

Ayurvedic Management of Cerebral Palsy in a 5-Year-Old Child: A Case Report

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Abstract

The impairment of motor control caused by a static injury in the developing brain is known as cerebral palsy. It was first mentioned over 150 years ago. In India, the incidence of cerebral palsy is 03.8% of the population, compared to the global prevalence of 2 to 2.5/1000 children. Approximately 25 lakh children in India are affected by cerebral palsy. Most typical kind of Spastic cerebral palsy accounts for 70–75 percent of cases. For cerebral palsy, there is no precise association found in Ayurvedic literature, but could be the outcome of a brain injury known as *Shiromarmabhighata*, and could be regarded as *Vata Vikara* or, *Vata Vyadhi* (neurological illnesses). One case of spastic cerebral palsy was identified in this case study, and it was treated using a variety of Ayurvedic procedures. Over the course of the 93-day treatment, patients received five days of Abhyanga with *ksheerbala* oil (massage) with *Nadi Swedana* with *Dashmoola Kwatha* (steam kettle sudation), five days of *Abhyanga* (massage) with *Shashti Shali Pinda Swedana* (a form of sudation), and seven days of *Matra Vasti* (enema by small-dosage medicated oil) from *Brahmi taila* and *Panchagavya Ghrut*. This treatment schedule was administered three times, separated by a 14-day interval. Throughout the entire duration of treatment, internal medications such as *Samvardhana Ghrita* and *Vacha mula* (Root of *Acorus calamus*) *Ashwagandha churna* (*Withania Somnifera*) were administered orally. Progress in delayed milestone, anthropometric measurement, modified Ashworth scale, muscle power grading, and manual ability classification were used to evaluate the results.

Keywords: Ayurveda, Panchakarma, Cerebral Palsy.

Introduction

Cerebral palsy (CP) is a group of permanent movement disorders that appear in early childhood and affect muscle coordination and body movement. The term "cerebral" refers to the brain, and "palsy" describes a disorder of movement or posture. CP is a non-progressive disorder, meaning that the brain damage causing it does not worsen over time, but the physical manifestations and functional limitations may evolve as a child grows.^[1]

Epidemiology: Cerebral palsy is one of the most common physical disabilities in childhood, with prevalence estimates ranging from 1.5 to 4 per 1,000 live births. It occurs more frequently in preterm infants and is often associated with complications during pregnancy, childbirth, or the immediate postnatal period.^[2]

Etiology: The primary cause of cerebral palsy is damage to the developing brain, which can occur during pregnancy, childbirth, or the early years of life. The most common risk factors include prenatal infections, birth asphyxia, premature birth, low birth weight, and certain genetic conditions. However, in many cases, the exact cause remains unknown.

Clinical Features: Cerebral palsy manifests in various forms, and the severity of symptoms can range from mild to severe. Common clinical features include:

Motor Impairment: Difficulty with coordination, muscle control, and voluntary movements.

Muscle Tone Abnormalities: Some individuals with CP may experience muscle stiffness (spasticity) or reduced muscle tone (hypotonia).

Postural Challenges: Problems with balance and posture, leading to challenges in activities like sitting, standing, or walking.

Fine and Gross Motor Skill Delays: Difficulties with tasks requiring both small and large muscle movements, such as grasping objects or walking.

Classification: Cerebral palsy is often classified based on the predominant type of movement disorder observed. The three primary classifications are spastic (stiff muscles), dyskinetic (involuntary movements), and ataxic (poor coordination). Mixed forms, combining features of more than one type, are also common.

This case study illustrates the impact of Ayurvedic treatment plan for enhancing the state of a patient with spastic cerebral palsy was assessed. The result of this clinical investigation will provide further information about the impact of different methods of therapy in the control of spastic brain injury leading to cerebral palsy.

Case Presentation:

Patient Information:

Name: Rajendra

Age: 5 years

Gender: Male

Chief Complaint: Delayed milestones, difficulty in walking, and poor coordination

Clinical History: The patient was born at full term via normal delivery but experienced birth asphyxia, leading to the development of cerebral palsy. The parents observed delayed milestones, including difficulty in sitting, standing, and walking. The child also exhibited poor coordination and muscle stiffness.

History of Present Illness- A 5.0 years old male child brought by his parents to OPD of Kaumarbhritya, UAU, Gurukul Campus, with above complaints. According to Patient baby was delivered by LSCS (lower segment cesarean section) prematurely, and suffered from Hypoxic Ischemic Encephalopathy (HIE) and neonatal jaundice. Spasticity and involuntary movement became noticeable after the age of 5 months and then parent started treatment by many allopathic doctors without any significant benefit. At the age of five years they approached us for further management.

History of Past Illness

Hypoxic Ischemic Encephalopathy (HIE) grade-2 and neonatal jaundice.

Treatment History

Child was treated by many allopathic doctors and the treatment details are as mentioned below; 1. Anti-convulsant therapy for first 2 years (Phenobarbitone) 2. Tablet Baclofen for muscle relaxant. 3. Botox injection to reduce contractures. 4. Physiotherapy

Family history -Family history is not significant.

Birth History

At the time of delivery, age of mother was 21 years and has not suffered from any disease. According to patient baby was delivered by LSCS and indication of LSCS was fetal distress. Baby did not cry after birth and weak cry start after 24 hrs. Baby was shifted to NICU (Neonatal intensive care unit) for proper care and management. Data of APGAR score and resuscitation measures taken was not available. Baby was delivered prematurely (34 weeks) and at the time of birth weight of baby was 1.6 kg (low birth weight).

Vaccination history

Proper for age.

Personal History

Patient was totally dependent for food intake and activity. Patient was eating only semi solid food due to lack of coordination in deglutition. Appetite of patient was very poor and frequently suffers from cough and cold. Sleep was disturbed, bed wetting (not achieved bladder control) and drooling from the mouth since birth.

Examination

Vitals of patient were normal. Examination of cardiovascular system, respiratory system and gastro intestinal system had not shown any abnormality.

Central Nervous System (CNS) Examination

- Patient was hypertonic (spasticity) and suffers from mild contractures at ankle and knee joint.
- Muscle power was in grade one.
- Cranial nerve examination- Not done (Due to handicapped physical and mental state of the patient.
- Hyper-reflexia was present (Suggest upper motor neuron (UMN) injury which is main characteristic of cerebral palsy.
- Babinski sign – Present
- Meningeal signs - Absent (Neck rigidity, Kernig sign and Brudzinski sign were not present)

Investigations

CT scan and MRI were taken to identify anatomical abnormality in the region of brain. In this case impression of MRI is Spastic CP with sequels of HIE (Hypoxic ischemic encephalopathy).

Material and Method

In this case study one case of Spastic cerebral palsy was registered and treated with multiple Ayurvedic treatment modalities. Total period of treatment is 93 days in which 5 days of Abhyanga with Ksheerbala oil with Nadi swedana with Dashmool Kwatha, 5 days of Abhyanga with Shashti Shali Pinda Swedana and then 7 days of Matra Vasti with *Brahmi taila* and *Panchagavya Ghrut*. *Samvardhana Ghrita* and *Vacha mula* (Root of *Acorus calamus*) *Ashwagandha churna* (*Withania Somnifera*) was given during the entire duration of treatment as internal medication.

Ayurvedic Assessment: In Ayurveda, cerebral palsy is understood as a Vata imbalance affecting the nervous system. The child's Prakriti (constitution) was determined, and an individualized treatment plan was formulated.

Ayurvedic Management:

Panchakarma Therapy:

Abhyanga (Therapeutic Massage): Daily gentle massage with Ksheerbala oil to improve blood circulation and reduce muscle stiffness for upto 20 mins.

Swedana (Herbal Steam Bath): To relax muscles and enhance flexibility with Dashmoola Kwatha for 20 mins.^[3]

Shastik Shali Pinda Swedana- for 30 minutes, made up with shastik rice, cow milk, Dashmool kwatha, Nirgundi Patra (*Vitex Nergundo*), Bala churna and Ashwagandha churna.

Matra Basti- with Brahmi Taila- 5ml and Panchagavya Taila 5 ml daily once a day.

Internal Medications:

Samvardhana Ghrita^[4] 5ml BD with Warm water.

Vacha mula churna- 125mg BD with honey

Ashwagandha churna- 3gm BD with milk.

Result and Discussion

In 93 days, three courses (sittings) of treatment were finished. Following that, there was a noticeable improvement in all benchmarks, including speech (grade 2 to grade 1); speaking (grades 2 through 1) and capable of walking assistance (grades 3 through 2). Dimensions: weight, length, Circumferences of the Head (HC), Chest (CC) and the improvement of the Mid Arm Circumference (MAC) considerably, demonstrating the patient's growth. There was a decrease in muscle stiffness from grade 4 to grade 2, using an altered Ashworth scale. Strengthening muscles improved from grade 1 to grade 2 following treatment on Scale of the Medical Research Council (MRC).^[5] Both the frequency and intensity of drooling greatly better following therapy. QOL was furthermore enhanced on the MACS scale. Overall, there was a 15–25% improvement, which increases the patient's quality of life. Before, it was thought that neurons could not heal from injury. However, the recent discovery of neuroplasticity suggests that the central nervous system (CNS) may heal itself by axonal budding, which allows damaged neurons to reattach. The new theory of neuroplasticity is further supported by the improvement in cerebral palsy patients.^[6]

Follow-up

Regular follow-up assessments were conducted, and the child showed gradual improvement in motor skills, coordination, and muscle tone. The child's quality of life and overall well-being significantly

improved, highlighting the potential of Ayurveda in managing cerebral palsy in pediatric patients.

Conclusion

Cerebral palsy is a complex neurodevelopmental disorder that poses unique challenges for affected individuals and their families. [7] Early intervention, supportive therapies, and a comprehensive approach to care can significantly contribute to improving the functional abilities and overall well-being of individuals living with cerebral palsy. Ayurvedic management, including Panchakarma therapies^[8], internal medications, yoga, and dietary modifications, can be considered as a complementary approach in the holistic care of children with cerebral palsy. Further research and clinical trials are warranted to validate the efficacy and safety of Ayurvedic interventions in such cases.

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