

AYURVEDIC MANAGEMENT OF ASTHIMAJJAGATA VATA WSR CEREBRAL ATROPHY – A CASE STUDY

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ABSTRACT

Background: Geriatric Neurological disorders are the age related heterogeneous diseases that affect the body's autonomic, peripheral and central nervous system seen in the older adults. According to WHO over 20% of adults aged 60 and above suffer from mental or neurological disorders. Degenerative disc diseases (viz., cervical and lumbar spondylosis) and age related brain atrophy are one among them. These diseases can be managed through the asthi majjagatava line of treatment. **Brief case report** - A 64 years old male, who was not a k/c/o Hypertension / Diabetes Mellitus / Thyroid dysfunction was said to be asymptomatic 2 years back. Then the patient developed pain in Lowback radiating to bilateral lower limbs, pain in bilateral hip joint then gradually developed tremors in bilateral upper limbs and imbalance while walking with an altered gait. **Methodology** – Brimhana and rasayana therapies were adopted in the form of *Shirodhara*, *Sarvangadhara*, *Sarvanga abhyanga*, *shashtikashali pinda sweda* and *mustadi yapana basti* along with *shamanoushadhis* for a span of 15 days. **Results-** Significant improvement was noted in the signs and symptoms of the condition. **Conclusion** – The diseases afflicting brain and spinal cord can be considered under the spectrum of *Asthi majjagata vata*. This case was treated with the modalities mentioned under the disease context in the classics and found effective in the improvement of the general health status of the patient.

KEYWORDS: *Asthimajjagata vata*, cerebral Atrophy, *Masthishka Apachaya*, *Mustadi yapana basti*.

INTRODUCTION

Geriatric Neurological disorders are the age related heterogeneous diseases that affect the body's autonomic, peripheral and central nervous system seen in the older adults. According to WHO over 20% of adults aged 60 and above suffer from mental or neurological disorders. Degenerative disc diseases (viz., cervical and lumbar spondylosis) and age related brain atrophy are one among them. Brain atrophy refers to a loss of brain cells or a loss in the number of connections between brain cells. It can occur as a result of the natural aging process leading to age related brain atrophy. Brain atrophy can affect one or multiple regions of the brain. The symptoms will vary depending on the location of the atrophy and its severity. Cerebellar degeneration is a process in which neurons in the cerebellum - the area of the brain that controls coordination and balance - deteriorate and die. Diseases that cause cerebellar degeneration can also involve other areas of the central nervous system, including the spinal cord, medulla oblongata,

cerebral cortex, and brain stem. Neurological diseases that feature cerebellar degeneration include ischemic or hemorrhagic stroke, when there is lack of blood flow or oxygen to the cerebellum leading to cerebellar cortical atrophy.

These diseases can be understood under the broad spectrum of *vata vyadhi*. In geriatric age group that is in *jara/ Vriddha avastha vata dosha* is predominant and this sector is more prone to *vata vyadhis*. According to *Acharya Dalhana* the shape of *mastulunga* (Brain) is like frozen Ghee.^[1] Similar explanation is also given by *Acharya Sushruta* where in he has called brain as *mastishkamajja* and its shape has been compared to *Ardhivilina Ghritaakara*.^[2] Thus brain atrophy can be compared with *Mastulungakshaya/Majjakshaya* in Ayurveda. The clinical presentations of brain atrophy and degenerative disc diseases can be understood in terms of *Mastulunga apachaya*, *masthishka kshaya*, *majja dhatu kshaya*, *asthimajjagata vata*, *majja vata*,

asthigata vata etc which are explained by different *Acharyas*. Some of the clinical signs of cerebellar atrophy like tremors are explained under *Asthi majjagata vata* by *Acharya Bhela*. The explanation of clinical findings of degenerative disc diseases can be seen in *Asthimajjagata vata* explained in *Brihatrayees*. Thus on a broader spectrum the diseases of brain and spinal cord can be considered under *Asthi-majjagata vata*.

MATERIALS AND METHODS

Case Report

A 64 years old male, who was not a k/c/o Hypertension / Diabetes Mellitus / Thyroid dysfunction was said to be asymptomatic 2 years back. In 2022 the patient developed pain in Lowback radiating to bilateral lower limbs, pain in bilateral hip joint then gradually developed tremors in bilateral upper limbs and imbalance while walking with an altered gait. Informed consent of the patient was obtained.

Past History - Nothing contributory.

No H/o Hypertension / Diabetes Mellitus / Thyroid dysfunction / Trauma or any other major medical illness.

Surgical history: Nil

Previous treatment history – Ayurvedic medications and has undergone Panchakarma procedures like sarvanga Abhyanga, Bhashpa sweda, kati basti

Family History- No similar complaints seen in the family.

Personal History

Appetite: Reduced

Bowel: Constipated

Micturition: 4-5times/day, 2-3 times at night.

Sleep: Disturbed and Delayed.

Habits: Tea-coffee 2-3 times/day.

General Examination

On the day of examination patient was found to be Moderately nourished, Moderately built, with Height – 160cm and weight 68kg Afebrile, Other parameters like Pallor, Icterus, Clubbing, Cyanosis, Lymphadenopathy, Edema were absent.

Systemic Examination

CVS: S1 S2 Heard, No murmur.

GIT: P/A Soft, non-tender, no organomegaly.

RS: NVBS heard, No added sounds.

CNS:

Higher Motor Function

Consciousness - Conscious

Orientation to time - Intact

Orientation to place - Intact

Orientation to person – Intact

Memory immediate - Intact

Memory recent - Intact

Memory remote - Intact

Intelligence – Moderate

Hallucination - Absent

Delusion - Absent

Emotional disturbance - Absent

Speech – not affected

Handedness - Right

Cranial Nerve Examination - All the Cranial nerves were intact

Table 1: Showing examination findings.

Superficial reflexes	Deep reflexes
<ul style="list-style-type: none"> ▪ Corneal reflex – within normal limit ▪ Abdominal reflex- within normal limit ▪ Plantar reflex - within normal limit 	<ul style="list-style-type: none"> ▪ Biceps jerk – Exaggerated bilaterally ▪ Triceps jerk- diminished bilaterally ▪ Supinator jerk- Diminished bilaterally ▪ Knee jerk- Diminished bilaterally ▪ Ankle jerk- Diminished bilaterally

Table 2: Showing Sensory System Examination findings.

Superficial	Deep	Cortical
Touch – Intact	Touch - Intact	Tactile localization – Present
Temperature – Intact	Temperature - Intact	Tactile Discrimination – Present
Pain – Intact	Pressure - Intact	Graphesthesia - Present

Tone – Normal

Co ordination

- Romberg Sign - positive
- Upper limb: Finger to nose test - possible
- Finger to finger test - possible
- Rapid alternate movements - B/L upper limb - possible
- Lower limb: Heel shin test - possible
- Tandem walking - not possible
- Involuntary movements - Tremors present in both hands
- Gait – Lurching gait

Table 3: Showing Musculoskeletal System Examination findings.

Musculoskeletal system examination	
Tenderness	Present in L2-L3-L4-L5
	Right Left

Straight leg raise test	Positive at 40 degree	Positive at 40 degree
Bregards	Positive	Positive
Femoral Nerve stretch test	Positive	Positive
Lateral compression test	Positive	Positive

VAS score - 8

Ashta sthana pareeksha

- Nadi – Vata pittaja
- Mutra – prakritta
- Mala- Vaikrita (Vibaddha mala)
- Jihwa - Alipta
- Shabda - Prakrita
- Sparsha – Anushna sheeta

- Drik - Prakrita
 - Akriti – Madhyama
- Vata-kapha prakriti with Madhyama sara, Madhyama samhanana, Madhyama satmya, Madhyama satva, Avara vyayamshakti, Madhyama aharasakti and Jaranasakti, Sama pramana.

Investigations

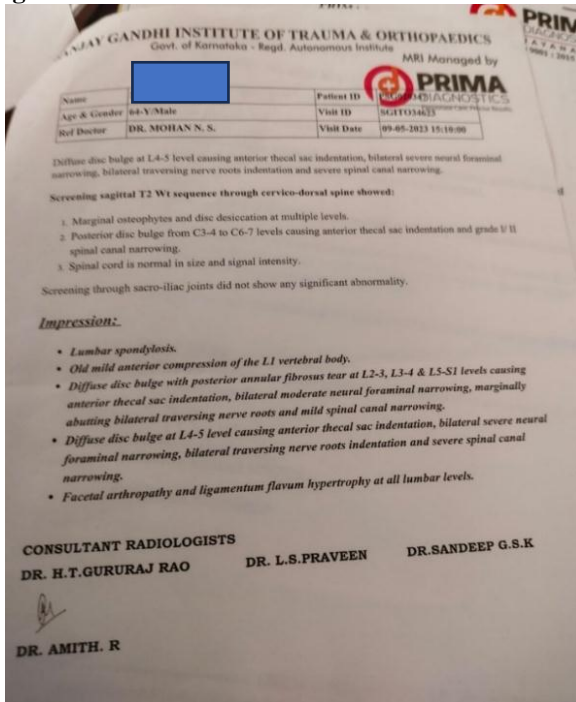


Figure 1

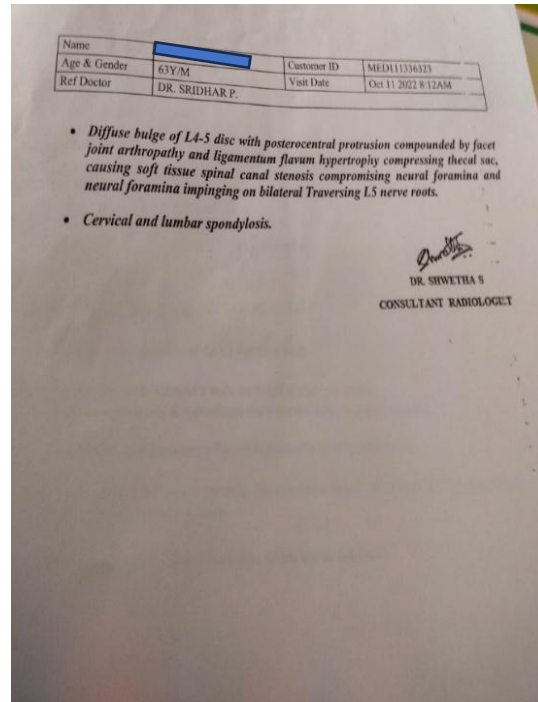


Figure 2

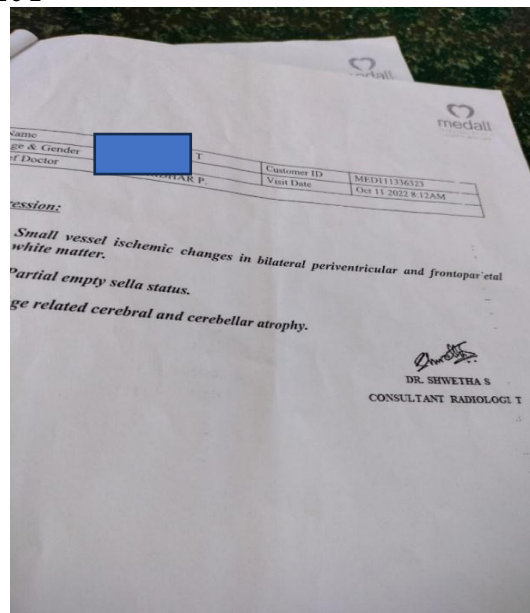


Figure 3

Diagnosis - Ayurvedic Diagnosis was made as *Asthi majjagata vata*.

Therapeutic intervention

Table 4: Therapeutic intervention (Panchakarma).

Date	Intervention	Observations
First 7 days	<i>Shirodhara</i> with <i>ksheerabala taila</i> + <i>Himasagara taila</i>	Day 3- Lightens all over the body Day 4- Reduction in Hip pain by 50%, quality of sleep improved
	<i>Sarvanga taila dhara</i> with <i>ksheerabala taila</i> + <i>Balashwagandha lakshadi taila</i> + <i>Pinda taila</i>	Day 6- reduction in lowbackache by 50 % Day 7- Reduction in hip pain by 70%
From 8 th day	<i>Sarvanga abhyanga</i> with <i>ksheerabala taila</i> + <i>Balashwagandha lakshadi taila</i> followed by <i>Shashtikashali pinda sweda</i>	Day 3 - Reduction in tremors Day 4 - SLR was positive at 60 degree Day 5 – Reduction in lowbackache by 70 %
	<i>Mustadi yapana basti</i> in <i>yoga basti</i> pattern, <i>Anuvasana basti</i> with <i>Ashwagandha ghrita</i>	Day 8 – Gait improved significantly

Table 5: Shamanoushadhis.

Medications	Dose
<i>Balasaireyakadi kashaya</i>	30ml- 0- 30ml with equal water After food
<i>Gandharvahastadi kashaya</i>	30ml- 0- 30ml with equal water Before food
<i>Powder Zandopa</i>	1tsp –0- 1tsp with milk after food
<i>Cap Palsinuron</i>	1-0-1 After food
<i>Cap Lumbatone</i>	1-0-1 After food

Anuvasana basti with *Ashwagandha ghrita* – 70ml.

Table 6: Composition of Niruha basti.

Niruha basti

<i>Madhu</i>	50 ml
<i>Saindhava lavana</i>	6gm
<i>Ashwagandha ghrita</i>	70ml
<i>Mustadi kalka</i>	20gm
<i>Mustadi yapana ksheera paka</i>	300ml
<i>Masha kashaya</i>	100ml

Table 7: Yoga basti pattern.

A	N	A	N	A	N	A	A
15/2/24	16/2/24	17/2/24	18/2/24	19/2/24	20/2/24	21/2/24	22/2/24

Total duration of treatment – 15 Days

RESULTS AND DISCUSSION

Outcome and follow-up

Patient showed significant improvement in the symptoms. SLRT and bregards were found to be negative, Visual Analogue Scale had reduced from 8 to 2. Gait had improved with the reduction tremors.

DISCUSSION

Discussion on disease

Acharya Vagbhata has stated *Bhrama* as a *Lakshana* of *Majjakshaya*.^[3] which can be co related with loss of balance in cerebellar diseases or a positive Rhomberts sign. Also while explaining about *Marma prapta vata* *Acharya Charaka* mentions *vepathu* as a *lakshana*.^[4] This reference throws light on the fact that *Acharyas* has given a clue about brain (*marma*) disorders exhibiting tremors as one of its symptoms. *Acharya Chakrapani* has

mentioned *masthishkya* as *shirogata sneha* and atrophy can be understood as *kshaya* of *shirogata sneha*.^[5] In *Basavarajeeyam* a special type of *Vata vyadhi* namely *majjavata* is explained in which one of the *lakshanas* is *kampa*. According to *Acharya Sushruta Mastulunga Majja* is same as *Majjadhara kala*. In *Majja pradoshaja vikaras Parvaruk, bhrama murcha, tama darshana* are explained. According to *Bhaishajya Ratnavali Mastishka apachaya* leads to *lakshanas* like *shiro atibhramana, murcha, pakshanasha, balahani*.^[6] Also *Acharya Bhela* mentions *vepathu* as a *lakshana* of *Ashtimajjagata vata*. The *Lakshana* of *Asthi Majjagata vata* as per *Acharya Charaka* is *Bhedo asthi parvani* (cracking in bones and joints) *Sandhi shoola* (pain in the joints), *Mamsa bala kshaya, Aswapna* (insomnia), *Santata ruja* (constant pain).^[7] The diseases which come under these are *Katigraha, Gridhrasi* etc. As the patient exhibited the

symptoms of *Gridhrasi* as well as *vepathu* this case was diagnosed as *Asthimajjagata vata*.

Discussion on treatment

Oral medications

Table 8: Discussion on shamanaushadhis.

<i>Balasaireyakadi kashaya</i>	<i>Avarana vata hara and vatanulomaka</i>
<i>Gandharvahastadi kashaya</i>	<i>Malashodhana, Doshanirharana and vatanulomana</i>
<i>Powder Zandopa</i>	With <i>kapikacchu</i> as the main ingredient and is mainly indicated in <i>Kampa</i>
<i>Cap Palsinuron</i>	Mainly <i>shoolahara</i> and is useful in <i>gridhrasi</i>
<i>Cap Lumbatone</i>	Beneficial in relieving <i>Katishoola</i>

■ *Shirodhara* - Acharya Sushruta has mentioned, the main line of treatment in *shirogata vata* under *vatavyadhi chikitsa* as *Murdhni Sneho anilam hanti – murdha taila* procedures like *shirodhara* helps in pacifying *shirogatavata*. *Shiromarma prapta vata* will result in *vepathu* (tremors) and this was evident in the patient. Hence *Shirodhara* was adopted. Acharya Sushruta states application of *Taila* on the *Shiras* helps in combating *Shiroroga* does *Indriya Tarpana* and removes *Shira Shoonyata*, and does *Mastishka Puna purana*. For *Shirodhara Himasagara taila* and *ksheerabala taila* were used as *Ksheerabala taila is brimhana, vatahara, bala veerya prada, pushtikara. Himasagara taila is sheeta veerya brimhana, sarvavata vikarahara* and acts on *murdhastha vata (prana vata)*. And as the patient had *nidraviparyaya* which was caused due to *vata prakopa* these *tailas* were selected.

■ *Sarvanga taila dhara- Balashwagandha lakshadi taila* and *Pinda taila* were used along with *ksheerabala taila* for *Sarvanga dhaara*. As skin is the largest organ and *sparshanendriya (twak)* is predominantly the *vata sthaana*.^[10] *Sarvanga taila dhara* helps in pacifying *sarvadaihika vata*. *Balashwagandha lakshadi taila is pushtikara* and can cure different types of *vatavyadhi*. *Pinda taila* has pain relieving property (*rujapaha*).

■ *Sarvanga abhyanga* – Acharya Dalhana comments that by 900 *Matrakaala* of *Abhyanga* the *Sneha* used reaches the *Majja* through the *Sira Mukha* and pacifies *tridosha*.^[8]

■ *Shashtika shali pinda sweda* is a *brimhana sweda*. It helps in pacifying different types of pain produced by *kevala vata* like *toda, bheda* etc it provides *dehampushti, bala* and pacifies *sarvanga vata*. Helps in Transdermal absorption through lipid media. The contents of *shashtika shali* when processed gets lipid soluble. Since the biological membranes has affinity to lipids the drugs diffuse more leading to more absorption of drugs from skin membrane. *Shashtishali pinda sweda* is carried out for 45 minutes. As the pottali is rubbed gently on the body part during this process, the duration of drug and frequency of the drug on the skin is more which leads to the maximum absorption of drugs. When the pottali is applied, the capillaries at site get

dilated due to warmth. Permeability of capillaries allows the absorption of drug locally. Thereby helps transmit nerve impulses with minimum amount of stimulus for muscular contractions and maintains the strength and elasticity of muscles.

■ Basti

Asthidhara Kala is only described by Acharya Dalhana in his commentary on *Kalpasthanana of Sushruta Samhita* and has quoted that *Purishadhara Kala* is same as *Asthidhara Kala*.^[9] This reference helps us to understand the mode of action of *basti* in *asthi majjagata vikara*. *Basti* which is given through the rectal route that is *purishadhara kala* shows its action on *ashti* and *majja* because of *Purishadhara kala* and *asthidhara kala sahacharya*. *Mustadi yapana basti* is indicated in *janu uru jangha shoola* and is *sadyo balajana and rasayana*. *Masha kashaya* is *balya* and *brimhana* which are opposite to the quality of *vata*. The *veerya* of *basti dravya* is transported by *Apanavayu* to regions of *Samana Vayu*, thus normalizing it. When *Samana Vayu* attains normalcy it corrects the disorders related to it. From *Samana Vayu* it gets transmitted to *Vyana Vayu* and brings it to normalcy. Thus the symptoms like tremors and altered gait got improved when *vyana vata* was corrected as *gati* is controlled by *vyana*. The *veerya* of the *basti dravya* spreads side ways by *vyana*, downwards by *apana*, upwards by *pranavata* just as canals transport water to a field. *Mustadi yapana Basti* with *Ashwagandha ghrita anuvasana basti* is found to be very effective in neurodegenerative disorders and helps in preventing further degeneration.

CONCLUSION

In the present case patient had exhibited multiple clinical symptoms related to brain (age related cerebral and cerebellar atrophy) and spinal cord (degenerative disc diseases). On analyzing the *samprapti* and *lakshana* it was found to be *asthi majjagata vata*. This case was treated with the modalities mentioned under the disease context in the classics and was found to be effective in the improving the overall health status of the patient.

Conflict of interest – Author has no conflict of interest.

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