



Case Study

AYURVEDIC APPROACH TOWARDS SPINOCEREBELLAR ATAXIA

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Article info

Article History:

Received: 17-08-2022

Revised: 09-09-2022

Accepted: 19-09-2022

KEYWORDS:

Cerebellar Ataxia, Mastulungkshya, Vyadhiviprit Chikitsa, Mastishkya, cerebellum, Panchkarma.

ABSTRACT

Cerebellar ataxia is a form of ataxia originating in the cerebellum (the part of brain that is incharge of balance and coordination). Cerebellar ataxia can occur as a result of many diseases and may present with symptoms of inability to coordinate balance, gait, extremity and eye movements. In cerebellar ataxia progressive atrophy of cerebellum occurs. This can be compared to *Mastulungshya* in Ayurveda. Case Presentation- A 27 years male adult with the complaint of difficulty in walking, writing and difficulty in speaking since two years and also inability in doing daily activities of life got admitted in the *Panchkarma* male ward. On the basis of clinical features and investigation reports of MRI and CT of the brain, diagnosis done was Spino-Cerebellar ataxia. Management and Outcome- *Aacharya Chakrapaani* told that *Mastishkya* as *Shirogata sneha* (ca.sha 7/15) and atrophy means *Kshya* of *Shirogata sneha*. Patient was treated according to above principle, *Brihana Chikitsa* along *Panchkarma* procedures like *Mustaadi yapna basti* and *Sarvang abhyang* and *Shashtikshali pindswedan* was done for one month. Significant improvement was seen in clinical features. Patient walking distance increased from 100 meters to 2-3km daily without fatigue. BARS score was reduced from 12 to 6. His speech was improved and easily understandable. Discussion- In the present case, already damaged part was not recovered but the further progressive damage was prevented. Also there was significant improvement in clinical features. Ayurveda says *Vyadhiviprit chikitsa sidhaant* i.e., *Brihana chikitsa* in *Kshyapradhan vyadhi*. The *Vyadhinidaan* according to Ayurveda sidhant and treating them accordingly may be helpful in many neurological disorders.

INTRODUCTION

Cerebellar ataxia is a form of ataxia originating in cerebellum. Affected parents show symptoms such as unsteadiness, loss of balance, leading to functional limitations and worsened quality of life. In cerebellar ataxia progressive atrophy of cerebellum occurs.

There are two types of cerebellar ataxia – Hereditary

1. Autosomal dominant

- (a) Spinocerebellar ataxia-1
- (b) Spinocerebellar ataxia-2

2. Autosomal recessive

- (a) Friedrichs ataxia
- (b) Ataxia telangiectasia
- (c) Wilson disease

There are many cause of cerebellar ataxia, CNS vasculitis, multiple sclerosis, infection, bleeding, infarction, tumours, direct injury, toxins (e.g. alcohol), genetic disorders.^[1] The etiology of cerebellar degeneration is vast and often complex and requires neuroimaging, lab assessments and a thorough family history to delineate its cause^[2]

Clinical signs of cerebellar ataxia are

- 1. Dysmetria
- 2. Dyssynergia
- 3. Kinetic tremor^[3]

As there is no direct reference of cerebral ataxia in *Ayurvedic Samhita*. So scattered reference of this *Anukta vyadhi* is collected from *Samhitas*.

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<https://doi.org/10.47070/ayushdhara.v9iSuppl1.1037>

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According to *Acharya dalhan* shape of brain is like freezed butter (ghee).^[4]

शिरसोबलाधानम स्त्यानघृताकार मसतुलुंग उच्यते।।(सु चि 2/70)

Similar explanation is also given by Acharya sushrut in *Sushruta samhita sutra sthan* in *Kruta akruta adhyaya*.^[5]

अर्धविलीन घृताकरो मस्तक मज्जा।। (सु सू 23/12)

Cerebellum is a part of mid brain so its atrophy can be compared to *Mastulungkshaya* or *Majjakshya* in *Ayurveda*.

Acharya Vagbhat stated *Bhrama* as a *Lakshan* of *Majjakshya* in *Ayurveda* which can be correlated with loss of balance in cerebellar ataxia.^[6]

माज्जाक्षय -

अस्थना मज्जनिर्षीर्यम भ्रमस्तिमिर दर्शनम।। (वा सू 11/19)

By studying above references and *Yukti pramaan* a case of spinocerebellar ataxia (*Mastulungkshaya*) was treated with *Panchkarma*.

Material and Methods

Various references have been collected from available ayurvedic text and their commentaries, modern texts and related websites have been searched.

Case Presentation

A 27 years male patient was registered from OPD with Regn no.5678 to Department of Panchkarma, RGGPGAC and Hospital, Paprola dist., Kangra, HP, having two years history of progressive difficulty in walking distance, writing, speaking with difficulty and difficulty in doing daily life activities.

History of Present Illness

Patient was quite asymptomatic till 12yrs of age. Then gradually he developed difficulty in maintaining his balance while participating in school sports. He was not able to run fast and started fearing of height. He is now gradually developing difficulty in walking and writing since 2 yrs. Patient also having problem with speech, not able to speak clearly, difficulty in his daily activities. With these complaints, patient came to Panchkarma OPD and got admitted in male Panchkarma ward.

Past History

No relevant H/o of - HTN
DM type 2
Trauma

Family History

Father: Healthy
Mother: Alive having same complaint
Sister: Healthy

Brother: Alive also having same complaint

Personal History

Diet- Mixed (veg, non-veg)
Appetite - Normal
Thirst- Normal
Urine - Not aware
Bowel- Not aware
Addiction - No addiction to smoking and alcohol

Physical Examination

B.P - 110/78 mm hg
P.R - 74/min
Respiration rate - 16/min
Weight - 53kg

General Examination

Ashtavidha Pariksha

- Nadi - Samanya
- Mala - Badh (constipated)
Mutra - Mutranigraha
- Jihwa- Anavrita
- Shabda- Aspashtha (slurred speech)
Sparsh - Samashitoushan
- Netra - Asamanya
- Akriti - Samanya

Dashvidh Pariksha

- Prakriti- Vattokaphaj
- Vikriti- Lakshay nimitaj
- Sara- Madhyam
- Samhanan- Madhyam
- Pramana - 5 feet 3 inch
- Satmya - Madhyam
- Sattav - Madhyam
- Agni
Ahara shakti - Uttam
Jaran shakti - Madhyam
- Vyayama shakti - Heen
- Vaya - Yuva

Systemic Examination

- 1) Respiratory system- B/L air entry equal and adequate
- 2) Cardiovascular system- S1 and S2 normal
- 3) Abdominal system- Soft and non tender

CNS System Examination

A) Higher functions

Consciousness- Fully conscious
Orientation- Fully oriented to time place and person
Memory - Intact
Intelligence- Intact
Hallucination and delusion - Absent

B) Cranial Nerves

Occulomotor, Trochlear, Abducens nerve: Nystagmus present

Hypoglossal nerve: speech- Dysarthria present

Motor System Examination

1) Involuntary movements: Present

Muscle bulk	Rt	Lt
Biceps	25cm	25cm
Forearm	21cm	21cm
Mid thigh	45cm	45cm
Calf muscles	31cm	31cm

3) Muscle tone: Hypotonia

4) Muscle power: WNL in upper limb 5/5 and lower limb 4/5.

5) Coordination:

a) Finger nose test- Dysmetria present

b) Heel to shin test- Dysmetria present

c) Rapid alternative movements

Dysdiadochokinesia present

d) Intension tremor- Present

e) Tandem walking- Impaired

f) Rebound phenomena- Positive

6) Gait- Drunken gait (wide based, staggering)

7) Reflexes

a) Superficial Reflexes

Corneal - normal

Abdominal - normal

Deep Reflexes Rt. Lt.

1) Biceps + +

2) Triceps + +

3) Knee + +

4) Ankle + +

5) Planter + +

0 (Absent)

+ (Depressed/Hypoactive)

++ (Normal)

+++ (Hyperactive without clonus)

++++ (Hyperactive with clonus)

Sensory System

Superficial sensation

1) Touch- Intact

2) Temperature- Normal to heat and cold

3) Pain- Present

Deep Sensation

1) Position- Present

2) Joint- Present

3) Vibration- Present

Criteria for Assessment

The International Cerebellar Ataxia Rating Scale (ICARS) and the Scale for Assessment and Rating of Ataxia (SARA) are the two best known, validated and broadly used rating scales. They are long and time consuming, therefore, become impractical in a wider clinical practice.

Now days, most common scale used is Brief Ataxia Rating Scale (BARS) developed by Schmahmann et al. Scale is made up of 5 points:

- Gait (0-8 grade)
- Knee-tibia test (0-4 grade)
- Finger-to-nose test (0-4 grade)
- Dysarthria (0-4 grade)
- Occulomotor (0-2 grade)

This scale was chosen for assessment of this case.

Investigation

1) CT / MRI brain

a) Prominence of cerebellar folia.

b) B/L prominence of ventral space in fronto - parietal region.

2) Gene analysis: +ve for SCA type 2 (it is previously confirmed by genetically mapping).

Diagnosis

Spino cerebellar ataxia (SCA 2)

Therapeutic Focus

Antahparimarjana Chikitsa

Shodhana Chikitsa

Anuvasana Basti with Balaashwagandha Taila

Mustadi Yapna Basti (Karma Basti Krama)

Sanshamana Chikitsa

Giloy Satva 500mg BD

Ashwagandha Churan 3 gm BD with milk

Amalaki Rasayan Avleha 5gm BD

Bahyaparimarajana Chikitsa

Abhyanga - Balaashwagandha Taila

Swedan - Shashtika Shali Pinda Swedan

OBSERVATION AND RESULTS

Before treatment, mean BARS score was 12.

This reduced to 6 after treatment.

Assessment scale for ataxia - BARS Scale

S. No.	Examination	Score (BT)	Score (AT)
1	Gait	3	2
2	Knee-tibia test	3	1
3	Finger to nose test	3	1
4	Dysarthria	3	2
5	Occulomotor abnormalities	2	2

After one month of the treatment, his speech was improved and easily understandable. Patient's walking distance increased from 100 meters to 2-3 km daily without fatigue. Urination and bowel habit was improved. Patient was satisfied with the treatment and improvement in his daily activities.

Mode of Action

Acharya Charaka has mentioned *Basti* as *Ardha Chikitsa* and best treatment for vitiated *Vata*. (Ch.Si.1/38-40)

So, *Mustadi Yapana Basti* was selected for the patient.

Sarvang Abhyanga: Helps in subsiding *Vata Dosha* and improves the tone of muscle and compactness of body.

Shashtika shali Pind swedan: It has nourishing effect on muscles and peripheral nerves. It is effective in fasciculation, peripheral neuropathy.

Amalaki Rasyana: It improved Neuro-metabolic activity and memory.

Giloy Satva: It is best immuno modulator and helps to maintain the mental health.

Ashwgandha: It helps to regenerate the brain nerve cells and dendrite growth throughout the brain and body. It also elevates the level of GABA. (Research studies at universities in Japan).

DISCUSSION

Cerebellar ataxia is made up of two words; Cerebellar means brain similar to *Mastulung* or *Majja* in Ayurveda and atrophy is similar to *Kshaya awastha* in Ayurveda.

According to *Vyadhiviprit chikitsa sidhant*, *Kshayapradhaan vyadhi* should be treated with *Bruhana chikitsa*. Chakrapani considered *Mastulung* as *Shirogat sneha*. So *Snehana* by various modes was the

main principle of treatment. Also the principle of *Samanya vishesh* was also taken into consideration.

CONCLUSION

Cerebellar ataxia (*Majjakshya*) diagnosed according to Ayurveda, *Nidaan panchak* can be treated with Ayurvedic principles. *Hetu* and *Samprapti vichar* plays important role in the treatment of neurological disease. In neurological disease *Panchkarma* along with *Samshaman chikitsa* helps in faster recovery. The present study shows that SCA-2 can be managed with satisfactory outcome with Ayurvedic medicine and *Panchkarma* procedures. These findings may prove helpful for conducting further treatment and research work for SCA-2 and similar conditions.

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Cite this article as:

Pooja Kaushik, Anil Bhardwaj. Ayurvedic Approach towards Spinocerebellar Ataxia. AYUSHDHARA, 2022;9(Suppl 1):46-49.

<https://doi.org/10.47070/ayushdhara.v9iSuppl1.1037>

Source of support: Nil, Conflict of interest: None Declared

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