

**IMPROVEMENT IN SPASTIC CEREBRAL PALSY WITH AYURVEDIC  
MANAGEMENT: A CASE REPORT**

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**ABSTRACT**

Cerebral palsy describes a group of permanent disorders of the development of movement and posture, causing activity limitation, that are attributed to non-progressive disturbances that occurred in the developing foetal or infant brain.<sup>[1]</sup> In Ayurvedic perspective, there is no direct reference to C.P. But according to symptoms, it has close relation with *Avaranajanya Vatavyadhi*. Symptoms like *Vaksanga*, *Akshepaka*, *Dourbalya* justifies this correlation. Aggravated *Vata* will have *Sthanasamshraya* at *Mamsa-medo-asthi-majja Dhatu* and *Snayu* leading to manifestation of C.P.<sup>[2]</sup> This is the case report of a 2 year old female child who is born out of LSCS and have a history of RDS during birth. The patient was presented with inability to stand or speak properly. She was presented with inability to hold things initially, at the age of 1 year. Since then, she is under allopathic treatment and physiotherapy. Later she visited the outpatient department of ITRA, Jamnagar and got admitted in the IPD. *Panchkarma* therapy along with Ayurvedic medications and proper dietary advises for 71 days and follow up after 30 days was done. Significant improvement was observed after assessment using various scales like MAS, MACS, MRC and QOL for C.P patients along with improvement in Hb value after 71 days of treatment. Significant improvement in this short period of management substantiates the benefits of Ayurvedic management in cerebral palsy.

**INTRODUCTION**

A non-progressive neuromotor condition of cerebral origin that causes severe neurological impairment in children is known as cerebral palsy (CP). CP motor abnormalities can come with sensory, perceptual, cognitive, behavioral, and communication problems. One of the most prevalent conditions in children that results in functional limitations is cerebral palsy (CP). The child's capacity to explore, communicate, learn, and develop independence are all impacted by this condition, which is characterized by an inability to routinely govern motor processes. The family's and the child's quality of life can be enhanced by effective management. C.P. has been broadly classified into spastic, dyskinetic, ataxic and mixed on a physiological basis. It has a topographical classification as hemiplegia, monoplegia, diplegia and quadriplegia. Spastic quadriplegia is the most common type in India. Etiology of C.P. is scattered under genetic, perinatal or postnatal phase of life. Uterine sepsis, neonatal jaundice, febrile convulsions can lead to C.P. It is usually caused by injury to the brain before or at birth. But the majority of them have unknown etiology.

C.P. is not directly referenced in Ayurvedic perspective, but its symptoms, such as *vaksanga*, *akshepaka*, and *dorbalya*, indicate a close relationship. Aggravated *Vata* leads to *Sthanasamshraya* at *Mamsa-medo-asthi-majja Dhatu* and *Snayu*, while specific conditions like *Ekanga Roga*, *Sarvanga Roga*, *Pakshaghata* *Pakshavadha*, *Phakka*, *Paingulya*, *Mukatva*, and *Jadatva* also fall under *Vata Vyadhi*.<sup>[3]</sup>

Exclusive *Vata Vyadhi Chikitsa* which include *Abhyanga*, *Swedana*, *Basti* etc. like *Panchakarma* procedure,<sup>[4]</sup> is the common treatment protocol in the IPD of I.T.R.A Jamnagar, for C.P. A different approach towards the management of C.P. by administering "Alternate *Udvardana Abhyanga Therapy*" along with *Yoga Basti* and *Medhya Rasayana* is proposed through this study and has obtained promising result.

**PATIENT INFORMATION**

A 2 year old female child, native of Gujarat reported to the outpatient department with complaints of difficulty in standing without support, inability to speak, and difficulty in recognizing family members. She is the only child of non- consanguineous parents and was born pre-term(8 Month 15 Days) through Lower

Segment Caesarian Section (LSCS) due to maternal hypertension bearing a birth weight 1.5kg. Baby cried soon after birth, but was presented with respiratory distress syndrome and was admitted in NICU for 12 days. As per the mother, they first noticed an abnormality at the age of 1 year when the child was not able to hold things properly. They consulted a local pediatrician, who advised physiotherapy. She underwent the therapy for 1 year but there was no significant improvement.

### CLINICAL FINDINGS

Detailed testing revealed that while vital functions seemed to be in order, higher mental functions were seriously impaired since she was unable to pronounce monosyllables and was unable to identify close family members. Although the shape of the skull was normal, there was a bilateral squint. Visual tracking and object attention were also lacking. Constant hand fists were seen, along with hypertonicity of the lower limbs' main muscles. Both the legs' ability to abduct fully and T. achillis contracture were evident. The therapy program was designed based on Doshas and Dushyas following a thorough evaluation.

### TIMELINE

The detailed timeline of treatment protocol and outcome are enlisted in Table no. 4.

**Table No. 01: clinical findings.**

1	Spasticity in both legs	present
2	Scissoring of leg	-
3	Unable to stand with support	present
4	Unable to stand without support	present
5	Unable for walking	present
6	Frequent fall (if able to walk)	N/A
7	Decreased or painful abduction of both legs	present
8	Toe walking	-
9	Deformity	
•	Genu varum (Bow leg) / Genu vulgm (Knock-knee)	-
•	T.equinovarus(club foot) / T.valgus	-
•	Internal flexion of feet	-
•	Contracture of T.achillis	present
10	Visual problems like myopia or squints	present

This leads to the confirmation of condition as spastic diplegic CP.

### THERAPEUTIC INTERVENTION

After IPD admission, the patient was initially given Dipana- Pachana (~ enhance digestive fire) for 3 days using Shunti phanta(6 ml daily before food). And internally Medhya churna administration (750 mg twice daily after food with honey along with Abhyanga with balataila along with sarvanga nadisweda(~oil massage and sudation) was given from next day). This was followed by Udvartana(~rubbing of medicated powder in the body) with Yava kulatha churna . procedure continued for 10 days alternatively along with internal medication. Physiotherapy was done parallel with the following panchkarma procedures.

### DIAGNOSTIC FINDINGS

MRI Report of brain (7/7/21) showed:

- Paucity of white matter in bilateral cerebral hemispheres along with areas of T2 und FLAIR along with hyperintense signal without diffusion restriction
- perfused thinning involving the corpus callosum.
- prominence of bilateral lateral ventricles along with mild scalloping of their margins relatively smaller in size thalami on both sides along with subtle T2 by hyperintense signal without the diffusion restriction in posterior aspect.
- findings appear to be consistent with **periventricular leukomalacia/ sequel of perinatal insult.**

The neuropathology underlying cerebral palsy includes white-matter injury, known as periventricular leukomalacia, as well as germinal matrix hemorrhage with intraventricular extension, and injury to the cortex, basal ganglia, and thalamus. Each has distinctive features while sharing some risk factors, such as prematurity and/or hypoxia-ischemia in the perinatal period. Periventricular leukomalacia consists of diffuse injury of deep cerebral white matter, with or without focal necrosis.<sup>[5]</sup>

Finally, Yoga basti was given for 8 days with Erandamula kwatha (Asthapana ~decoction enema) and Bala taila (anuvrasana ~oil enema). The patient was discharged after that with continuing internal medication (Medhya churna) for 7 days. 2<sup>nd</sup> sitting started with alternate Abhyanga – Udvartana for 10 days. Yoga basti of 8 days was followed. 3<sup>rd</sup> sitting was also done similarly with 7 day gap.

### FOLLOW-UP AND OUTCOME

The patient was assessed through various clinical examinations after completion of the therapy through various clinical examinations. Follow up was done for 30 Days, and at significant improvement in clinical features was noted throughout the time of follow up. Modified Ashworth scale<sup>[7]</sup> assessment was done and the grade improved from 4 to 3 in both lower extremities and from 3 to 2 in upper extremities. In

MRC<sup>[8]</sup> scale power of quadriceps improved from grade 3 to 4. MACS<sup>[9]</sup> scale showed improvement from grade 4 to 3 and there was no improvement in ADL scale. The motor milestone assessment showed improvement in head holding, sitting, major improvement in Standing which is mentioned in table no: 3.

**Table No. 02: CDC grading for motor milestones – Standing.**

		BT	AT
	Standing	6	4
Grade 1	Takes a few steps without support.		
Grade 2	Stands up, all by himself by throwing weight on arms		
Grade 3	Without support, can stand alone		
Grade 4	Takes a few steps, both hands hold		
Grade 5	Stands holding furniture momentarily		
Grade 6	Does not stand at all		

**Table No. 03: CDC grading for motor milestones – Fine motor.**

		BT	AT
Grade 1	Uses end of thumb and index finger / Neat pincer grasp	5	4
Grade 2	Uses thumb and index finger and holds small object		
Grade 3	Transfer object from one hand to another hand		
Grade 4	Try to reach and holds things with good grip		
Grade 5	Try to reach and holds thing with crude method		
Grade 6	No grasping at all / absent palmer grasp		

No considerable improvement was observed in language skills, but patient started recognizing mother in personal and social skills. Hemoglobin level showed considerable improvement from 10mg/dl to 12mg/dL.

**Table No. 04: Timeline of In Patient Management.**

Date of admission	Complaints/conditions of patient Intervention	
19/9/2022 to 9/10/2022	Unable to stand with and without support. Frequent fall Unable to speak Decreased abduction of both legs Squint, poor eye contact Unable to recognize family members	3 days Deepana pachana 10 days alternate abhyanga with Bala Taila- Nadi Sweda and Udvartana With Yava & Kulattha Churna 8 days yoga Basti 750 Mg Medhya Churna Bd A/F along with Madhu internally throughout the procedure
7 days interval (750 Mg Medhya Churna Bd A/F along with Madhu internally)		
17/10/2023 to 3/11/2022	Able to stand with support for brief period of time	10 days alternate abhyanga with Bala Taila- Nadi Sweda and Udvartana With Yava & Kulattha Churna 8 days yoga Basti 750 Mg Medhya Churna twice daily after food, along with Madhu internally throughout the procedure
7 days interval (750 Mg Medhya Churna twice daily after food along with Madhu internally)		
10/11/2022 to 28/11/2022	Able to stand and walk with support properly Frequency of fall reduced Able to recognize mother Eye contact increased	Same procedure and internal medications repeated
29/12/2022	Able to stand without support Spasticity over legs reduced	750 Mg Medhya Churna twice daily after food along with Madhu internally
28/1/2023	Able to walk without support (few steps)	750 Mg Medhya Churna twice daily after food along with Madhu internally

The noted observations suggest that Ayurvedic intervention holds promise for the effective management of cerebral palsy. It has the potential to significantly enhance the quality of life and functional status of the individual.

## DISCUSSION

The patient presented to the Outpatient Department (OPD) with a confirmed diagnosis of Spastic Diplegic Cerebral Palsy. While this condition does not align directly with specific diseases in Ayurvedic concepts, it exhibits similarities to disorders such as Vatavyadhi and Phakka Roga (~Nutritio. Analyzing Avarana Janya Vatavyadhi Lakshana proves its similarity to C.P. as it includes Gathra Vikshepa,<sup>[10]</sup> Dourbalya, Vakswaragraha<sup>[11]</sup> etc. Vyatyasa chikitsa<sup>[12]</sup> mentioned in Avarana Janya Vatavyadhi (~obstructive pathology) is adopted. On the basis of this, a modified theory has been introduced, referred to as alternate Udvartana Abhyanga, where Rooksha (~dry) and Snigdha (~unctuous) Gunas act on the Avarana. This modification is made to accommodate the delicate nature of children, who are Sukumara (~Vulnerable), as extreme Sheetha (~cooling) and Ushna (~heating) therapies may not be suitable for them. Prior to procedure, Deepana and Pachana is done as it represent therapeutic approaches employed either as Purvakarma (pre-operative procedures) preceding Shodhana Chikitsa (~purificatory measures) or as primary treatment modalities for various diseases. In both scenarios, the focus is on rectifying Agni (~digestive fire) and addressing Ama (~undigested or toxic substances).

Considering that Vata is localized in Kapha-predominant areas like Maamsa (~muscle), Medo (~fat), and Majja Dhatu (~bone marrow), and the condition manifests in a Kapha-predominant age group, Kapha Vatika Lakshanas are predominantly observed. Thus, the administration of Udvartana Abhyanga therapy aims to normalize both Vata and Kapha imbalances in this specific context. The substantial improvement in developmental milestone parameters could be attributed to the optimal application of Udvartana (5 days), aiding in the effective elimination of Avarana and Srothorodha and creating a favorable foundation for subsequent procedures such as Abhyanga and Basti. The Brimhana, Snigdha, and Vata Shamaka properties of the medications employed in Abhyanga and Basti contribute to rectifying the disturbed functions of Vata. The enhanced correction of vitiated Vata may be a key factor in achieving the significant results observed. The impact of the therapy on motor system components reveals significant results, particularly in the lower limbs. As noted earlier, the more effective srothoshodhana resulting from Alternate Udvartana Abhyanga enhances the efficacy of Yoga basti. Referring to Cha/Chi/28th/99th shloka the specific action of Basti in Adhonabhi<sup>[13]</sup> could potentially be responsible for the notable improvement observed in the lower limbs. The significant result observed in fine motor skills might be due to Medhya Churna's

Nootropic and Medhya effect, which causes stimulation of higher mental functions.

## CONCLUSION

While there is currently no definitive cure for cerebral palsy, a notable clinical improvement was observed in a three-year-old female child after undergoing 71 days of comprehensive Ayurvedic management, involving both outpatient and inpatient care. This encouraging outcome highlights the potential for further research in this domain. A follow-up of the case is imperative for ongoing evaluation and insights.

## Declaration of patient consent

The authors confirm that they have secured patient consent, wherein the caregiver has provided permission for reporting the case, including images and additional clinical information, in the journal. The caregiver acknowledges that their name and initials will remain confidential and will not be disclosed in the publication.

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## Conflicts of interest

There are no conflicts of interest.

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