



Case Report

The Role of Ayurveda in managing Cerebral Palsy in Children: A Holistic Approach

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ABSTRACT:

Cerebral palsy (CP) is a complex neurological condition that affects motor function and often co-occurring with cognitive and sensory deficits with a range of challenges. Ayurveda views CP as a manifestation of imbalances in the body's doshas (Vata, Pitta and Kapha) and focuses on restoring harmony through personalized treatments. This abstract explores the Ayurvedic perspective on CP and its management and upcoming challenges. This paper explores the remarkable progress and improvements observed in a 3 year-old child diagnosed with cerebral palsy and documents the progressive milestones achieved in child, including improved mobility, better communication skills, and increased independence in daily activities. The study examines the multi-disciplinary approach to treatment and the combined effects of internal medicine and panchakarma therapies improved the therapeutic outcome of patient. Further research and collaborative studies are warranted to validate the efficacy of Ayurvedic treatments in the management of cerebral palsy. Early intervention, initiated at the age of 3, played a crucial role in enhancing his motor skills and functional independence. By highlighting this case, I aim to inspire hope and encourage early intervention and holistic care for children with cerebral palsy by ayurveda, ultimately enhancing their quality of life and promoting their overall well-being.

Keywords– Cerebral palsy,panchakarma,doshas

Access the article online

Quick Response Code



www.thehealerjournal.org

DOI:

10.51649/healer.159

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Submitted: 06.07.2023

Received: 07.08.2023

Revised: 02.10.2023

Accepted: 09.10.2023

1. INTRODUCTION:

CP describes a group of permanent disorders of movement and posture, causing activity limitation, that are attributed to nonprogressive disturbances that occurred in the developing fetal or immature brain. The motor disorders of CP are often accompanied by disturbances of sensation, perception, cognition, communication, and behavior, by epilepsy, and by secondary musculoskeletal problems. ^[1] It is a static encephalopathy and excludes all progressive neurological disorders. The prevalence of CP varies from 1.5 to 2.5 per 1000 live births. ^[2] Any sort of injury to the growing brain can be the eventual pathology, and it can be produced by any of the prenatal, natal, and postnatal causes.

As of right now, there is no proven cure for the underlying brain injury. Medical researchers have tried everything from cutting-edge technology to extremely costly and intricate medicines, but they have not been able to identify a conclusive treatment for this disorder. The Ayurvedic literature does not provide an exact correlation with CP. The preponderance of Vata is evident when examining the etiology and clinical symptoms, which places this disease entity closer to Vata dominating diseases, or Vata Vyadhi. It has been demonstrated in earlier studies that internal medicine combined with Panchakarma treatments is more beneficial than oral medicine alone. ^[3] Hence, in the present study, Panchakarma procedures like Abhyanga, Swedana, Basti,Nasya are taken along with internal medication (Kalyanak Ghrita,saraswata granules) were undertaken to evaluate the effect of multiple Ayurveda treatment modalities in the management of Hypotonic type of CP.

birth weight 2.65 kg.

2.4.3 post-natal history: Neonatal seizure six days after birth.

1.5 Developmental history: (Before treatment)

DOMAINS	MILESTONE	ATTAINED
GROSS MOTOR	Neck holding	1 year (Y) and half month (M)
	Rolls prone	1Y8M
	Sitting without support (Not proper)	2 Y

2. CASE REPORT:

1.1 Patient information:

Age: 3 years

Gender: Male

Religion: Hindu

Socioeconomic status: middle class (Kuppuswamy Scale)

OPD I.D: 5123657

1.2 **Chief complaint:** c/o Unable to hold neck properly,Unable to sit and stand without support and Delayed speech according to the age

2.3 **History of present illness:** The child was born out of non-consanguineous marriage at 9th month of gestation by spontaneous vaginal delivery with immediate weak cry. By 6-7 months parents noticed that their child was unable to hold neck but not paid much attention and ignored.By 18 months of child age when the attainment of sitting with support and speech was delayed they went to physician and took allopathic medications but when not got significant improvement, at the age of 3 year, they approach SSH hospital(Ay) for better management.

2.4 **History of past illness:** At 1 year of age, child was admitted in the hospital for 1 week due to pneumonia.

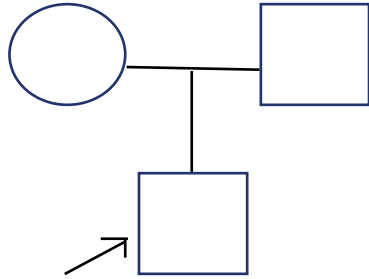
2.4.1 Ante- Natal History: Non Significant

2.4.2 Natal History: Child was delivered through Spontaneous vagina delivery, with 38 week gestation. Baby had a weak cry soon after the birth with

FINE MOTOR	Open hand spontaneously, hold objects	2 Y
	Tries to reach objects	3Y
	Bi-dextrous grasp	Not achieved(NA)
	Uni-dextrous grasp	NA
LANGUAGE	Turn head to sound	2M
	Laugh loud	4 M
	Monosyllables	NA
	Bi-syllables	NA
	Imitates sound	NA
	First word with meaning	NA
	2-3 Words with meaning	NA
PERSONAL AND SOCIAL	Smiling at mother	6 weeks
	Recognises mother	4M
	Smiles at mirror image	7M
	Stranger anxiety	11M
	Waves bye bye	12M

Table 1: Mile stones [4]

2.6 Family history



No relevant history

2.7 Immunization history: Completed up to the age

2.8 Dietic History: Mixed Veg diet

2.9 Personal History:

Appetite	Reduced
Sleep	Disturbed
Urine	9-10 times/Day
Bowel	1 times/day (hard stools)

Table 2: Personal History

3. Examination:

3.0 **General examination:** General appearance: fair, pallor-absent, Icterus-absent, cyanosis-absent, Lymph node palpable anterior cervical, Temperature-Afebrile, Heart rate-98/minute, BP 96/82 mm Hg CVS-S1S2normal, Chest-clear/s-B/L equal entry of air, respiratory rate-22/minute, P/A-soft and non-tender, spleen and liver-non palpable, Nutritional Status :PEM Grade 1

- Anthropometry (At the time of admission):

HC	47 cm
CC	54 cm
MAC	14cm (b/l)
LENGTH	98cm
WEIGHT	12.5kg

Table 3: Anthropometry

- Ashta vidha pareeksha

<i>Nadi</i>	<i>Pitta Predominant(Mandooka gati)</i>
<i>Malam</i>	<i>Vata-Kapha(Hard,light brown colour;mucus)</i>
<i>Mootra</i>	<i>Pitta(Yellow,strong smell)</i>
<i>Ji-</i>	<i>Vata Kapha (Sweta and phenila)</i>
	<i>Pitta (Aspashta)</i>
	<i>Kapha(Seeta)</i>
	<i>KaphaVata(sweta,chan-chala)</i>
	<i>Madyama</i>

Table 4.1:Ashta vidha Pareeksha

3.1 Central Nervous System Examination:

3.1.1 Higher mental function:

Consciousness: Alert to sound

RIGHT		LEFT	
Upper Limb	Grade 3	Upper Limb	Grade 3
Lower Limb	Grade 3	Lower Limb	Grade 3

Table 4.2: Muscle power chart

3.1.4 Deep tendon reflex:

DTR	RIGHT	LEFT
KNEE JERK(J)	+1	+1
ANKLE (J)	+1	+1
BICEPS (J)	+2	+2
TRICEPS (J)	+2	+2

Table 5: Deep tendon reflex

3.1.5 Cortical thumb: Absent

3.1.6 Scissoring gait: Absent

3.1.7 Babinski sign: Extensor plantar

3.2 VIKRUTHI

Dosha-Vata Kapha

Dooshya – Rasa,Sira,Snayu,Kandara

Sensorium: Recognised parents and guardian

Orientation: Not oriented to time and place

Memory: recent and remote intact

Speech: Slurred speech,monosyllable 2-3 words

3.1.2 Cranial Nerves: All the cranial nerves are intact.

3.1.3Motor System:

Muscle bulk: Normal bilateral upper limb and lower limb

Muscle tone: Hypotonic bilateral upper limb and lower limb

Involuntary movement: Absent

Muscle power of upper limb and lower limb:

Desa- Bhoomi-Jangala, Deha-Sarva deham

Kalam- Kshanadi-Varsha, Vyadhyavastha -Nirama

Balam- Roga-Madyama,Rogi-Avaram

Agni- Samagni

Prakruthi-Vata pitha

Vaya- Balyam

Satmyam- Madura rasa satmyam

Satwam- Avaram

1.3 Investigation CT Scan Head: F/S of Sequalae of birth anoxia(HIE)

CBC, RFT ,LFT was done before and after the treatment,was normal

3.4 Final Diagnosis: Hypotonic Cerebral Palsy as sequalae of birth anoxia

3.5 Prognosis: Krichra Sadya

8. Result:

Significant improvement was noted in child with hypotonic CP,especially by improving anthropometry (height, weight, chest circumference) and achieving motor milestones development (head holding and sitting), and improving tone of limbs and speech improvement from monosyllable to bisyllable words.

9.DISCUSSION

CP is a complex disease,due to its complexity nature multidimensional intervention is required. There is no cure for Cerebral palsy , but various forms of therapies can help a child with disorder to function and live more effectively. The goals of management should be to prevent secondary impairments and to increase the child’s developmental capabilities, ultimately The treatment protocol was based on dosha predominace and samparpti vighatana and focus was on increasing the quality of life.

CP refers to a group of persistent mobility and postural abnormalities that impede activity . One of the key therapies for Vata vyadhi is snehana and swedana. One of the major external snehanas is abhyanga. It offers a method for the therapeutic properties of the ingredients to be absorbed transdermally . The medicated oils utilized during

the process, nourishes the tissue, gives strength and stimulates the Agni. [8] Ksheerapaka is used to attain water soluble, fat soluble and protein soluble active principle from the drug. As milk is a colloidal solution thus it is the efficient media for extraction of medicaments and can be easily absorbed through the body membranes. [9] Aswagandhadi ksheera paka consist of Ashwagandha, Gokshura, Bala, Yashtimadhu,Satavari choorna in equal parts.These drugs have a rasayana,jeevaniya and brhmaniya properties. This Unique ksheera paka being used from last 3 years,have a profound result in children with CP, although it need further studies for its pharmacokinetic and pharmacodynamic actions. Swarna prashan is being used from the vedic eras for many purposes due to Medha Agni Bala Vardhanam (improvement of intellect, digestion, metabolism, immunity, and physical strength).[10]

10.Conclusion -

This case has only been managed with the use of Ayurvedic medications, suitable Panchakarma procedures, and supportive therapy. It was seen that the child’s quality of life had significantly improved. With this case study, we hope to raise awareness of the paucity of evidence that supports the physiotherapy management of young adults with cerebral palsy and highlight the ways in which we, as healthcare professionals, can improve their care.

ACKNOWLEDGEMENTS: Not Applicable

CONFLICT OF INTEREST: Author declares that there is no conflict of interest.

SOURCE OF SUPPORT: None

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4.TIME LINE

DATE	CLINICAL EVENTS AND INTERVENTION
July 2020	Patient attendant noticed, Child was unable to sit properly, Not able to speak according to age(18 months)
Sep 2020	Patient met a nearby Allopathic Hospital, Diagnosed as Cerebral Palsy
Oct 2020	Patient started Physiotherapy for 6 months
March 2021	Due to Covid They discontinued all the treatment
Dec 2021	Patient came to our hospital,and started oral medication which were depana pachana, medya, rasayana and swarna prashana
Feb 2022	Now patient become more interactive, Siting was improved, Started to produce some words occasionally . Along with the oral treatment Nasya was started.
April 2022	Patient was admitted in the ward for Panchakarma,Given Abyanga ,Swedan and Basti for 21 days
June 2022	Patient starts to speak bi-syllabus and stand without support
Sep 2022	Patient again admitted for Pancakarma. Abyanga, Upanaha Swedana,Vasti was given
Nov 2022	Patient walk properly, was able to talk sentence, Higher mental function was improved.

Table: 6 Time line

STANDARD SCALES FOR FOLLOW UP

1.Parameters of growth,

- 2.Goniometric evolution to assess the range of motion

3.Modified Ashworth scale to assess spasticity

4.Manual ability classification system to assess the function of upper limb

5. Modified GMFCS for looking the gross motor function were taken as assessment criteria

5.DIAGNOSTIC FOCUS AND ASSESSMENT.

Table :7 Goniometric evaluati

JOINT	MOVEMENT	Before Treatment		After Treatment	
		Right side	Left side	Right side	Left side
HIP	Abdoction	60	60	60	60
	Addoction	35	35	30	30
	Internal rotation	30	30	45	45
	External rotation	60	60	55	55
	Flexion	135	135	130	130
	extension	40	40	35	35
KNEE	flexion	160	160	155	155
ANKLE	Dorsiflexion	25	25	20	20
	Plantar flexion	50	50	50	50
SHOULDER	Flexion	180	180	175	175
	Extension	80	80	70	70
	Abdoction	180	180	180	180
ELBOW	Flexion	160	160	150	150

Table 8: Modified GMFCS scale [4]

Before	After
LEVEL IV Walks using a hand-held mobility device (cane, crutches, walker)	Level II Walk in most settings. Environmental factors and personal preferences influence the mobility choices

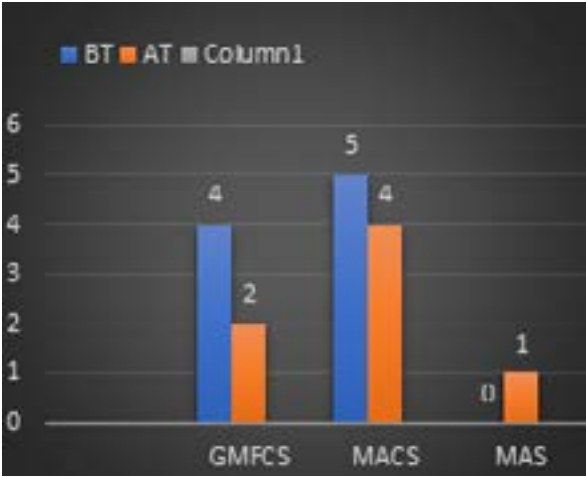
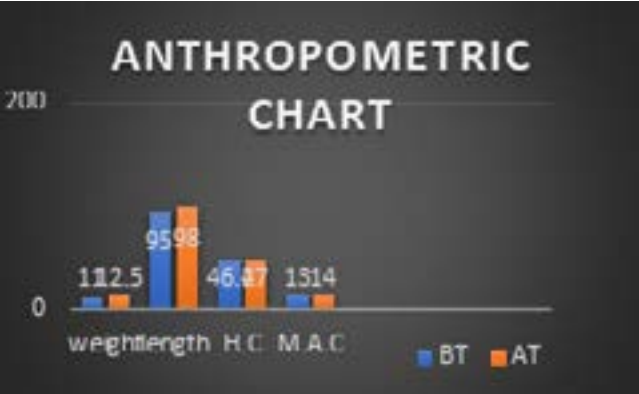
Table 9: Manual ability classification system [5]

Before	After
Level 4 Handles a limited selection of easily managed objects in adapted situations	Level 2 Handles most objects but with some what reduced quality and or speed of achievement.

Table 10: Modified Ashworth scale [6]

Before
Level 0 No increase in tone
After
Level 1 Slight increase in tone, Catch /release at end rom

Graph no:1 Anthropometry chart



Graph no:2 Different scales

6. THERAPEUTIC FOCUS AND ASSESSMENT

OPD BASIS TREATMENT				
Sl No	DRUG	DOSE	DURATION	DESCRIPTION
1.	<i>Kalaynaka ghritha (AH-Unmada Cikitsa)</i>	5ml bd (Twice daily)	1 year	<i>Buddhi ,Medha kshaya, Skhalatvaci, Agnimandya,Balya</i>
2.	<i>Saraswata granules (BR-Unmada Cikitsa)</i>	3g bd with milk	1 year	<i>Vak avisudhi, Swarasada,Bhudimandya</i>
3.	<i>Aswagandhadi ksheera paka</i>	40ml bd with jag-gery	1 year	<i>Ashwagandha(Withania somnifera), Satavari(Asparagus racemosus), Madhuyashti(Glycyrrhiza glabra Linn), Bala (Sida cordifolia), Goksura (Tribulus terrestris) in equal quantity was prepared in Ksheera Paka Vidhi. This is Jeevaniya, Brihmaniya, Rasayana, and Mamsaposhana</i>
4.	<i>Swarna Prasham (Kashyapa Samhitha-Lehana Adyaya)</i>	1ml/day (2mg of Swarna bhasma)	1 month continues administration followed by once a week for 11 months	<i>Medha Agni Bala Vardhanam</i>

5.	<i>Nasya with Kalyanaka Ghritha</i> <i>((AH-Unmada Cikitsa))</i>	2 drop BD	1 Year	<i>Given as Prati Marsha Nasya</i> <i>Sroto Shodak, Medya, Smritikara</i>
6.	<i>Abhyanga with Bala Aswagandhadi Taila</i> <i>(Sahasra Yogam)</i>	As Required	1 Year 15 Minutes two times a day	<i>Balya, Brihmaniya, Sthambakara, Pustikara,</i>
PANCHAKARMA TREATMENT				
SI No	PROCEDURE	DRUG	DURATION	DESCRIPTION
1.	<i>Snehana (oleation)</i>	<i>Bala Aswagandhadi Taila + Maha Narayana Taila</i>	20 Minute	BalaAshwagandha Taila which mainly contains - bala, ashwagandha and laksha which are balya, rasayana.
2.	<i>Swedan (sudation)</i>	<i>Shali shastika Pinda Sweda</i>	15 Minutes	<i>Shali shastika provide brhmanam, balya and mamsa vridhi, along with milk it will provide more brhmana property.</i>
3.	<i>Avagahan</i>	<i>Dasamoola Kashayam</i>	20 Minutes	<i>Its also kind of drava sweda</i>
4.	<i>Anuvasana Vasti (enema)</i>	<i>Anuvasana Vasti with Bala Aswagandhadi Taila + Kalyanak Ghritha</i>	Kala vasti	Rectum has a rich blood and lymph supply and drugs can cross the rectal mucosa like other lipid membrane and by entering general circulation, vasti acts on whole body, can pass the BBB.
5.	<i>Niruha Vasti (enema)</i>	<i>Niruha Vasti with Madhu, Saindhav, kalka-Amlaki choorna, Vacha choorna, Kapikachu choorna Sneha-Kalyanaka ghritha, Bala Ashwaghnadha Taila, Kashaya-Ashwagandhadi Ksheera Paka.</i>		<i>Vata hara, Adha kaya balya.</i>

6.	<i>Nasya</i>	<i>Kalyanaka Ghritha</i>		Nose is considered as a pathway to the brain. So drug directly penetrates through nasya. The drugs administered through nose show action on regulation of endocrine and nervous system functions
7.	<i>Upanaha</i>	<i>Goduma, Bala Choorna, Satavari Choorna, Amalaki choorna, Gokshura Choorna, Yashti madhu choorna</i>		<i>Balya, Brimhana, Mamsa vardhana</i>



Fig 1 .Abhyanga procedure



Fig 2. Shastika Shali Pinda Swedana Procedure



Fig 3. Avagahan Procedure



Fig 4. Basti Procedure



Fig 5. Nasya Procedure

7.FOLLOW-UP AND OUTCOMES

	INTERVENTION	OUTCOME	REMARK (Interruption/Discontinuation)
	<p>I. INTERNALLY:</p> <p>1.Saraswata granules 1 tsp (5g) bd with milk</p> <p>2.Aswagandhadi ksheera paka 40ml bd with jaggery</p> <p>3.Swarna Prasham 1ml/day</p> <p>4.Kalynaka ghritha 1 tsp(5ml) bd</p> <p>I. EXTERNALLY</p> <p>1.Abyanga with Bala Aswagandhadi taila for 10 minutes</p> <p>2.Avagaha Sweda with Dasamoola kwatha</p>	<p>✓ Improvement in the appetite and digestion</p>	<p>In some children after the intake for Aswagandhadi ksheera paka,diarrhoea is observed.</p>
	<p>Prati marsha nasya was given along with the oral medication.</p>	<p>✓ Siting was improved,</p> <p>✓ Started to produce some words occasionally</p>	<p>Swarna prashana is being given daily for one month followed by once a week.</p>

	<p>Patient was admitted.Given the oral medications along with the Pancakarma.</p> <ul style="list-style-type: none"> Given Snehana with Balaswagandadi taila Salisastika Pinda swed with dasamoola Avagaha with dasamoola kashyam Kala Vasti with anuvasana basti and Niruha vasti 	<ul style="list-style-type: none"> ✓ Stand without support, ✓ Open hand spontaneously holds object, ✓ tries to reach for objects, ✓ Cooperate with dressing 	
	Continued oral medication for the next 3 month	Patient starts to speak bi-syllabus and stand without support	
	Second pancakarma sititing was given	<ul style="list-style-type: none"> ✓ Walks upstairs with 2 feet per step, ✓ Undexterous approach ✓ Transfer object from hand to hand, ✓ 2-3 word meaning. 	
	Oral medication with Prati-marsha Nasya	<ul style="list-style-type: none"> ✓ Walk properly, ✓ Was able to talk sentence, Higher mental function was improved. ✓ Finger thumb scissors grasp, ✓ Helps to dress. 	



Fig 6.Final pic after complete intervention of ayurvedic oral medications and panchakarma

How to cite this article:
 Jaiswal A, Jaisawal V, The Role of Ayurveda in managing Cerebral Palsy in Children: A Holistic Approach, The Healer Journal, 2023;4(1):73-87.