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Ayurvedic approach to Cervical Myelopathy - A Case Report

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ABSTRACT

Cervical myelopathy is a condition describing a compression of the spinal cord at the cervical level resulting in spasticity, hyperreflexia, hand clumsiness and gait disturbances. This progresses in a stepwise manner with functional decline and significant paralysis. Decompression surgery is necessary if conservative treatment fails. *Sarvangavata* is the one disease in *Ayurveda* which has the similar clinical features as myelopathy. Here is the case of 59 years old male with reduced strength in both upper and lower extremities, difficulty in getting up from lying position, standing and walking without support, difficulty in grasping and gripping objects, bladder and bowel incontinence for 6 months and was diagnosed with Cervical Myelopathy. MRI of Cervical Spine showed C4-C5 canal stenosis with myelopathy. *Udwartana*, *Parisheka Sweda*, *Abhyanga*, *Shashtika Shali Pinda Sweda*, *Basti* and *Shamanoushadhis* were given for the duration of 42 days and assessments were done on the basis of Medical Research Council (MRC) Scale for Muscle Strength, Modified Japanese Orthopaedic Association (mJOA) Score and Myelopathy Disability Index, there was marked improvement in these scales.

Key words: *Ayurveda*, *Basti*, *Panchakarma*, *Sarvangavata*, *Cervical myelopathy*.

INTRODUCTION

Cervical myelopathy is the most serious condition of cervical spondylosis and is the most commonly acquired cause of spinal cord dysfunction among those aged over 55 years.^[1] The incidence of hospitalization in eastern Asia is 4.04 per 100,000 person-years, with higher incidences observed in older and male patients.^[2] Cervical myelopathy can be appreciated

after chronic compression of the spinal cord followed by weakness of limbs, reduced fine motor skills, neck pain and stiffness, intermittent shooting pain and gait disturbances. Cervical myelopathy comprises spondylosis, intervertebral disc herniation, facet arthrosis, ligamentous hypertrophy, calcification and ossification. Myelopathy occurs as a result of three important pathophysiological factors, they are static mechanical factors, dynamic mechanical factors, and spinal cord ischemia.^[3] The natural history of this disorder is usually slow deterioration in a stepwise fashion, with worsening symptoms of gait abnormalities, weakness, sensory changes in limbs and often pain. Definitive therapy consists of surgical decompression, either posterior laminectomy or an anterior approach with resection of the protruded disk and bony material, neuroplasticity and conservative management.^[4]

The description of the clinical signs and symptoms of cervical myelopathy can be interpreted with *Sarvangavata* in *Ayurveda* science. *Sarvangavata* has

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been enlisted among the eighty forms of *Vataja Nanatmaja Vyadhi*.^[5] The symptoms of *Vatavyadhi* includes *Sankocha* (contraction), *Stambhana* (stiffness) and *Shoola* in the joints and bones, *Graha* (spasticity) of extremities, back as well as head, *Shosha* (atrophy) of body parts, *Spandana* (trembling of body), *Gatrasuptata* (numbness), *Hundana* (shrinking) of head, nose, eyes, clavicles region and neck, *Bheda* (breaking pain), *Toda* (pricking pain), *Kampana* (trembling), *Balaindriyabhramsa* (loss of strength and sensory function).^[6] This case report of *Sarvangavata* shows the successful outcome of the *Ayurvedic* intervention such as *Nasya*, *Abhyanga*, *Swedana*, *Basti*, *Jaloukavacharana* and *Shamanaushadhis*.

CASE REPORT

Patient Information

A male patient aged 59 years, k/c/o Hypertension and Type2 Diabetes Mellites Since 6 years, who was conscious and oriented to time, place and person brought in a wheelchair to Kayachikitsa OPD of Sri Dharmasthala Manjunatheshwara (SDM) College of Ayurveda and Hospital, Hassan on 03 August 2023 with the chief complaints of reduced strength in the Bilateral upper and lower limbs, difficulty in getting up from lying position, standing and walking without support, difficulty in grasping and gripping objects, bladder and bowel incontinence, slurred speech, heaviness, pain in bilateral upper and lower limbs and numbness & complete loss of sensation in the bilateral upper and lower limbs since 6 months, got admitted on the same day under IPD No:068982.

Timeline

Date	Relevant medical history
May 1993	Paraparesis & bladder incontinence, took treatment from Orthopedician for 1 week (details not available).
June 2005	Quadriparesis associated/with pain, able to walk without support, Bladder & Bowel (B&B) incontinence.
July 2023	Quadriparesis a/w pain, unable to walk without support, B&B incontinence. Consulted at Bhagwan Mahaveer Jain Hospital, Bangalore and was diagnosed as Cervical Myelopathy. Surgery:

	Cervical4-Cervical5 anterior cervical discectomy, decompression, adhesiolysis, neurolysis & fusion with cage, bone graft under General Anaesthesia (18/07/2023)
03/08/2023 14/09/2023	Treated at SDM, Hassan for 42 days (12 days In-patient & 30 days out-patient)

Clinical Findings

General Examination

Built, nutritional status, hair and nail of the patient are normal, pallor, clubbing, cyanosis, icterus, lymphadenopathy and edema were absent. Blood pressure was 130/80 mm of Hg and pulse rate was 83 beats /minute.

Systemic Examination

- Respiratory system - on auscultation, normal bronchio vascular sounds heard and no abnormality detected.
- Cardiovascular system - S1 S2 heard and no abnormality detected.
- GIT - Per abdomen was soft, nontender, no organomegaly detected.
- Central Nervous System - Conscious and Oriented to time, place and person,

Motor Functions

- Muscle power

Right	UL	Prox	1/5
		Dist	1/5
	LL	Prox	2/5
		Dist	2/5
Left	UL	Prox	2/5
		Dist	2/5
	LL	Prox	2/5
		Dist	2/5

- Deep tendon reflexes: Biceps, triceps, supinator, knee jerk and ankle jerk on both sides were found to be 3+

- Tone: Bilateral upper and lower limb was hypertonic(spastic)
- Sensory functions: Bilateral palm and foot, fine touch - absent, crude touch - present
- Gait - Ataxic with support
- Hand Grip - Right:2/5 left:3/5

Investigation

MRI of Cervical Spine: 17/07/2023: C4 - C5 disc space reduction with disc protrusion with myelopathy of cord with reduction in cervical lordosis

Diagnosis

Sarvangavata - Cervical Myelopathy (C4 - C5)

Treatment

Date	Medication / Dose	Remarks
03/08/2023-05/08/2023 (3 days)	1. <i>Dhanvantara Vati</i> 1 TID B/F 2. <i>Cap. Rasaushadi Yoga</i> 1 TID A/F 3. <i>Naadi Kashaya</i> 100 ml A/F 4. <i>Sarvanga Udwartana</i> followed by <i>Parisheka Sweda</i> with <i>Dashamoola Kwatha</i>	Lightness in the body was obtained by <i>Rukshana & Swedana Rx</i> Aim: Langhana and Shrotoshodhana
06/08/2023-09/08/2023 (4 days)	1 - 3, 4. <i>Sarvanga Abhyanga</i> with <i>Ksheerabala Taila</i> f/b <i>Dashamoola Kwatha Parisheka</i> 6. <i>Anuvasana Basti - Brihat Saindhavadi Taila</i> (80ml)	
10/08/2023-14/08/2023 (5 days)	1 - 4, 5. <i>Sarvanga abhyanga</i> with <i>Ksheerabala Taila</i> f/b <i>Shashtika Shali Pinda Sweda</i> 6. <i>Anuvasana Basthi</i> with <i>Sahacharadi Taila</i> (80ml)	Improvement in Strength was seen by <i>Snehana & Bhrumhana Rx</i>
15/08/2023-14/09/2023 (30 days)	Discharge Medications 1. <i>Dhanvantara Vati</i> 1 TID B/F 2. <i>Cap - Rasaushadi Yoga</i> 1 TID A/F 3. <i>Tab - Anulomana DS</i> 1 HS A/F	

OBSERVATIONS AND RESULTS

The condition of the patient was improved gradually along with the course of treatment. The strength and power of both left upper and lower limb was increased to 4/5 from 1/5 or 2/5, also tone of the muscle were improved and deep tendon reflex were normal after the course of treatment. Gait before treatment was ataxic and at the time of discharge it was reduced and was able to walk without support.

Assessment Scales

MRC Muscle Strength

Parameter			BT	AT
Right	UL	Prox	1	4
		Dist	1	4
	LL	Prox	2	4
		Dist	2	4
Left	UL	Prox	2	4
		Dist	2	4
	LL	Prox	2	4
		Dist	2	4

Modified Japanese Orthopaedic Association (MJOA) Score

Assessment	BT	AT
Upper Limb Motor	1	4
Lower Limb Motor	3	6
Upper Limb Sensory	2	3
Sphincter	0	2
Total (24)	6	15

Myelopathy Disability Index

Assessment	Score	
	BT	AT
Rising are you able to stand up from an armless straight chair	4	1
Rising are you able to get in and out of bed	4	2
Eating are you able to cut your meat	4	2
Eating are you able to lift a full cup or glass to your mouth	4	2

Walking are you able to walk outdoors on flat ground?	3	1
Walking are you able to climb up five steps	4	1
Hygiene are you able to wash and dry your entire body	4	2
Hygiene are you able to get on and off the toilet?	3	1
Grip are you able to open jars which have been previously opened	3	1
Activities are you able to: Get in and out of a car	3	1
Total	36	14

Muscle Tone (Modified Ashworth's Scale)

Assessment	BT	AT
Right upper limb	2	1
Right lower limb	2	1
Left upper limb	1+	1
Left lower limb	1+	1

DISCUSSION

The three main pathophysiologic factors in the development of CSM are static mechanical compression, dynamic mechanical compression and spinal cord ischemia resulting in myelopathy.^[7] *Vata* is vitiated due to several etiological factors like *Margavarana* (~obstruction in natural course of *Vata* such as normal distribution, synthesis of tissues elements) and *Dhatukshaya* (~depletion of body tissue). This vitiated *Vata* leads to *Margavarana* and *Dhatukshaya* in vicious cycle and may lead to manifestation of *Sarvanga Vata*^[8] (~CSM). *Bhrumhana* (~nourishment) is the treatment for *Dhatukshaya*. *Snigdha*, *Srotosodhana*, *Vatanulomana* and treatment which are compatible to *Kapha* and *Pitta Doshas* should be adopted for *Avarana* or *Margavarodha*.^[9]

Udwartana (~Powder massage/Rubbing)

- Udwartana is a form of *Abhyanga* that is done in *Pratiloma Gati* (~against hair follicles). It was done with *Kolakulathadi Choorna*. *Udwartana* helped in

Shrotomukha Vishodhana, removed the *Gurutwa*, *Tandra* and brought *Laghuta* to the body.

- Stimulates both motor and sensory nerve endings in various parts of the body. This stimulation is carried along the sensory fibres of a nerve to the spinal cord and hence to the brain.^[10]

Parisheka Sweda (~Sudation through pouring warm liquids): It is a type of *Drava Sweda* done with *Dashamoola Kwatha*. Due to the virtue of its *Ushna*, *Rukhsa* and *Tridosahara* properties helped in reducing *Shoola*, *Stabdhatata* which were due to vitiated *Vata Dosh*.^[11]

Abyanga (~Oil massage): *Ksheerbala Taila* was used for *Abhyanga*. *Ksheerbala Taila* improved strength. It constitutes of *Bala*, cow milk, and sesame oil, which pacify the *Vata*.^[12]

Shashtika Shali Pinda Sweda (~Milk and rice ball sudation):

- This comes under the category of *Saagnisweda* with *Snigdha Dravyasa*, *Ksheera* and *Shalidhanya*.
- It has *Snigdha*, *Guru*, *Sthira*, *Sheeta*, *Tridoshaghna* and *Bhrumhana* properties.
- Warmth supplied by *Pottali* of *Shashtika Shali* dipped in *Balamoola Kwatha* with *Godugdha* may enhanced the blood circulation, decreased muscular stiffness, increased tendon extensibility, and gave relief from pain.^[13]

Anuvasana Basti (~Medicated oil Enema)

- Vata* is seen as the main aggravating factor and *Basti Chikitsa* is regarded as the prime line of treatment for it. Medicated enema helps to eliminate vitiated *Dosha* from the body, spreads the potency of the drug due to its *Prabhava* (~specific action) and increases the strength. The potency of *Basti* drug acting on *Dosha* brings them into normalcy and provides them with nourishment. Just as the farm gets its nourishment from water supplied through channels, the whole body gets nourishment from *Virya* (~potency) of the enema drug carried by five types of *Vata* through *Srotas* (~bodily channels).^[14]

- Initial 4 Days, *Anuvasana Basti* was given with *Bhrihat Saindhavadi Taila* which has *Deepana, Pachana, Vedanasthapana, Shothahara* and *Vata-Kaphahara properties*.^[15]
- For the next 5 days *Anuvasana Basti* was given with *Sahacharadi Taila*, in which most of the drugs possess *Katu Vipaka, Ushna Virya* and *Laghu, Ruksha Guna* and does *Kaphavata Samana*.^[16] This *Taila* also possess *Bhrumhana, Rasayana* and *Medhya Properties*.^[17] Chemical constituents like Triterpenoids, Phytosterols and Flavonoids present in the *Taila* has neuroprotective property.^[18]

Shamana Aushadhi

Tab. Dhanvantara Vati: The major ingredients are *Ela, Shunti, Haritaki, Jiraka* helps in *Deepana* (~appetizer), *Vatanulomana* (~normalize the movement of *Vata*).^[19]

Rasaushadi Yoga: *Ekgaveera Rasa, Mahavata Vidvamsana Rasa, Vatakulantaka Rasa, Vata Ganajankusha Rasa, Bala, Shuddha Shilajitu* - Each 160mg

- Ekgaveera Rasa* explained in *Rasayoga Sagara* possesses *Deepana, Pachana*(~digestive), *Teekshana, Bhrumhana*(~nourishing) and *Rasayana*(~rejuvenative) property.^[20]
- Vata Vidvamsana Rasa* explained in *Rasa Tantra Sara* possesses *Vatahara, Balya*(~strengthening) and *Rasayana* properties.^[21]
- Vatakulantaka Rasa* explained in *Bhaishajya Ratnavali* Possesses *Deepana, Vatahara, Brimhana* and *Rasayana* properties.^[22]
- Vata Gajankusha Rasa* explained in *Bhaishajya Ratnavali* Possesses *Deepana, Vatanulomana, Balya, Rasayana* and *Vata Pradhana Tridosha Shamaka*.^[23]

Tab. Anulomana: It is a combination of *Swarnapatri (Senna), Ajamoda, Jiraka, Haritaki, Yastimadhu, Shunti* and *Saindhava Lavana* helps in *Anulomana Karma*.^[24]

CONCLUSION

This case study demonstrates the successful management of Cervical Myelopathy by *Ayurveda*

principles. The significant improvement was assessed by Medical Research Council (MRC) Scale for Muscle Strength, Modified Japanese Orthopaedic Association (mJOA) Score and Myelopathy Disability Index. Significant recovery and improvement were seen in muscle power, walking without support, speech, difficulty in getting up from lying position, grasping and gripping objects, heaviness, pain, fine touch and in the quality of life within 42 Days. So, this case was believed to be value documenting.

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