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Ayurveda management of *Adharanga Vata* (Cervical Myelomalacia) – A Case Report

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ABSTRACT

Myelomalacia is a radiological finding in Magnetic Resonance Imaging (MRI), shown as the hypo or hyper-densities in the spinal segments of the affected area. It is associated with focal cord atrophy and is resultant of spinal cord injuries like cord compression in most of the cases. Other causes include ischemic changes, syrinx formation, and cervical spondylosis myelopathy. In Ayurveda it is co-related to the *Adharangavata* (~weakness in the lower limbs). A 69-year old patient was admitted in the apex hospital located in the western ghats in Karnataka with reduced strength in the both the legs and was unable to walk without support. The patient was treated with *Shamanaushadhi* (~Palliative medicines) & *Basti* (medicated enema). The results obtained were promising and encouraging. The patient achieved strength in both the legs and he was able to walk without support for more than 300mts. This approach has shown that cervical myelomalacia can be managed with Ayurveda and helps in avoiding the disease progression and surgical management.

Key words: *Adharangavata*, *Cervical Myelomalacia*, *Basti*, *Ayurveda*, *Case Report*

INTRODUCTION

Myelomalacia is a general term used to define the softening of the spinal cord and can often mean damage or deformity at certain level, which includes history of fall, degenerative disc pathology as an etiological factor. Here such a case of degenerating cervical disorder has been taken and approached with

Ayurveda treatment, as the patient was not willing to undergo surgical intervention. Rationality of publishing this case report is mainly to emphasize the severity of the present condition, role of various Ayurveda treatment modalities, which made the patient recover in very short duration in hospital stay.

PATIENT INFORMATION

A 69 year old male Hindu patient, agriculturist by profession, Known case of Diabetes mellitus and hypertension, was radiologically diagnosed as myelomalacia of cervical spine due to the changes in the C4, C5, C6, C7 disc osteophytes compressing the cord and right nerve root at respective levels visited Kayachikitsa OPD. Patient had complaints of reduced strength in the bilateral (b/l) legs with difficulty in walking without support and with support, difficulty in sitting down, sleeping over the bed and getting up from the bed with support and pain in the low back region since 15 days.

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Presenting complaints

Patient was apparently normal before 15 days, one day he had a fall over the ground suddenly hitting upper back and was rushed to the nearby hospital and diagnosed as hypoglycemia and was managed conservatively, later after 5 days he developed reduced strength in the b/l lower limbs with difficulty in walking without support and with support, difficulty in sitting down, sleeping over the bed and getting up from the bed with support and pain in the low back region which was progressive in nature and associated with the urgency for micturition, for which he was shown to the apex hospital and advised for surgery (details not available). As patient and family members were not willing for surgery, he was brought to our hospital for management.

Treatment history

Patient was on Diabetes Mellitus Medication and Hypertensive Medication, Details are

1. Inj. Insulin Glargine 30units-0-0 s/c b/f (before food)
2. Tab. Helirab-D 1-0-0 b/f
3. Tab. Metformin Hydrochloride (500mg) + Vidagliptin (50mg) 1-0-1 b/f
4. Tab. Pioglitazone Hydrochloride (15mg) + Metformin-SR (500mg) 0-1-0 a/f
5. Tab. Ecosprin 75mg 0-1-0 a/f (after food)
6. Tab. Amlong 5mg 1-0-0 a/f

Surgical History: Underwent Surgery for Intestinal Tumour 5years back

Personal History

His Appetite is unaltered, he is of mixed diet and regular bowel with normal consistency, and having urgency for micturition with most of the times bedwetting, but no e/o incontinence, he is having adequate sleep.

Habits: Quitted alcohol and cigarette smoking after the diagnosis of intestinal tumour.

Clinical Findings

On General Examination the patient was moderately nourished male. Blood pressure: 140/90 mm/hg, Temperature: 98°F; Pulse: 82/min and Respiratory Rate: 16 cycles/min. On examination Pallor, icterus was absent. Central cyanosis, digital clubbing and local Lymphadenopathy was absent. General and localised oedema was absent.

Systemic Examination: Nervous system examination & Musculo system examination (enumerated in table no. 1 with findings before and after treatment)

Dashavidha Pariksha (Ten fold Examination)

Prakrithi (~body constitution) – *Vata-kapha*; *Vikrithi* (~abnormal body constitutions) – *Vata*; *Dhatu* (~tissues affected) – *Asthi* (~bone), *Majja* (~bone marrow); *Satva* (~will power) – *Madhyama* (~moderate); *Sara* (~essence of tissues) – *Madhyama* (~moderate); *Samhanana* (~compactness of body tissues) – *Madhyama* (~moderate); *Pramana* (~measurement of body organs) – *Madhyama* (~moderate); *Satmya* (~suitability) – *Madhyama* (~moderate); *Aharashakti* (~power of food intake) & *Vyayamashakti* (~power of performing activities) – *Madhyama* (~moderate); *Vaya* (~age) – *Vridhha* (~old age).

Ashtavidha Pariksha (Eight fold Examination)

Nadi (~pulse) – *Vataja*; *Mutra* (~micturition) – *Urgency*; *Mala* (~bowel) – Regular; *Jihva* (~tongue) – *Alipta* (~not coated); *Shabdha* (~auditory reflexes) – *Prakritha* (~normal); *Sparsha* (~tactile) – *Prakritha* (~normal); *Drik* (~visual activities) – *Prakritha* (~normal); *Aakrithi* (~body built) – *Madhyama* (~moderate).

Srotopareeksha (~the channels of circulation for tissues)

Involved *Srotas* (~Channels) are *Asthi* (~cartilage) and *Majja* (~bone marrow) & their *Moola* (~origin of channels) are said to be *Meda* (~adipose tissue) and *Janghana* (~Thigh region) and *Asthi* (~cartilage) and *Sandhi* (~Joints). *Lakshanas* of *Asthimajjagata Vata* are *Bhedo Asthi Parvanam* (~pain in the joints and bone involved), *Sandhishoola* (~involved joint pain), *Mamsa Balakshya* (~reduced strength and power of muscles

surrounding the involved joint with wasting of muscles).

Nidana (~etiology/causative factor) Patana (~fall), Abhigatha (~cervical injury), Vardhakyavastha (~old age).

TimeLine pathophysiology



Diagnostic Assessment

As per the Lakshanas (symptoms) and presentation said in the classical texts of Ayurveda, diagnosis was made and in contemporary sciences diagnosis was made through MRI.

Severity of disease

According to the modified Japanese Orthopaedic Association score this case is of moderate Cervical Myelomalacia, and Nurick classification system for degenerative cervical myelopathy this is grade-VI degenerative cervical myelopathy.

Diagnosis: Cervical myelomalacia (~Adharangavata)

Treatment protocol

Treatment was planned according to Dhatukshaya Vatavyadhi Chikitsa (treatment for depleted tissues).

Date	Treatment	Patient condition
On 18 th march 2021 (day of admission)	Jeerakajala 50ml (b/f) in TID dose Tab. Haritakki 0-0-1 (h/s) at bed time Sarvanga Udwarthana + Nadisweda	Reduced strength in the b/l legs, right leg more than left, unable to walk without support, Difficulty in walking with support and difficulty in sitting, Pain in low back,

On 19 th march 2021- 21 st March 2021	Above mentioned treatment and Cap. Neuron 1-0-1 (a/f) Shiropichu with Ksheerabalataila	Pain in the low back reduced slightly
On 22 nd March 2021	Above mentioned treatment and Anuvasana Basti with Ashwagandha Gritha	Mild Improved strength in the b/l legs and was able to sit without support for 5 minutes
From 23 rd March 2021 till 27 th March 2021	Cap. Neuron 1-0-1 (a/f) Astavarga Kashaya ^[1] 15ml thrice a day a/f Sarvanga Abhyanga with Nirgundi Taila ^[2] followed by Nadisweda (~fomentation) Modified Yoga Basti (scheduled Basti and composition was in table no 2) Niruha Basti with Balamoolakashaya with Ksheera. Anuvasana Basti with Ashwagandha Gritha ^[3] - 60ml. Tab. Saptavimshati Guggulu ^[4] 2-0-2 (a/f).	Pain in the low back reduced significantly, improved strength in the b/l legs able to walk for 10 steps without support.

Chikitsa (~Treatment) was planned based on the Bala (Strength) of the Patient, Dosha's (functional aspects of the body) and Sthana (~location) of the Dosha.

1. Jeerakajala 50ml (b/f) in TID dose for Deepana Pachana (~improving digestive fire),
2. Tab. Haritakki 0-0-1 (h/s) at bed time for Vata Anulomana (~facilitating proper movement of Vata Dosha)
3. Sarvanga Udwarthana (~medicated powders (coarse) were taken and rubbed with pressure against the direction of body hairs) with Nadi Sweda (~fomentation), (for removing the

Dhatugata Ama (~improper tissue level metabolism) and improve *Dhatvagni* (~to improve tissue level metabolism) with regular maintenance of input/output chart, temperature and vitals.

4. Cap. Neuron 1-0-1 (a/f) (composition of neuron table no 2)
5. *Shiropichu* (procedure where cotton dipped in medicated oil is placed over the head and tied) with *Ksheera Bala Taila* Once in a day.
6. *Astavarga Kashaya*^[1] 15ml-15ml-15ml (a/f) as the formulation is said to be potent *Vatahara* (~pacifies *Vata Dosha*) and *Brihmana* (~Nourishing depleted *Dhatus*)
7. *Sarvanga Abhyanga* (Medicated oil application with pressure along the direction of body hairs) with *Nirgundi Taila*^[2] with *Nadi Sweda* (~fomentation)
8. *Niruha Basti* (~enema with medicated herbs in more quantity targeting to pacifying the excessive *Doshas*) with *Balamoola Kashaya* with *Ksheera* for 3 days (composition of *Niruha Basti* table no 3)
9. *Anuvasana Basti* (~enema with medicated oil/ghee in less quantity targeting the nourishment for the *Doshas* in lower limit) with *Ashwagandha Gritha*^[3]-60ml.
10. Tab *Saptavimshati Guggulu*^[4] 2-0-2 (a/f).

RESULTS

Patient was assessed before treatment and on 10th day of treatment (day of discharge): Table no. 1

Patient was able to walk without support for about more than 300mts and getting up from the bed without any support, pain in the low back region reduced by 75%.

Duration of treatment: 10 days

Follow up and Outcome: Patient was advised with following medicines for 15 days.

Mashasaptaka Kashaya^[9] 15ml thrice a day (a/f), Tablet. *Ekangaveera Rasa*^[10] 1 tablet twice a day (a/f), Capsule. *Gururasayana* 1 tablet twice a day (a/f)

(composition of *Guru Rasayana* mentioned in table no 4), Tab. *Saptavimshati Guggulu* 1 tablet thrice a day (a/f), *Pratimarsha Nasya* (Medicated nasal drops) with *Mashasaptaka Taila*^[11] 4 drops in each nostril (on empty stomach) twice a day. On follow up, complaints of low back pain reduced completely, and patient was able to walk without support for about 500mts comfortably and was able to perform his routine activities.

Table 1: Examination findings before and after treatment.

Examination		Findings	
		Before Treatment	After Treatment
Higher Mental Functions		Conscious and oriented	
GCS		15/15	
Cranial Nerve Examination		All motor, sensory and mixed branches of cranial nerves are intact	
Motor System			
Gait		Unable to stand	Able to walk for >300mts
Power	Rt hand	5/5	5/5
	Lt hand	5/5	5/5
	Rt leg (flexor)	2/5	4/5
	Lt leg (flexor)	2/5	4/5
	Rt leg (extensor)	1/5	4/5
	Lt leg (extensor)	1/5	4/5
Reflexes	Rt knee	3+	2+
	Lt knee	2+	1+
	Rt ankle	3+	1+

	Lt ankle	1+	1+
Muscle tone		Hypotonic, Flaccid and spasticity, wasting in calf	normal tone, muscle bulk improved in calf in b/l legs
Sensory System - no sensory deficits			
Rt - Right, Lt - Left, GCS - Glasgow coma scale, mts - Metres			

Table 2: Ingredients of Capsule Neuron proprietary medicine.

SN	Ingredient	Karma (action)
1.	<i>Brihatvata Chintamani</i> ^[5]	Vatahara (~Pacifies Vata Dosha)
2.	<i>Dashamoola</i> ^[6]	Vatahara (~Pacifies Vata Dosha) Shothahara (~Anti-inflammatory)
3.	<i>Trayodashanga Guggulu</i> ^[7]	Shoolahara (~relieves pain)
4.	<i>Lashuna (Allium sativum)</i>	Acts as Rasayana (~Neurotonic)
5.	<i>Bala (Sida cardifolia)</i>	Balya & Brihmana (~provides nourishment)
6.	<i>Eranda (Ricinus communis)</i>	Vatahara (~Pacifies Vata Dosha)
7.	<i>Kapikachu (Mucuna pruriens)</i>	Balya

Table 3: Ingredients of Niruha (Ksheera) Basti^[8]

SN	Ingredients	Quantity
1.	<i>Madhu</i> (honey)	60ml
2.	<i>Saindhava Lavana</i> (rock salt)	10g
3.	<i>Ashwagandha Gritha</i> (medicated ghee)	60ml
4.	<i>Kalka (Shatapushpa Churna + Guduchi Churna)</i>	15g each
5.	<i>Balamoola Kashaya</i>	250ml

6.	<i>Avaapa (Ksheera)</i>	100ml		
Modified Basti schedule				
23/03	24/03	25/03	26/03	27/03
	N	N	N	
A	A	A	A	A
N - Niruha Basti, A - Anuvasana Basti				

Table 4: Ingredients of Gururasayana proprietary medicine

SN	Ingredients	Karma (action)
1.	<i>Kokilaksha (Astercantha longifolia)</i>	Raktaprasadana (~blood enhancer)
2.	<i>Musali (Chlorophyllum borivillianum)</i>	Vatahara (~pacifies Vata)
3.	<i>Devadaru (Cedrus deodora)</i>	Vatahara (~pacifies Vata Dosha)
4.	<i>Nagabala (Sida acuiita)</i>	Brihmana (~provides nourishment)
5.	<i>Pushkaramoola (Inula racemosa)</i>	Vataanulomana
6.	<i>Shilajitu</i> (purified edible asphaltum)	Raktashodhaka (~blood purifier)
7.	<i>Lohabhasma</i> (ash of iron)	Rasayana (~rejuvenation)

DISCUSSION

Vataprakopa happens in Vardhaknya^[12] and also due to the Abhigatha, further Dhatukshaya (depletion of tissues) happens to Asthidhathu (bone tissue). As age increases Men and women are equally affected with the spinal pathologies, due to the changes in the chemical composition nucleus pulposus and annular fibrosus, resulting in the progressive loss of the visco-elastic properties of the disc. In this patient the Vatakara Nidana (causative factors which cause Vata Prakopa) like Ahara (diet), Vihara (life style) and associated health conditions had a greater impact over the chronicity of the disease, pathology and

manifestation. Here this case has been treated in terms of *Kevala-Vatavyadhi* due to the *Nidana* and *Samprapti*.

Udwarthana, Abhyanga and Swedana: Here the treatment modalities chosen are also based on the *Brihmana* (nourishment) and *Raktaprasadana*. Primarily, *Udwarthana* having properties like *sthirikaranamangaanam* (which helps in bringing the normal tone to the muscle) by enhancing the blood circulation^[13] it also does the *Karma* (action) of *Vatahara* and *Vata anulomana* by *Siromukhaviviktatvam* (by clearing the channels).^[14] Later *Abhyanga* along with *Swedana* was done in view of pacifying *Vata* and to improve the muscle tone and bulk. *Abhyanga* corrects the direction of *Vata* in *Anulomagati* and *Swedana* helps in *Srotoshuddhi* (cleansing all channels) by correcting the *Vatavaigunya* (improper movement). *Nirgundi Taila* is one formulation in *Vatavyadhi*, which corrects the *Vata* and thus provide nourishment to the affected *Dhatu* takes place in proper manner by providing *Bala*^[15] (strength). **Shiropichu:** it is a kind of *Murdhnitaila* (medicated oil over scalp) explained by the *Sharangadhara*, under the heading of *Murdhnitaila*. Its benefits are pacifying *Vata*. **Ksheera Basti:** *Basti* is said to be *Ardhachikitsa* in *Vatavyadhi*, since this condition is a *Dhatu Kshayajanya Vatavyadhi*, *Ksheerabasti* is adopted which is said to pacify *Vata* and acts as *Brihmana*.^[16] Reduction in the mineralisation leads to impaired bone strength and significant softening of skeleton, which is the characteristic histological feature of osteomalacia. Like-wise old age people who consume low calcium diet not only end up in osteoporosis but also osteomalacia. Here the *Ksheera* we used in the *Basti* is of cow which is one among the rich source of calcium and phosphorus.

CONCLUSION

Myelomalacia being a challenging condition, in terms of dependency on other's for routine activities, pathogenesis and treatment aspect where only surgical intervention and steroids administration are the only way. With Ayurveda line of *Chikitsa* like *Ksheerabasti* and *Snehana Karma* (*Abhyanga* and

Shiropichu) even moderate to severe cases of myelomalacia (even with associated health conditions) will have promising results, while improving the quality of life and making people independent for routine activities.

Patient Perspective: was content with the improvements he observed in the span of 12 days.

Informed Consent: Oral consent regarding documentation as well as publication was obtained from patient, since there is no element, which can lead to revelation of personal identity and masking techniques are used to codify any/all possible links to identify a person, oral consent was taken from the patient and patient family members.

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