitates the removal of the *Avarana* to *Gati* of *Vata*. Due to the effect of heat on the sensory nerve ending there will be a reflex stimulation of sweat gland in the areas exposed to heat. This raise in temperature induced muscle relaxation and increased the efficacy of muscle action. After *Rooksha sweda* patient feels lightness in body and increased appetite. But, burning pain persist so for more *Rookshana, 'Sankara sweda*' was started. This help In pacifying *Kapha dosha*.

After 2 weeks of *Rookshana, Dasamoola ksheera dhara* done. After 2 days of *Dasamoola ksheera dhara* burning pain increased. In *Dasamoola ksheera dhara, Dasamoola* is having *Ruksha guna* (non-unctuousness) and *Ushna virya* (hot potency), *Shothahara* (anti-inflammatory)*, Soolahara* (analgesic) property[8] and *Ksheera*[9] (milk) having *Madhura* (sweet), *Sheta* (cold*), Snigdha guna* (unctuous)*,* thus incorporating *Ksheera* to *Dasamoola* leads to *Vatapittahara* (reducing *Vata* and *Pitta*) property, thus having the chance for *Kapha* aggravation. So stopped *Dasamoola ksheera dhara* and continued as *Dasamoolakashaya Dhara. Dasamoola kashaya dhara* helps in *Stambhagnam* (reduce stiffness) by its *Usna guna* (hot potency), also *Gauravagnam* (reduce heaviness) which give lightness to body. Ultimately dissolution of *Kapha dosha* which was adhered to the channels was attained

*Dasamoola kashaya* mainly act on *Kapha vata dosha*. Thus, after this patient feels deep pain sensation, temperature sensation and reduced burning pain. Thus, knowing that the normal *Gati* of *Vata* has been attained with loss of *Kapha avarana*. Next started *Snehapana* (internal administration of ghee) with *Karaskara ghrita. Karaskara ghrita* is used here because it is best indicated for *Daha ruja* (burning

pain) Indication of *Karaskara ghrita* in classicals are *Vata rakta, Jannu vata* (*Vata* lodged at knee), *Daha* (burning), *Shola* (pain), *Shota* (inflammation). But after 2 days of *Sneha pana* (internal administration of ghee) swelling over bilateral ankle was noticed hence stopped. *Abhyanga ushma sweda* (oil massage and streaming) started with *Dhanwanthara tailam* along with *Matravasthi* (oil enema) with *Dhanwanthara* and *Sahacharadi taila mezhuku paka*[10]. *Abhyanga* having *Snigdha* (unctuous), *Mrudu* (soft), *Guru guna* help in pacifying *Vata dosha, Ushma sweda* helps in *Srothomukha vishodhana* (clearing the obstruction), normal *Gati* of *Vatha*. After this treatment patient starts to feel urge of defecation and also superficial sensation was regained, this shows normal *Gati* of both *Vyana vayu* and *Apana vayu* attained. *Kayaseka* was done with *Dhanwanthara taila* which mainly focus on muscle weakness. *Virechana* does the detoxification which leads to better absorption of other treatment and improves *Agni* (gastric fire).

**Strength of the study**

In case of myelopathy main treatment choice is surgery, but all the patients are not affordable for this and surgical correction also not giving 100% relief in sign and symptoms. In this case Panchakarma treatment along with internal medication help the patient to relieve symptoms and improve quality of life. This may unfold a new way of treatment for spinal cord disorder.

**CONCLUSION**

The treatment outcomes suggest that Ayurvedic treatment modalities can be a valuable adjuvant in managing spinal cord disorders. Ayurvedic treatments can support recovery and improve quality of life for patients with thoracic myelopathy. Myelopathy is a progressive neurological condition so conventional medical care remains essential.

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