



Case Study

SISHUNAMAKA VASTI IN THE MANAGEMENT OF SPASTIC CEREBRAL PALSY – A CASE STUDY

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KEYWORDS: Cerebral palsy (CP), *Vata dosha*, *Sishu namaka vasti*, GEPE.

ABSTRACT

Cerebral palsy is a non-progressive disorder of posture and movement often associated with epilepsy and abnormalities of speech, vision and intellect, which is the leading cause of disability in children leads to dependency on family and society. It results from a defect or lesion of the developing brain. There are 25 lakhs of CP children in India. Its incidence is 3.6 per 1000 live births. According to Ayurveda CP can be clinically correlated with *Vata Vyadhi* such as *Ekanga Roga*, *Pangutwa*, *Pakshaghata*, *Sarwanga Roga* or combination of other *Vata Prakopaka Lakshana*. It is caused due to *Shiromarmabhighata*. At present there is no cure for this disease. But Ayurvedic interventions such as *Abhyanga*, *Pindasweda*, *Basti Chikitsa*, *Nasya* with internal *Vata Shamaka*, *Brumhana* and *Medhya Kalpa* shows better results in CP to improve physical activity, movements and quality of life. As The main causative factor is *Vata* and all the *acharyas* including *Kashyapa* have mentioned *Vasti karma* as the best line of treatment in alleviating vitiated *Vata*. In present study, the management of CP is done by the *Sishu namaka vasti* for 11 days to increase functional ability by decreasing spasticity. Some positive result have been noticed after treatment.

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INTRODUCTION

Cerebral palsy is one among the most common childhood disabilities, which cripple and hamper the development of a child. It is ubiquitous and it occurs all around the world, causing considerable hardship to affected individuals and their families. Cerebral Palsy (CP) was described by Dr. Little an orthopedic surgeon 150 years ago and also known as Little's Disease. Unfortunately its incidence has not come down in spite of recent advances in neonatology and imaging technology. Its incidence is 3.6/1000 cases with male /female ratio of 1.4/1 live births. The prevalence of CP has increased somewhat due to the survival of very premature infants weighing <1,000g, who go on develop CP at a rate of 15/100. Cerebral palsy is a disorder of movement and posture that appears during infancy or early childhood. It is caused by non - progressive damage to brain before, during or after birth. It mainly occurs due to maldevelopment and disorderly anatomic organisation of brain, perinatal hypoxia, birth trauma, acid base imbalance, indirect hyperbilirubinemia, intra-uterine or acquired infections¹.

Signs and symptoms can vary greatly. Movement and coordination problems associated with cerebral palsy may include:

- Variations in muscle tone, such as being either too stiff or too floppy
- Stiff muscles and exaggerated reflexes (spasticity)
- Stiff muscles with normal reflexes (rigidity)

- Slow, writhing movements (athetosis)
 - Delays in reaching motor skills milestones, such as pushing up on arms, sitting up alone or crawling
 - Difficulty walking, such as walking on toes, a crouched gait, a scissors-like gait with knees crossing or a wide gait
 - Excessive drooling or problems with swallowing
 - Delays in speech development or difficulty speaking
 - Difficulty with precise motions, such as picking up a crayon or spoon
- The specific forms of cerebral palsy are determined by the extent, type, and location of a child's abnormalities. Doctors classify CP according to the type of movement disorder involved -- *spastic* (stiff muscles), *athetoid* (writhing movements), or *ataxic* (poor balance and coordination). Among them *Spastic* cerebral palsy is the most common type of the disorder. People have stiff muscles and awkward movements.

Although there's no cure for cerebral palsy, a range of treatments are available to treat the symptoms. Treatment for cerebral palsy usually involves a team of health professionals with different areas of expertise. The team may include: a paediatrician, physiotherapist, an orthotist, a speech and language therapist, an occupational therapist, an educational psychologist, an orthopaedic surgeon - to monitor the

hips, spine and sometimes for surgery a neurologist a neurosurgeon².

A team of members are required in modern management where each has their own limitations and are highly expensive. For example, Surgery – the child with CP, he still has CP and may even develop other post-surgical complications like hyper extensibility etc. Therefore, considering these ailments this study is undertaken to increase the functional and physical capabilities, cognitive development and social interaction thereby minimizing the disability and promoting independence in activities of daily living and a successful integration with the community.

This disorder can be considered under *Vata Vikara* due to *Shiromarma abhigata*. The cardinal symptom of cerebral palsy is *Cheshtahani* which indicates a decrease in the *Chala Guna & Pravarthaka Chestanam* of *Vayu*³. The important prenatal factors can be brought under *Athmakarmaja*, *Beejadoshaja*, and *Garbini Paricharayaja* as *AdibalapravartaVayadhi*. The perinatal causes are often *Samghata Bala Pravrittaja* causing direct trauma to the *Mastulunga Majja*. Post natal causes include *Stanyadusti*, certain *Grahasor Vyadhi*. These factors bring *Khavaigunya* or *Dhatu Daurbalya* at *Mastulunga Majja* leading to vitiation of *Vata Pradhana Tridosha*. *Samprapti* can be sort out as it is resultant of *Shiromarmabhighata*. The *Prana Vata* that gets vitiated leading to *Chestanasha* i.e., impairment of neuromotor functions. Thus *Vata roga* includes diseases of brain, nervous system, nerves & the related muscle. Impairment in *Vata* function affects the *Karmendriyas, Jnanendriyas or Manah*. Finally this may be understood as *Shiromarmabhighatha* leading to *Mookata, Pangu, Andha, Badhirya* etc. The cardinal clinical presentation of Cerebral Palsy may be similar to *Pakshaghatha, Sarvanga vata, or Buddhi Mandya*.

The main causative factor is *Vata* and all the *Acharyas* including *Kashyapa* have mentioned *Vasti karma* as the best line of treatment in alleviating vitiated *Vata*. *Vasti* is just like a nectar particularly in children and adults⁴. *Vasti* is very important, as it radically expires the morbid *Vata*, the sole *Dosha* responsible for the movements of all *Doshas, Dhatu* and *mala* within the body. Caraka aptly highlighted *Vasti-* as *Vasti vatahara-namshreshtha*⁵. *Vasti* indeed is the half of the entire management of diseases. *Vasti* increases *Agni, Medha,* and *Varna*. Hence in the present study *Vasti karma* is under taken which is mentioned in *Kashyapa samhitha*.

Case description

A 6 years old boy was brought to our O.P.D by his parents, who were bothering about that their child is not able to stand and walk without support till to this age associated with stiffness in the lower limbs. Child was born to non-consanguineous couple, birth was FTNVD with 2.2 kgs and didn't cry soon after birth in the first 5 minutes of life due to prolonged labour and cried after ambubag assistance. parents were observed that the child is not able to stand and walk with support even after 10 months of age so they consulted local paediatrician regarding above complaints, where the

paediatrician advised MRI Brain, which shows that HIE changes due to birth asphyxia, then child was referred for physiotherapy and has been undergoing physiotherapy and found some functional improvement in gait but couldn't able to stand & walk independently. Hence finally came to our hospital.

At the time of examination vital functions were normal, child was conscious, well oriented, speech was normal but he has mild drooling, B/L closed first, more increased tone in the lower limbs than upper limbs, muscle power was G2 in both lower limbs & G3 in upper limbs, deep tendon reflexes were exaggerated in all limbs, while walking his feet turns inward.

Diagnosis

Spastic cerebral palsy with diplegia has been diagnosed by the complete history, and clinical examination, MRI brain which revealed the evidence of HIE changes due to asphyxia.

The treatment modality is applied mainly to combat *Vata dosha* along with drugs having *Balya, Medhya rasayana, Agni vardhaka & Vatahara* properties.

Materials and methods

Materials

*Sishunamaka sneha*⁶

Tail was prepared as per *Sneha kalpana vidhi* by using following drugs:

S.No	Taila kalpana	Drugs
1	Kalka (1 part)	<i>Yasthimadhu, Draksha, Vacha, Krishna jeraka, Satapuspha, Saindava lavana, Masha parni, Atmagupta, Vidanga, Ervaru, Siddha kalka.</i>
2	<i>Sneha</i> (4 parts)	<i>Tila taila, Ghrita</i>
3	<i>Kwath & Ksheera</i> (16 parts)	<i>Kwath prepared from Dasamoola, Triphala, Bala, Aswagandha, Punarnava, Gokshura.</i>

- Vasti was given by using Sishunamaka sneha_ 60ml Saindhava lavana-1gm Satapuspha choorna-2gm*
- Instruments for *Vasti* – 50ml disposable syringe, Nel's catheter 16 size and disposable paper gloves were used.

Treatment protocol

Type of *vasti*: *Sneha vasti* with *Sishu namaka sneha*

Dose of *vasti* : 60ml

Duration: 11 days

Method of preparation of *Vasti*:

Step 1: 1gm of *Saindava lavana* and 2gms of *Satapuspha* were first taken in the *Khalwa* and then they powdered till become fine.

Step 2: 60 ml *Tailam* is added slowly with continuous stirring till the mixture becomes homogenous..

Step 3: *Vasti dravya* was made lukewarm by keeping it in hot water.

Method of Administration

- The child was given very light food neither too *Snigdha* nor too *Ruksha*. It was checked that the child has passed the stool routinely in the morning. the patient was made to lie in left lateral position with left lower extremity straight and right lower extremity flexed on knee and hip joint on the *Vasti* table. Required quantity of *Vasti dravya* was taken as per age and then was taken into syringe connected to catheter (Nel's catheter – 16 size). Before giving *Vasti sthanika abhyanga* and *Swedana* were done. Then the catheter was smeared with oil and after removing air bubbles the catheter was introduced into rectum for about 4 inches and then *Vasti dravya* was gently pushed inside.
- During administration of *Vasti*, the child was made to take deep breath through his mouth.
- After the procedure the child was made to lie down on supine posture after gently tapping his buttocks. Then the child was made to lie down and mother/ attendant were advised to notice the time of retention.
- The same procedure is done for 11 days. The average *Vasti* retention time is for about 4-5 hrs.

Parameters for assessment

1. Gross motor milestones.

2. Ashworth Spasticity Scale⁷.

- 0 - No increase in muscle tone
- 1 - Slight increase in muscle tone, manifested by a catch and release or by minimal resistance at the end of the range of motion when the affected part(s) is moved in flexion or extension

- 1+ - Slight increase in muscle tone, manifested by a catch, followed by minimal resistance throughout the remainder (less than half) of the ROM
- 2 - More marked increase in muscle tone through most of the ROM, but affected part(s) easily moved
- 3 - Considerable increase in muscle tone, passive movement difficult
- 4 - Affected part(s) rigid in flexion or extension

3. Muscle power:

Power of the limbs was assessed based on below grading system of MRC⁸

- 0 - Complete paralysis
- 1 - Flicker of contraction
- 2 - Movement if gravity excluded
- 3 - Movement against gravity
- 4 - Moderate power against resistance
- 5 - Normal power

Results

Subjective parameters were assessed before and after treatment and compared below;

1. Gross motor milestones:

Child can now able to stand without support, able to walk without support for 5-7 minutes slowly, and also able to climb upstairs with support which was not therefore treatment.

2. Drooling has come down and constipation was relieved. overall nutrition status also being increased.

Parameters	RUL		LUL		RLL		LLL	
	B.T	A.T	B.T	A.T	B.T	A.T	B.T	A.T
Muscle bulk	Normal	normal	normal	normal	decreased	normal	decreased	increased
Muscle power	G3	G3	G3	G3	G2	G3	G2	G3
Tone	Increased	decreased	increased	decreased	increased	decreased	increased	decreased
Range of passive movements	Decreased	increased	decreased	increased	decreased	increased	increased	increased

DISCUSSION

At the time of discharge child parents were happy as their child was able to stand and walk without support for 5-7 minutes, able to climb upstairs with support, decrease in drooling and also constipation was relieved, as *Vasti* was given for 11 days and there was regularisation of bowel in the child. Even there was improvement in overall nutrition as *Vasti* used in the present study was *Sneha vasti*. Above said results were obtained by *Sishunamaka vasti*, which is unique *Vasti* specially designed by Kasyapa for the elimination of all kinds of diseases exclusively in children. Their mode of action presumed to be as follows.

Vasti is having two actions, expelling the *Dosa* & nourishing the body as it is indicated in *Gambhiragata vata* also⁹. First, potency of the *Vasti* drugs gets absorbed to have its systemic action. Its second major action is related with the facilitation of excretion of morbid substances responsible for the disease process

into the colon, from where they are evacuated. By the *Gunas* of *Vasti dravya*, the vitiated *Vayu* regain their normal state and supports the body. They also bring vitiated *Pitta* and *Kapha* in their normal state, and the five types of *Vayu* nourish their respective *Sharira – Bhutaguna*. *Vasti* drugs in *Pakvashaya* acts on whole body in a same way that of sun, which though placed in the sky, causes evaporation of water on the earth. So *Vasti* has effect on over all body.

This systemic action of *Vasti* can be well explained on the basis of the modern physiological and pharmacological actions:

The gastrointestinal tract has a nervous system all of its own called the “*Enteric nervous system*” or the “*Gut brain*”. Just like the larger brain in the head, researchers say, this system sends and receives impulses, records experiences and respond to emotions. Its nerve

cells are bathed and influenced by the same neurotransmitters. The gut can upset the brain just as the brain can upset the gut. It lies entirely in the wall of the gut, beginning in the oesophagus and extending all the way to the anus. The number of neurons in this enteric system is almost equal to the number in the entire spinal cord. Enteric nervous system normally communicates with central nervous system through the parasympathetic system (via vagus nerve) and sympathetic (eg; via pre vertebral ganglia) nervous system and the gastrointestinal tract also receives a plentiful supply of afferent nerve fibres, through the vagus nerves and spinal afferent pathways. Thus, there is a rich interaction, in both directions, between the enteric nervous system, sympathetic prevertebral ganglia and the CNS. ENS system as the capacity to alter its response depending on factors such as bulk and nutrient composition. Thus *Vasti dravya* when administered into rectum may stimulate the sensory system due to the chemical composition and pressure effect over the bowel. As the total nervous system is interrelated so this regular stimulation on ENS has positive effect over CNS also¹⁰.

Another concept of mechanism of *Vasti* can be interpreted by understanding the microanatomy of the gut. It reveals scattered, frequently solitary hormone producing cells of the stomach, intestine and pancreas. These are known as Gastro entero pancreatic (GEP) endocrine system able to produce peptides and amines as active as hormones or as neurotransmitter. Gastro entero pancreatic system releases their secretions in response to nutrient stimulation from the circulation and lumen and has the potential to secrete into the circulation and lumen too. These specialised cells of gut are known as entero endocrine cells, enterochromaffin cells etc. as they exactly act like that of neurons of the brain, they are designated as paraneurons. The GEP endocrine cells are presumed to have receptor sites on their surface, adequate stimulation to which by "Secretogogues" triggers stimulus reaction. When *Vasti dravyas* are passed through the GIT tract probably stimulate the cells and act as Secretogogues thus compensating neurological deficit and improving the functions¹¹.

CONCLUSION

The present study was under taken to increase functional and physical capabilities. As this disorder is incurable, if we are able to make small improvements in an earlier age, then it will reflect as a major benefit in later part of life. As spasticity is the culprit in causing delayed motor milestones in cerebral palsy, which can be correlated with vitiated *Vata*. As *Vata* is responsible for any movements in our body and *Vasti* is the best line of

treatment in the management of *Vataroga*. So *Sishunamaka sneha vasti* mentioned by *Kashyapa* as treatment for any kind of diseases in children, has been taken, in which reduction in spasticity was observed and thereby made the child to stand and walk without support. There is overall progress in functional, physical and nutritional status of the child with no side effects, which is much economical.

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Cite this article as:

Suryanarayana Mudadla, Radhika Injamuri. Sishunamaka Vasti in the Management of Spastic Cerebral Palsy – A Case Study. AYUSHDHARA, 2016;3(1):519-522.

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