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Ayurvedic management of Cerebellar Ataxia - A Case Study

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ABSTRACT

Cerebellar ataxia is an autosomal disorder characterised by cerebellar ataxia gait. SCA (Spinocerebellar ataxia) is a type of ADCAs (autosomal dominant cerebellar ataxia), characterized by progressive reduction in the co-ordinate movements. SCA types depend on onset, Clinical features, morbidity and mortality. The present case is of a patient diagnosed SCA (clinically) which was successfully managed with Ayurvedic treatment. A 23 year boy with the complaint of difficult in independent walking and slurred speech was diagnosed as *Vātajavyādhi* and *Vātahāra* line of treatment was adopted. Treatment adopted was *Śodhana Cikitsā* (*Virechana*), followed by *Nasya*, *Shirodara, Shiro-Picchu, Shashtika Shali-Pinda Sweda, Yoga Basti* with *Mustayapanadi Basti* and tab. *Bhruhat Vāta Chintamanirasa* was advised orally . Total duration of treatment was almost 60 days. Assessment of the patient was done using SARA scale before and after the treatment.

Key words: *Cerebellar Ataxia, SCA, Vātajavyādhi.*

INTRODUCTION

Cerebellum the little brain controls all the motor-activities such as co-ordinating moment of eyes and Co-ordinating moment of body with respective to gravity. Cerebellar disorder can be easily identified in the clinical practices due to its ataxic gait. Cerebellar disorder can be widely studied under the categories such as hereditary cerebellar ataxia, non-hereditary cerebellar ataxia and the congenital or developmental disorders, cerebral malformation. Ataxia is defined as disturbance of the co-ordinative activities and the control of posture and gait. Green field (1954) was the first person to classify Heredotaxia. Konigsmark and weiner classified Olivopontocerebellar atrophies (OPCAs) into 5 categories based on genetic, clinical and pathological.[1] The autosomal dominant cerebellar ataxia (ADCAs) includes SCA_1-SCA_{31}, Dentato-rubro-pallidoluysian atrophy (DRPLA) and episodic ataxia (EA-1 to EA-7). For the onset, clinical feature, prevalence etc. refer (Table No.1).

Table 1: Showing SCA types, occurrence, mutation, locus, onset, clinical features, morbidity and mortality.[2]

SCA* types	Occurrence in relation $ADCA_S$	Mutation/ Gene	Locus	Onset (age)	Clinical features	Morbidity and mortality
SCA_1	6-27%	CAG>39 Ataxin 1	6p23	4-74 Years	Gait, trunk and limb ataxia. dysarthria and less frequently	Disabled by 5 Yrs. Bedridden by

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					nystagmus	10 yrs. Death by 10-20 yrs. After onset
SCA$_2$	13-18%	CAG>32 Ataxin 2	12q24.1	6-67 years	Progressive limb and gait ataxia. Also characterized by slow saccades, polyneuropathy, bladder dysfunction etc.	
SCA$_3$ Or MJD	23-63%	CAG>541 Ataxin 3	14q32.1	Type1 10-30 years; Type2 20-50; Type3 40-75 years.	Cerebellar sign, extrapyramidal sign or polyneuropathy sign.	
SCA$_5$		Mutation of beta-lllspectrin	11q13	40 years	Ataxia, incoordination, dysarthria, abnormalities of eyes movement are common.	
SCA$_6$		CAG>19	19q13	30-40 years	Purely cerebellar ataxia.	
SCA$_7$		CAG>37 Ataxin 7	3p14.1-p21.1	20 years	Initial symptoms may be ataxia, dysarthria or blue-yellow colour blindness, macular degeneration etc.	
SCA$_{12}$		CAG>66	5q31-33	40 years	Tremor of arms or gait ataxia, dysarthria	

*SCA - Spinocerebellar ataxia

CASE REPORT

Patient aged 23 years with a complaint of difficult in independent walking and slurred speech since 2 years, visited in OPD of Hitech Pancakarma Hospital, Mysuru on 28/11/18. Patient complain that while walking he feels that he tends to fall forward, which makes him to take support of wall or person and also he is unable to turn backward suddenly since it result in loss of control over gait. As the days advanced the above mentioned conditions gotten worsen. Now patient is unable to walk independently nor able to stand still for few minutes. Patient had history of lower IQ and slurred speech since childhood. His parents had a consanguineous marriage. Patient is farmer by occupation. Patient was diagnosed as case of SCA and subject to allopath medication tab. Baclofen 10 mg TID on 11/8/2017. Patient approached Hitech Pancakarma Hospital seeking treatment for the above mentioned complaints. Patient was diagnosed *Vatavyadhi* in OPD and *Vatika* line of treatment was adopted.

Clinical Finding

Systemic examination

CNS

Gait: Cerebellar ataxia gait was noticed and there was increased distance between 2 feet while walking (i.e. >2 feet).

Swing movement positive while standing straight.

Higher motor function was normal.

Reflexes and sensory function was normal. Patient was unable to perform finger chase, nose-finger test, fast alternating hand movements, heel-shin slide.

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Musculoskeletal system

The bulk, tone and the power of the muscles were normal.

CVS: S_1S_2 heard (no added sound heard)

RS: B/L NVBS heard.

P/A: Soft and non-tender. Micturition and bowel was normal.

Dashavidha Pariksha

- *Prakruti - Pitta-Vātaja Prakruti.*
- *Doṣa - Vāta Doṣa, Vyana Vāta* and *Udana Vāta*
- *Dushya - Ashthi, Māmsa (Dharana* of *Deha)*
- *Agni - Manda*
- *Kosta - Krura*
- *Satva - Pravara*
- *Satmya - Madhyama*
- *Samana - Pravara*
- *Sara - Rakta, Asti, Majja, Śukra* and *Satva Sara Lakṣaṅa*
- *Vaya - Madyama*

Diagnostic Assessment

The case was previously diagnosed as SCA and for assessing the ataxia - SARA scale[3] was selected. No further modern investigation was carried out. Routine investigation was done. The case was diagnosed purely based on Ayurveda parameters i.e. *Dosha Vruddhi Lakshana, Bala, Vaya, Agni* etc. and further Ayurveda line of treatment was followed

Intervention

Treatment was planned into two phase. Firstly *Śodhana Cikitsā* was carried out using *Ashwaganda Gṛuta* as *Snehapana* for 5 days (total quantity Sneha Matra on last day 150 ml). Followed *Virecana* was done using *Trivruth Lehya*. Secondly after *Samsarjana Karma* patient was subjected to *Nasya, Shirodara, Shiro-picchu* with KBT, *Sarvanga Abhanga* and *Sweda* was done using *Shastika Shali Pinda Sweda* and lastly *Mustadiyapana Yoga Basti* was advised. Orally *Bruhat Vātachintamani* of 125 mg 2BD was advised throughout the treatment.

A detail case study and follow up is given in (Table 2)

Table 2: Showing Ayurveda intervention given to a case of SCA.

19/11/2018	Visited Hitech Pancakarma Hospital, Mysuru
19/11/2018	*Agnitundivati* 1tid was given till 28/11/2018
28/11/2018	Patient got admitted in Hitech Pancakarma Hospital.
29/11/2018	*Snehapana* was started with *Ashwaganda Ghruta*
3/12/2018	*Sneha Siddha Lakshana* found. (*Sneha Matra* on the last day 150ml)
7/12/2018	*Virechana* with *Trivrutlehya* was given.
8/12/2018	Patient was advised *Samsarjana Karma.*
OPD basis	*Nasya* with KBT101 and *Shirodara* with *Ksheerabala Taila* was planned. *Shiro-Picchu* was advised during evening hour.
22/12/2018	Patient was admitted once again.
23/12/2018	Patient was advised *Sarvanga Abhyanga* and *Shastikashali Pinda Sweda* for 8 days.
23/12/2018	*Mustadiyapana Yoga Basti* was planned.
Oral medication	*Bruhatvata Chintamani* 125 mg 2 BD (throughout the treatment)

Assessment

Improvement of the patient was assessed using SARA scale[3] before starting the treatment and after the completion of the treatment. Markedly improvement was seen after the treatment as shown in the Table 3.

Table 3: Scoring of the ataxia - SARA scale for the case of SCA before and after treatment.

SN	Examination	Score (before intervention)	Score (after intervention)
1.	Gait	2	1
2.	Stance	3	2
3.	Sitting	4	2

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4.	Speech disturbance	3	1
5.	Finger chase	3.5	2
6.	Nose finger test	2	1
7.	Fast alternating hand movement	2	1
8.	Heel- shin slide	3	2

Other finding

The dose of Tab. Baclofen 10 mg TID was reduced to OD after treatment.

DISCUSSION

Type of SCA

SCA types can be diversified based on the onset, Clinical features, morbidity and mortality. Considering the clinical feature such as gait, trunk and limb ataxia it's more likely to resemble SCA1 type of SCA.

Understanding SCA through Āyurveda

In Ayurveda naming of each *Vikara* is not possible as *Vikara* are *Apari-sankya*, in such a case the tools furnish for understanding the *Vikara* as per classic are based on the vitiation of *Doṣa*, *Prākruti*, *Adhisthana* and *Samuthana*.[4] In the above case *Lakṣaṅa* i.e. *Gamana Kruchrata* and *Vaksanga* indicate the improper functioning of *Udhana Vāta*[5] and *Vyana Vāta*.[6] Feeling of *Laghutva* of *Anga* indicate the *Laghu Guna Vrudhi* in *Sharira* which intern is *Sadharmaguna* of *Vāta*. Hence, looking at the above symptoms such as *Gamanakruchrata, Vaksanga* and *Angalaghtva* indicates towards *Vatajavikara*. When we delve into *Sadhya-Asadhya*, SCA is hereditary in origin; therefore it can be considered as *Adibala Pravritta Vyādhi* in Ayurveda. Based on the nature of the disease SCA is progressive degenerative condition indicate towards *Chirakariavastha* of the *Vyadhi*. *Adibala Pravritta Vyādhi* and *Chirakariavastha* result it into *Yapya*.

Possible *Samprāpti*

According to *Sat-karyavāda*,[7] for the manifestation of any disease, the disease seed will be presented in minute form in the body. This can also be considered as *Khavaigunya*. In the present case of SCA was present since childhood. Further patient occupation i.e. farming and dietic style result in *Prakopa* of *Vatadoṣa* resulting in the *Vikruti* of *Vyanavata* and *Udanavata*. The impact of disease was less in the patient might be due to *Asthi, Majja* and *Sukrasara Lakshana.*

Discussion on treatment

The general line of treatment explained for *Vata Vyadhi* in *Ashtanga Hrudya Sutra Sthana*[8] was adopted in the present case.

Ashwaganda Ghrita

Ashwaganda Ghrita is indicated mainly For *Bruhmana* and *Vata Shamaka*. The *Rasa Panchaka* of *Ashwaganda* included *Tikta, Katu* and *Kashya Rasa, Ushna Virya, Snigdha, Laghu Guna* and *Katu Vipaka.* It acts as a *Vatashlesma Shamaka, Balya, Bruhmana, Rasayana* and *Sukrala*. According to *Chakradatta, Ashwaganda* in *Ghruta* or *Taila* is indicated in *Krusha*, provide the action of *Pusti, Bala* etc. hence *Ashwaganda Ghrita* was selected for *Snehapana*.

Virechana

Virechana with *Trivruta* was done to remove both *Pakva* and *Apakva Mala*, it is best in *Virechana Dravya* and *Virecana* was adopted because it is indicated in *Vātaja* disorders.

Sneha Nasya was done with *Ksheera Bala Taila* 101, *Shiro Basti* and *Shiro-Picchu* was done with *Ksheera Bala Taila.*

Mustadi-Yapana Basti

Mustadi-Yapana Basti also known as *Rajayapana Basti* is superior among all the *Basti* and is the best *Rasāyana* action. It increases *Bālā, Māmsa, Sadyo Bala Janana* and *Rasāyana*. *Māmsa Vruddhi* can be understood by *Samanya-Vishesa Siddhantā*. According to *Samanya Vrudikara Siddhantā Māmsa Rasa* increase the *Māmsa Dhātu* in the body. *Māmsa Rasa* and *Māmsa Dhātu* both are *Prithvi Mahabhuta* predominant. Thus it provide *Balya* to the patient and prevent further *Prakopa* of *Vātadoṣa*.

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Shashtika Shali Pinda Sweda is carried out to attain *Bruhmana* action.

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

Conclusion

The case reported demonstrates clinical improvement in SCA using Ayurveda intervention. Similar case was admitted and same line of treatment was adopted and improvement was noticed. Patient and his parents were satisfied with the above treatment.

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