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Ayurvedic Management of Hemiparesis/ Hemiplegia in Children - A Clinical Case Study

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ABSTRACT

Hemiparesis is the condition in which the muscle weakness or partial paralysis occurs on one side of the body that can affect the arms, legs and facial muscles. It may be seen either on left side or right side of the body. The severe form of hemiparesis is called hemiplegia. It means half-part of the body becomes weak and is unable to perform the daily living activities. It is mostly seen as stroke, arterial ischemic stroke contributes 80% of the cases among the strokes. The reported incidence rates are 3-8 per 10000 children per year and most of the between 1 to 5 years of age get affected with the hemiparesis due to in an increased incidence of infection at this age. If it is not treated properly, then there may be chance of limping gait, painful shoulder, contractures, sympathetic–reflex dystrophy, fracture, thalamic pain. Hemiparesis can be correlated with the *Ayurvedic* concept of *Pakshaghata,* which is a *Vataja Nanatmaja Vyadhi.* Here a case of 8yr old male child from rural area of Bellary district, Karnataka, India, had come to our hospital with unable to walk properly, weakness in right side of the body, involuntary movements in right upper limb and associated with unable to sit in squatting position. This condition was understood according to *Ayurveda* and treatment was planned like *pakshaghata chikitsakrama* which includes *snehana, swedana* and *vasti* for 8days along with some internal medication, then the child got recovered from weakness without any residual weakness within few weeks .Hence an attempt has been made to explore this case.

Key Words *Hemiparesis, Hemiplegia, Pakshaghata, Children, Vasti, Ayurvedic management*

INTRODUCTION

Hemiparesis is associated with a decreased arm swing on the affected side and a lateral circular motion of the leg (circumduction gait). Extrapyramidal movements, such as dystonia or chorea[3]. The reported incidence rates are 3-8 per 100,000 children per year. It is mostly seen in stroke patient. Acute or episodic hemiparesis usually results from ischemic or hemorrhagic stroke[4] (Arterial ischemic stroke causes 80% of

the cases). Incidence is common in children between the age of 1 to 5 years get affected with the hemiparesis due to in an increased incidence of infection at this age. And also second most common cause is hemorrhage may be results of trauma and any space occupying lesions. Other cause includes a focal structural lesion or an inflammatory process as in multiple sclerosis, abscess, Sarcoidosis[5].

The symptoms like- languagedisorders (aphagia,dysarthria), sensorimotordisturbances (numbness,tingling,anosognosia,apraxia), cognitiveabnormalities (like-attaintion,learning,planning), abnormaltone (spasticity,flaccidity), disorder of visual spatial integration (diplopia), in-coordination gait difficulties, balance difficulties, abnormal reflex, swallowing problem, emotional deficient (irritability, frustration), bladder and bowl difficulties[6]. If hemiparesis is not treated properly and timely, then that leads to chances of getting painful shoulder (common complication), contractures, sympathetic–reflex dystrophy, fracture, thalamic pain etc.

Treatment should be based on assessment by relevant health professional. Severe motor impairment including weakness need these therapist to assist them with specific exercise like-Physiotherapy, Occupational therapy, Rehabilitation therapy, Mental health therapy, Pharmacological, Surgery[7].

It is well explained in *Ayurveda* as *Pakshaghata,* one of the *kevalavatavyadhis*, resulting when *Vataprakopa* affects the *Siras* (vascular structures) and *Snayus* (Tendons and Ligaments) of any one half of the body characterized by paralysis of the affected half of the body, face and impaired movements of joints and extremities[8]. It can be correlated to the biomedical cerebrovascular condition called 'stroke'.

Though the *Pakshaghata* is a *vatavyadhi* but it is also frequently associated *with kapha or piita* in acute stage. Etiology of *Pakshaghata* is attributed in different way due to *aharajanya* cause like *rookshyaaharasevan, abhojan, adhyasan, visamasan* etc and *Viharajanya* cause like *ratrijagarana, divaswapna, uchhavasan, vegadharana* etc and *manasajanya* cause like *Bhaya, bhrama, chinta, shoka* etc and *Abhighatajanya* cause like *abhighata, marmaghata, prapata*[9] etc. *Charaka* mentions *Avyakta Lakshana* as the *Poorvarupa* of any *VataVyadhi*[10]. *Roopa* includes *Anyatarapakshacheshtanivritti, Achetana, Akarmanyata, Hastapadasankocha, Sirasnayuvishosha* etc as a result of partial paralysis of muscle of one side of the body occurs. *Sampraptighatak* of *pakshyaghata* defines due to etiological factors like *rookshaaaharasevana, Vata gets vitiated,shoshana of Sira&Snayu, loosen SandhiBandha, karmahani and Vichetana* and leads to *Pakshyaghata*[11]. In general *pakshaghata* is *Kashtasaadhya/Asadhya* and according to *Sushruta kevala vataja, Raktadhidhatu kshaya are as asadhya* whereas *Vata* associated with *pitta* or *kapha* would be *Sadhya*[12]. The management of *pakshaghata* includes *Snehan, Swedan* and *Virechana karma*[13].

Treatment of *pakshaghata* must be based *avastha*, in acute stage *teekshanasya karma is best choice when the patient had association of loss of conscious ness and seizures*, as like is *akshepaka vata chikitsa* mentioned by *Acharya Susrutha*[14]and *Astangasangraha* for the purpose of reversing *mada, murcha or sanyasa* which is *the pittaavritavata* stage of the disease. Once reversal of initial stage of *pittavrita vata* will be accomplished, *mridu virechana karma, svedana, abhyanga* and *basti* will be done for treating *kaphaja and vataja* stage of the disease. With the above understanding treatment has been planned and executed in this particular case and obtained satisfactory results within few weeks.

CASE PRESENTATION

An 8 year old male child named Sanjay S/O Maha dev from Kereramapura, dist-Ballari was brought to our Balaroga outpatient department by his parents with below sufferings –Weakness in right side of the body with involuntary movements and unable to walk properly with lagging of right lower limb and unable to sit in Squatting position. And also child had associated problem like inability to take food by using his right upper limb due to weakness and spills the food around the plate while eating, heaviness in the head since few days and as per the parents history child was deaf and dumb by birth.

In the present history the child was born to non-consanguineous couple. During 3rd antenatal checkup, due to reduced AFI level, labour was induced at 34th week of gestational age in Government hospital, Mandya by NVD. Birth cry was poor and birth weight was 2.4kg and there were no post natal complications. On day 3 both mother and child were discharged. At the age of two years the child was diagnosed (by BERA test) as deaf. At the age of 5yr child was admitted in AIISH CENTER MYSORE (i.e,deaf and dumb school), after 4month child complained of severe backache for which they visited to Indira Gandhi institute of child health Bangalore, where they diagnosed it as SPINE TB and did surgery, followed by child advised to take anti tubercular treatment (AKT) medicine for 1year. But parents self-stopped AKT medicine at 9month from the date of initiation, 1 month later from the stoppage of medicines child got sever weakness in right half of the body and child was not able to walk so parents visited the same institute for these complaints. Then they referred to neurologist, where child underwent MRI BRAIN and got impression suggestive of Arachnoid cyst. Their doctor advised some medicines like- Anti psychiatric drug and vitamins and tab-serenase (haloperidol) 0.25mg and suggested for physiotherapy. The parents were not satisfied with the treatment since child did not get any satisfactory relief so they visited traditional practitioner nearest to their native place and took treatment for 1month. As there was no satisfactory result, parents finally visited our hospital by suggestion of their colleague. In the past histrory child was operated for spinal T.B (i.e,Pott's disease) in the month of december 2019 while

evaluation process of hemiparesis child was accidently diagnosed with Arachnoid cyst in brain (12-11-2020). Child was previously diagnosed as deaf (93% hearing loss) with dumb. No such history found in family. Birth history was child born preterm and birth cry was poor and also child had delayed developmental history.

ON EXAMINATION:-

While examining the child was conscious, oriented, pallor in the conjunctiva, involuntary sudden jerky movement in Rt. upper arm (hemi chorea) and lagging of Rt. lower limb while walking. Postsurgical scar was observed in the dorsum aspect of spine.

SYSTEMIC EXAMINATION:-

CVS-s1s2 heard and there are no murmurs, RS-B/L chest expansion normal, NVBS +ve

CNS-conscious, oriented to time place person and no signs of any meningeal irritation,

Aphasic and deaf as the child was deaf and dumb by birth.

Superficial Reflex-Babinski response present.

Table 1 Motor System Examination

	LUL	RUL	LLL	RLL
BULK	NORMAL	NORMAL	NORMAL	NORMAL
TONE	NORMAL	NORMAL	NORMAL	NORMAL
POWER	G5	G3	G5	G4

Coordination:-

Gait-Hemiparetic Gait, Finger Nose Test-Finger missing the target in right upper limb, Dysdiadochokinesia-Not able to Perform. Tandem walking-able to perform (Sways on Closure Eye). Rhomberg's sign- Positive (Abnormal), Rebound test-done Properly (Normal).

Involuntary Movement: Hemi **c**horia-Present, **Reflexes:** Superficial Reflexes:-Plantar Reflex-Present, Deep Tendon Reflex:-Knee Jerk (Rt)-Brisk, Jaw Jerk-Normal, Tricep Jerk (Rt)-Brisk, **Sensory System Examination:** Touch, Pain, Temp-Perceived And Normal.

INVESTIGATIONS:

MRI report- [cervical spine with whole spine screening (plain and contrast) (10-11-2020)] Observation: Follow –up case of tuberculosis of dorsal spine, post-operative. Implants noted at multiple dorsal levels extending from d2-d5 levels. Artifacts noted from the above mentioned implants, Bony-sunchondral irregularity with reduced vertebral body heights noted involving d3, d4 vertibral bodies. And Serum creatinine-0.4mg/dl(10/11/2020), ASLO–Negative(12-11-2020),MRI BRAIN(12-11-2020):- Extra –axial CSF intensity lesions in the right CP angle cistern, indenting on the right 7th and 8th nerve complex-suggesting arachnoid cyst.Tiny discrete irregular subcortical T2 and FLAIR hyperintensities at B/L pariatal lobes- non-specific in nature. ECHOCARDIOGRAPHIC (13-11-2020)-Normal study

TREATMENT:-First 3days

Shirashoolavajra rasa (1-0-0) B/F with *madhu* and *Kalyanakagrita* (1/2tsp-0-0)

Dhanadanayanadhikashaya(10ml BD A/F) are given for child as child is more bothering about heavy ness of head and loss of appetite since *kaphadosha* suspected along with hence above treatment has been given.

***Panchakarma* Procedures: 8days** (16-12-2020) - Only one sitting

Sarvanga abhyanga with ksheerabalataila for 15min. *and Sarvanga swedana with Sasthikasalipindasweda* for 15 min.

Yogabasti: Anuvasanavasti given with *mahanarayanataila (50ml)*

Niruhavasti administered *with dashamoolaerandaniruhabasti* (200ml)

ShamanaAausadhi

Tab-*Brihatvatachintamanirasa* (½ BD with honey)

Ashwangandharasayana (1tsp OD with milk)

Dhanadhanayanadhikashaya (10ml BD with Luke warm water before food) for 8 days

On 1st follow up:-

AshwagandhaRasayana (1tsp OD with milk)

Makaradhwaja tab (1-0-0 with honey)

AnutailaNasya (2drop each nostril for 14days)

Table 2 Outcome Assessment:-

Before Treatment	After *Panchakarma* 8th Day	After *Shaman*(8weeks)
• **Weakness in right side of the body with involuntary movements and unable to walk properly with lagging of right lower limb.** • **2. Unable to sit in Squatting position.** • **3. Associated with this Unable to grab the food properly from the plate and spills the food around the plate while eating**	• Weakness partially reduced in right side of the body and decreased involuntary movement of the RUL with no lagging of right lower limb. • 2. Try to Sit in Squatting position. • 3. Able to grab the food partially from the plate and spills the food around the plate while eating.	• Child regain strength of the muscle (Restrored all the functions like before). ○ There is no involuntary movement in RUL and walking normally. • 2. Child able to sit in squatting position. • 3. Child able to grasp object in rt upper limb ○ And able to grab the food properly from the plate and not spills the food around the plate while eating.

Table 3 IMPROVEMENT

	Before Treatment	After *panchakarma*	After *shaman* (after 8 weeks)
GAIT	Hemi paretic gait	Reduced Hemi paretic gait	Normal
BULK	Normal	N	N
TONE	Normal	N	N
POWER	G3 in Rt. UL G4 in Rt.LL	G4 in Rt. UL G5 in Rt.LL	G5 in Rt. UL G5 in Rt. LL Restored all the functions like before
Coordination	Not perform properly.	Partially performed.	Performs properly.

DISCUSSION

MODE OF ACTION:

In the present case , condition was understood in *Ayurveda* treatment was planned and executed based on *avastha* of the disease like initially *kaphanubanda* was treated for 3 days then 8 days *panchakarma* was administered to take care of *vata* and also to eliminate *anubandhakapha, after*

11 days of treatment then *shamana* medications were given like *vata hara, balya, and rasayana* with the above treatment child had fast recovery without any residual weakness.

Abhyanga with ksheerabalataila: Procedure is performed by applying gentle pressure which in turn resulting in reduction of motor neuron hyper-excitability by reducing the alpha motor neuron activity, increases blood circulation, provides nutrition, and increases strength of muscle.

SasthikashaliPindasweda is one of the best *brihmana (snigdha) sweda* procedure which will help in countering *the ruksha & sheeetaguna* property of *vata* due to its *ushnaguna & snigdha* property, resulting in *vatashamana & brimhana* occurs. Because of its *ushna* property also acts as vasodilator, increases blood circulation to the affected part there by nourishment of atrophied muscles may occur.

Yogavasti- Alone anuvasanavasti may be increases *kapha* and further leads *srotoavarodha (*if *doshikavastha* is not understood).

Alone *niruhavasti* may increase *vata* since *yoga vasti* is planned.

Alternative *niruha and anuvasanavasti* will maintain the balance of *vata and kaphadosha.*

Dashamoola-Erandakashaya is used for niruhavasti since it is indicated in *avruthavatas.* As we thought *pittavrita/kaphaavrutha vata* may be *required rechana* so here *Dashamoolaeranda* has been selected *for vasti* which will also act as *sneharechaka*.

CONCLUSION

The *Ayurvedic* formulations combined with *Yoga vasti (Panchakarma*) were found effective in treatment of hemiparesis *(Pakshyaghata*). With this treatment the Chorea movements were reduced and child was happy and could able to do his daily activities without any weakness and also noticed no side effects while and after the treatment.

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