



Ayurveda Management of Cerebellar Ataxia -A Case Report

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KEYWORDS

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cerebellum,
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ABSTRACT:

Introduction: Cerebellar ataxia is a form of ataxia originating in the cerebellum (a part of the brain responsible for coordination and balance). It can result from various diseases and may present with symptoms such as difficulty in coordinating movements, impaired gait and balance, problems with extremity and eye movements. Lesions in the cerebellum can cause dyssynergia, dysarthria, dysidiadochokinesia, and ataxia of gait and stance.

Objective: To understand the pathophysiology and comprehensive management of cerebellar ataxia through Ayurveda.

Materials and Methods: This case study focuses on a 24-year-old female patient presenting with weakness in all four limbs, difficulty walking, loss of balance, and slurred-slow-monotonous speech for one year. The patient visited the Kayachikitsa Outpatient Department (OPD) at the Government Ayurveda Medical College and Hospital, Mysuru. She was diagnosed with Dhatu Kshayajanya Vatavyadhi (a condition caused by depletion of bodily tissues, leading to Vata imbalance) in Ayurveda. Treatment included Shamana oushadhi (oral medications) and Panchakarma therapy, comprising of Snehana (oleation), Swedana (fomentation), Basti (medicated enemas), and Nasyakarma (nasal administration of medicines) administered at different stages of the disease management.

Results: Significant improvements were observed in the strength and function of the upper and lower extremities, speech, balance, and gait at the end of the treatment.

Discussion and Conclusion: This case underscores the potential of Ayurvedic treatment protocol in managing demyelinating diseases.

INTRODUCTION

The cerebellum, often referred to the "little brain," controls motor activities, such as coordinating eye and body movements. Ataxia is characterized by disturbances in coordinated muscle activity [1]. Common signs and symptoms of ataxia include gait impairment, imbalance while walking, poor coordination of movements, tremors, visual abnormalities, speech disturbances, sensory loss for vibration, abnormal reflexes, and irregular swallowing patterns [2].

The etiology of cerebellar degeneration is complex and often requires neuroimaging, lab assessments, and a thorough family history to determine its cause [3]. This condition is often considered incurable and necessitates multidisciplinary management.

There is no approved drug or standardized treatment for this disease. Although cerebral ataxia is not directly referenced in *Ayurveda*, based on its presentation, it can be categorized under *Vatavyadhi*. Speech disturbances are linked to the *Udana Vayu*, while the dryness and



obstruction associated with *Vata (Rooksha Guna)* contribute to issues like low, dry, and broken voice. Disruption in *Prana* and *Udana* functions affects speech fluency. Movement (*Gati*), originating from "*Gam*" (to move), is a function of *Vyana Vayu*. Thus, the multifaceted approach of *Vatavyadhi Chikitsa* is effective in treating conditions like cerebellar ataxia. Symptom assessment was conducted using the Scale for the Assessment and Rating of Ataxia (SARA) [4].

MATERIALS AND METHODS:

Case Report:

A 24-year-old female patient, with no known history of diabetes mellitus (DM) or hypertension (HTN), was asymptomatic until August 24, 2022, when she experienced a sudden onset of severe headache and vomiting (5-6 episodes). Despite seeking treatment in Hassan, her symptoms persisted with vomiting occurring 4-5 times daily.

On August 30, 2022, the patient developed additional symptoms of dizziness and fatigue, though she had no fever or diarrhea. She was diagnosed with cholelithiasis at HIMS but found no relief. The patient declined an HRCT scan of the temporal bone, and her condition worsened, with fatigue, loss of appetite, and a productive cough by September 5, 2022. She was admitted to a private hospital in Mangalore, where she was diagnosed with acute demyelinating disease and grade 3 papilledema. Despite some relief in vomiting episodes, significant improvement was not observed, and she was discharged on September 16, 2022.

By September 19, 2022, vomiting had completely stopped, but the patient developed new symptoms, including slurred speech, weakness in all four extremities (lower limbs > upper limbs), and an inability to sit, stand, or walk independently. She was taken to NIMHANS for further management but experienced no substantial improvement.

The patient later sought treatment at an AYUSH hospital in Kodagu, again with no relief. On October 22, 2022, she returned to NIMHANS for neurological rehabilitation and occupational therapy but remained unimproved and was discharged.

On October 10, 2023, she visited the *Kayachikitsa* OPD at the Government *Ayurveda* Medical College and

Hospital, Mysuru, for the first time with persistent complaints of weakness in all four extremities, inability to sit, stand, or walk, and monotonous, scanned speech. Follow-ups were conducted on November 30, 2023, April 16, 2024, and June 17, 2024.

Past history: Patient had no history of hypertension, type 2 diabetes mellitus, and thyroid dysfunction, with no surgical history noted.

Family history: All family members were reportedly healthy, with no family history of similar disease and no history of consanguineous marriage.

Personal history: The patient follows a mixed diet with non-vegetarian food once a week, has bowel movements once daily, urinates 4-5 times per day, has a good appetite, and sleeps soundly.

Menstrual history - Amenorrhea for 8 months

General examination:

Parameter	Finding
Height	157 cm
Weight	51 kg
BMI	20.7 kg/m ² (normal)
Built	Moderately built
Pallor	Absent
Icterus	Absent
Cyanosis	Absent
Clubbing	Absent
Lymphadenopathy	Absent
Edema	Absent

Vitals: Patient was afebrile, with a pulse of 70 bpm, blood pressure of 110/70 mmHg, and a respiratory rate of 20 breaths per minute.

Ashtavidha Pariksha: Nadi, Mutra, Mala, Aakriti, and Sparsha Pareeksha were found to be normal, whereas Jihwa was lipta, Shabda Pareeksha revealed scanned (defective) speech, and Netra Pareeksha showed bilateral horizontal nystagmus.



Dashavidha Pariksha: Dashavidha pariksha revealed patient's prakrithi and vikrithi were both Vata-Kaphaja, whereas Saara, Samhanana, Pramana, Sathmya, Vaya, and Aharashakti assessed as Madhyama, Satva as Pravara, and Vyayama Bala as Avara.

Systemic examination: The respiratory system showed equal and adequate bilateral air entry, the cardiovascular system had normal S1 and S2 sounds, and the per abdomen examination revealed a soft and non-tender abdomen.

CNS system examination:

1.Higher Mental Functions: The patient was conscious, cooperative, and oriented to time, place, and person, with intact memory and intelligence and no evidence of illusions, delusions, or hallucinations; however, speech and language examination revealed an abnormality in the form of dysarthria, specifically scanned (cerebellar) speech.

2.Cranial Nerve Examination: Cranial nerve examination revealed horizontal nystagmus with involvement of the oculomotor (III), trochlear (IV), and abducent (VI) nerves, and scanned dysarthric speech was found during hypoglossal nerve examination, while the olfactory, optic, trigeminal, vestibulocochlear, glossopharyngeal, facial, and spinal accessory nerves were intact.

3.Sensory Examination: Revealed no abnormality.

4.Motor system examination: Examination revealed no involuntary movements, normal muscle tone, bulk and muscle power in both upper and lower limbs 5/5.

Reflexes: Superficial reflexes were normal, including both corneal and abdominal reflexes.

DTR	Right (Rt.)	Left (Lt.)
Biceps	Normal	Normal
Triceps	Normal	Normal
Knee	Hyperactive clonus	without Hyperactive without clonus

DTR	Right (Rt.)	Left (Lt.)
Ankle	Normal	Normal
Planter	Normal	Normal

5.Coordination Tests:

- Finger nose test- positive
- Finger chase test- positive
- Heel to shin test- positive
- Dysdiadochokinesia- present
- Intension tremor- absent
- Tandem walking- impaired
- Rebound phenomena- positive

Stance and Gait:

- Stance - broad based stance/gait ataxia
- Tandem walking- present with grade-1

Criteria for assessment-

Improvement of the patient was assessed using *scale for the assessment and rating of ataxia* (SARA scale) [4] before starting the treatment and after the completion of the treatment.

Investigations:

MRI study of brain (07/09/2022): T2/ flair hyperintensities in bilateral parieto-occipital white matter, bilateral splenium and left frontal subcortical white matter.

Contrast MRI of brain (07/09/2022): Hyperintensities in bilateral parieto-occipital white matter R>L splenium of corpus callosum and left frontal subcortical white

USG abdomen and pelvis (27/06/2022): Cholelithiasis

MRI BRAIN PLAIN (02/09/2024): Cerebellar Atrophy

DIAGNOSIS: CEREBELLAR ATAXIA (Acquired)

INTERVENTION:

The condition has been managed with comprehensive Shamana and Panchakarma therapeutic interventions for about a year in five successive visits of admission as shown in the Table 1.



Table 1: Showing intervention adopted in first visit

Visits	Treatment (Panchakarma)	Shamanoushadhi
First visit 10/10/23- 8/11/23 30 days	<ol style="list-style-type: none"> 1. <i>Nasya</i> with <i>Neurocare</i> drops, 6 drops in each nostril -7 days 2. <i>Sarvanga Abhyanga</i> with <i>Ashwagandhabalalakshadi Taila F/B Nadi Sweda</i> 3. <i>Shashtika + Masha Pinda Sweda</i>- for 7 days 4. <i>Karnapoorana & Shiropichu</i> with <i>Madhuyashtyadi Taila</i> for 7 days 5. <i>Musthadi Rajayapana Basti</i> -15 days 6. <i>Anuvasana</i> with <i>Ashwagandhabalalakshadi Taila</i> 7. <i>Shirodhara</i> with <i>Brahmi Taila</i>- 7 days 	<ol style="list-style-type: none"> 1. <i>Ksheerabala</i> 1-0-1 capsule 1 bd after food 2. <i>Kalyanaka Avaleha Churna</i> 1tsp bd with ghee before food 3. <i>Kalyanaka Ghritam</i> 0-0-2 tsp before meals with hot water

Table 2: showing intervention adopted in second visit

Visits	Treatment (Panchakarma)	Shamanoushadhi
Second visit 30/11/23 - 20/12/23 20days	<ol style="list-style-type: none"> 1. <i>Sarvanga Abhyanga</i> with <i>Ashwagandhabalalakshadi Taila</i> 2. <i>Masha Shashtika Shaali Pinda Sweda</i> 3. <i>Nasya Karma</i> with <i>Navaneeta</i> 2.5ml each nostril – 7 days 4. <i>Karnapoorana and Shiropichu</i> with <i>Yashtimadu Taila</i> 5. <i>Matrabasthi</i> with <i>Ashwagandhabalalakshadi Taila +Brahmi Ghritha</i> 60ml – 8 days 	<ol style="list-style-type: none"> 1. <i>Mahayogaraja Guggulu</i> 1 Tid after food 2. <i>Dhanwantara Gulika</i> 1 Tid after food

Table 3: showing intervention adopted in third visit

Visits	Treatment (Panchakarma)	Shamanoushadhi
Third visit 16/04/24- 15/05/24 30 days	<ol style="list-style-type: none"> 1. <i>Sarvanga Abhyanga</i> with <i>Ashwagandhabalalakshadi Taila</i> For 3 Days. 2. <i>Sarvanga Dashamoola Kashayaseka</i> for 3 days 3. <i>Sarvanga Masha-Shashtika Shaali Pinda Sweda</i> for next 15 Days 4. <i>Nasyakarma</i> with <i>Ksheerabala 101</i>, 6 Drops each Nostril 5. <i>Shiropichu</i> with <i>Ksheerabala Taila</i>- 7 Days 6. <i>Mustadi Rajayapana Basthi</i> in <i>Kalabasti</i> pattern 	<ol style="list-style-type: none"> 1. <i>Mahakalyanaka Ghrita</i> 2tsp bd after food 2. <i>Kalyanaka Avaleha Churna</i> 1tsp bd with ghee before food

Table 4: showing intervention adopted in fourth visit

Visits	Treatment (Panchakarma)	Shamanoushadhi
Fourth visit 17/06/24- 16/07/24 30 days	<ol style="list-style-type: none"> 1. <i>Sarvanga Abhyanga</i> with <i>Sahacharadi Taila</i>- 7 Days 2. <i>Sarvanga Udwartana</i> with <i>Triphala Churna + Mudga Churna</i> – 7 Days 3. <i>Masha + Shashtika Shali Pinda Sweda</i> 	<ol style="list-style-type: none"> 1. <i>Kalyanaka Avaleha Churna</i> 1tsp bd with ghee before food 2. <i>Panchagavya Ghrita</i> 2tsp bd with food 3. <i>Gandharvahasthadi</i>



	<p>4. Mustadi Rajayapana Basti in Yogabasti pattern Anuvasana Basti with Kalyanaka Ghrita 25ml +Ksheerabala Taila 25ml</p>	<p>Eranda Taila 10ml + Dashamoola Kashaya 20ml bd before food for 3 days 4. Ashwagandha Churna 1 tsp with milk OD before food</p>
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Table 5: showing intervention adopted in fifth visit

Visits	Treatment (Panchakarma)	Shamanoushadhi
<p>Fifth Visit 12/11/24- 28/11/24 18 days</p>	<p>1. Koshtashodana with dashamoola kwatha +10ml of Gandarvahastadi eranda taila at 7.30 am and 6.30 pm from 12/11/24 to 13/11/24 2. Nabhi and Adhoshaka abhyanga with Ksheerabala taila f/b Nadi sweda 3. Mustadi Rajayapana Basti in kalabasti Pattern Anuvasana Basti With Ashwaganda Ghrita 25ml+Ksheerabala Taila 25ml</p>	<p>1. Kalyanaka avaleha Choorna 1tsp-0-1tsp With ghee before food 2. Panchagavya ghrita 2tsp-0-2tsp with food 3. Ashwagandha choorna 0-0-1tsp with milk before food 4. Suvarna Vacha Prashana daily in morning with honey and ghee</p>

Results:

Improvement of the patient was assessed using SARA scale before starting the treatment and after the completion of the treatment. Markedly improvement was seen after the treatment as shown in the Table 6

Table 6: showing result according SARA scale

Sr.no.	Examination	Score before treatment	Score after treatment
1	Gait	5	2
2	Stance	5	1
3	Sitting	3	0
4	Speech disturbance	5	1
5	Finger chase	2.5	0.5
6	Nose finger test	1.5	1
7	Fast alternating hand movements	2.5	1
8	Heel-shin slide	4	1
	Total score	28.5	7.5

Discussion:

The Vatahara, Brumhana and Rasayana line of treatment was adopted in the present case.

Mahakalyanaka Ghrita⁵- Mahakalyanakaghrita is a potent formulation, mainly administered for ailments related to brain and neuro-psychiatric conditions.



Kalyanaka Avaleha Choorna⁶ - it contains *Haridra, Vacha, Kushta, Ajaji, Ajamoda, Shunti, Pippali, Yashtimadu and Saindava*. It improves memory, makes voice clear, cures hoarseness of voice and aphasia.

Sarvanga Abhyanga (*Ashwagandhabalalakshadi and Sahacharadi Taila*): helps in subsiding *Vata Dosha* and improves the tone of muscle and compactness of body. It improves digestion, regularizes bowels, improves the strength. *Abhyanga* increases peripheral circulation and vasodilation which is responsible to increase more oxygenated blood to the muscles and helps to produce energy in fatigue muscles as well as removal of waste products from the body. For *Sarvanga Abhyanga Ashwagandhabalalakshadi Taila and Sahacharadi taila* were used as they have properties like *Param Pushtikara*, useful in movement disorders and also *Vatahara* in action.

Nasya - *Nasya* was done with neurocare drops, *Navaneeta* and *Ksheera Bala Taila* 101 in first, second and third visit respectively. *Nasya* has nourishing effect on muscles and peripheral nerves. It is effective in fasciculation and peripheral neuropathy.

Mustadi-Yapana Basti- *Mustadi-Yapana Basti* is superior among all the *Basti* and it increases *Bālā* and *Māmsa*. *Mustadi-Yapana Basti* is *Sadyo Bala Janana* and it is the best for *Rasāyana* action. According to *samanyavishesa siddhantā* it can be understood that *māmsa rasa* increase the *Māmsa Dhātu* in the body. Thus *Mustadi-Yapana Basti* gives *Bala* to the patient and prevent further *Vātaprakopa*.

Shashtika Shali and masha Pinda Sweda- *Shashtika Shali and masha Pinda Sweda* was carried out to attain *Brumhana* action. This *Sweda* helps in the nourishment of muscles and peripheral nerves as the ingredients used in this have *Rasayana* property along with *Balya* and *Vatahara* property and thus gives strength to the patient and improves quality of life of patient.

In all the above treatment modality, concentration was given to pacify *Vātadoṣa* and to provide *Balya, Brumhana* and *Rasāyana* effect to the patient.

The assessment was done with **SARA** scale which was previously 28.5 and reduced to 7.5 after the treatment. Overall, the patient showed marked improvement in **imbalance while walking, walking difficulty, and speech**, leading to a significant enhancement in **quality**

of life and betterment of routine daily activities, as reflected by improvements in the assessed scale parameters.

Conclusion:

Presently there is no any approved drug or any specific treatment effective for this disease. The presenting condition of the patient was diagnosed as cerebellar ataxia with special reference to *Dhatu Kshayajanya Sarvanga Vatavyadhi* and *Chikitsa* was adopted considering *Vatavyadhi* line of management. The multidimensional approach of *Vatavyadhi Chikitsa* is helpful in treating the diseases like cerebellar ataxia. The holistic approach by *Ayurvedic Shamana, Shodhana* and *Rasayana Chikitsa* have shown satisfactory outcomes in the present case report.

The results were satisfactory and encouraging. Thus, it can be concluded that ayurvedic management is clinically highly effective in management of cerebellar ataxia. Patient and her family were highly satisfied with results and improvement.

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MRI BRAIN PLAIN (02/09/2024)



Image 1

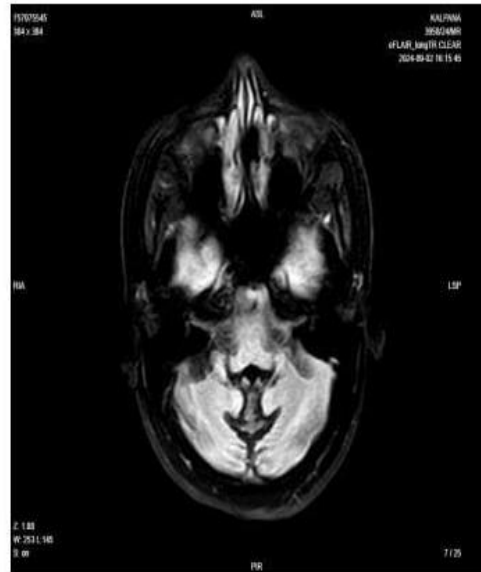


Image 2