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MANAGEMENT OF *AKANGAVATA* (MONOPLEGIA) WITH *AYURVEDA*: A CASE REPORT

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ABSTRACT

The word *Akangavata* is the combination of 3 words: *Ak-Anga-Vata, i.e.* the vitiated *Vata Dosha* affects one limb of the body or half of the face, associated with loss of movement, pain, speech difficulty, weakness in affected areas etc. that can be correlated with Monoplegia. A 26 year old male patient, case of Left Upper Limb Monoplegia, presented to the *Panchkarma* Department, with difficulty in moving the thumb and fingers of his left hand, since one year. The brain MRI that revealed acute watershed infarcts right ACA-MCA and right MCA, PCA territories with acute focal infarct right frontal lobe. The *Ayurvedic* diagnosis of *Akangavata* (*Charakokta Akangaroga)* was made and *Nasya, Virechana & Yapan-Basti Karma,* all these procedures were done, along with internal *Ayurvedic* medicines & physiotherapy. Patient was admitted for two months and showed significant improvement in subjective parameters. Aim of the study was to evaluate the effect of *Ayurvedic* (particularly *Panchkarma)* treatment in the case of *Akangavata* with special reference to Monoplegia. Symptoms were weakness in left upper limb, inability to grip with left hand, along with headache, anxiety, vertigo since 12 months. Patient shows the noticeable improvement in the symptoms (~ 90%). After treatment the hand grip strength of the patient was also moderately recovered.

Keywords: *Panchkarma***,** *Akangavata,* Monoplegia, *Nasya*, *Virechana.*

INTRODUCTION

Monoplegia is a type of hemiplegia, but it is localized to a single limb or to a specific region of the body. The upper limb Monoplegia is referred to Brachial monoplegia and the lower limb monoplegia also called, Crural Monoplegia [1]. The commonest cause of acute isolated arm weakness on one side of the body is stroke. Distal arm monoparesis is an unusual form of cortical infarct, which occurs in the parietal lobe or central sulcus region, comprising less than 1% of stroke cases. The acute onset is the key to suspicion of stroke [2]. Stroke is the sudden death of neurons in localized area of brain due to inadequate blood supply.

It is characterized by reversible or irreversible paralysis with other symptoms, and classified into two types: ischemic and hemorrhagic stroke[3]. Watershed area is the medical term referring to regions of the body that receive dual blood supply from the most distal branches of two large arteries. In the brain where areas are perfuses by both the anterior and middle cerebral arteries, form a watershed zone. When watershed stroke occurs in the brain, it produces unique focal neurologic symptoms. A cerebral watershed area is situated in the dorsal prefrontal cortex: when it is affected on the left side this can lead to transcortical motor aphasia [4]. Watershed cerebral infarction accounts for 5-10% of all cerebral infarctions - which has been classified as: (a) **cortical** (external) border zones infarct: between ACA, MCA and PCA territories, histologically, these can be wedges of cortical and sub-cortical infarction or cortical laminar necrosis. (b) **Deep** (internal) border zones infarct: between ACA, MCA and PCA territories and perforating medullary, lanticulostriate, recurrent artery of Heubner and anterior choroidal arteries. **ACA/MCA territories:** in the frontal cortex, extending from the anterior horn to the cortex. **MCA/PCA territories:** in the parieto-occipital region, extending from the posterior horn to the cortex. **Triple watershed zone:** is most vulnerable region where ACA, MCA and PCA converge in the parieto-occipital region posterior to the lateral ventricles[5]. The pathogenesis of WSI remains debated [6]. Variously theories have been proposed to explain their pathogenesis; it is believed that repeated episodes of severe systemic hypotension are the most frequent cause. Susceptibility of border zones to ischemia was proved in an autopsy study of patients with border zone infarcts. Advanced imaging techniques such as diffusion and perfusion MR imaging, PET, perfusion CT, and transcranial Doppler US can be helpful for understanding the pathophysiology of these infarcts[7]. In *Ayurveda* monoplegia can be correlated with *Aknagavata* (*Charakokta Akangaroga*) which is a *nanatmaj Vatavyadhi*, results because of *Vataprakopa*. It affects *siraa`s* [vascular structure] and *snayu`s* [tendons and ligaments] of one half of body and face[8]. According to *Acharya Charaka*, if *Vayu* affects the half of the body and while drying up the blood vessels and ligaments it paralyses one side, either left or right, and causes loss of movement, pain and loss of speech.When vitiated *vayu* causes contracture in one of the feet or hand with piercing pain and distress, this is known as '*Ekangaroga'*. When affection is generalized, it is known as '*Sarvanga roga*[9]. The main cause of *Akanagavata* is vitiated *vata* and in *Ayurvedic* text has one of the best treatments for *vata dosha* is *Basti*. The management of *Akangavata* being reported in this paper was a case of watershed infarction (stroke). In this presented case the effect of combined therapy of *Nasya*, *Virechan* and *Basti* has been shown.

MATERIAL AND METHODS

Mashabaladi Pachana Kashaya, is multi-herb preparation, which contains seven herbs in equal quantity and two were added as *Prakshep dravya*. *Masha* [*Phaseolus mungo*] is a potent *Dhatu Vardhana Dravya*, is supportive as a *Vatahara* with its dominant *Madhura rasa* and *Ushnadi Gunas*. *Bala* [*Sida cordifolia*] is considered as a nervine stimulant, *Balya*, *Madhura Rasa*, *Madhura vipaka* and *Vatahara* in property. *Shookashimbi* [*Mucuna pruriens*] is *Snigdha*, *Madhura* and *Ushna* in property; it acts as nervine tonic. *Rasna* [*Pluchea lanceolata*] is the one of the best *Vatashamaka* drug having *Tikta rasa*, *Ushna Virya* and *Katu rasa*. *Eranda* [*Ricinus communis*] is *Madhura, Katu, Kashaya rasa, Ushna Virya* and *Madhura Vipaka* in property. *Kritrina* [*Cymbopogon schoenanthus*] is *Katu, Tikta rasa, Ushna Virya, Katu Vipaka* and *Vatakapha Shamaka* in nature. *Ashwagandha* [*Withania somnifera*] is *Tikta, Kashaya, Madhura rasa, Ushna Virya* and *Madhura Vipaka* and *Balya*, *Vatahara* in nature. It serves the function of enhancing the energy and nourishes the *Mastishka*. *Saindhav Lavan* and *Hingu* [*Ferula foetida*] have the potent action of facilitating easy absorption through its effective properties[10]. In *Chikitsa sthana* 28, *Acharya Charaka* told the general line of treatment for *Vata Vyadhi* that after

Snehana and *Svedana*, *Virechana* should be given as main *Shodhana* measure. Hence *Virechana* is considered to be treatment of choice in *Vata vyadhi* and so on in *Akangavata*. *Virechana* is done with *Trivrita Leha* (Ingredients are *Trivrit Kashaya*, *Trivrit Kalka* and *Sita*), which is Indicated in *Urdhava Raktapitta*, *Pakshaghata*, *Kamla*, *Vatarakta, Kasa* and *Shvasa*. *Anupana* is *Ushna Jala* and dose is 80 gm.[11] *Basti Karma* with *Erandmooladi Yapan Basti* (800ml) and *Dhanvantara Taila Anuvasana Basti* (lowest dose has been selected i.e.60 ml) in the form of *Yoga Basti* for 8-days. According to *Acharya Charaka Siddhi Stahn* 12th chapter *Erandmoolai Yapan Basti – Eranda* root and *Plasha* combined 240 gm, *Salparni*, *Prisniparni*, *Brhati, Kantkari, Gokshura, Rasna*, *Asvagandha*, *Guduchi, Punarnava, Aragvadha* and *Devadaru*- each 40 gm made into pieces and fruits of *Madana Phala* eight in number having been washed should be boiled in water 2.56 liters mixed with one-fourth milk till reduced to one-fourth. The decoction having been filtered should be added with the paste of *Satapushpa, Kustha, Musta, Pippali, Hapusha, Bilva, Vacha, Indrayava, rasanjana, Priyangu* and *Yavani* and also with honey, ghee, oil and rock salt. This should be administered tepidly as enema once, twice or thrice. This is commended for all particularly handsome, delicate, enjoying women, wounded, wasted, old and those having chronic piles and desire for progeny[12].

CASE REPORT:

A 26 year old male patient came to *Panchkarma* Dept. (22/02/2019) with the complaints of weakness in left hand along with inability to grip and headache, anxiety, vertigo since 12 months. He had not sensory disturbances, and no history of arterial hypertension or other disease. At the time of admission patient was conscious and his vital functions were normal.

PAST HISTORY:

H/o Smoking (Bidi:4-6/day)

No H/o any significant family history

No H/o any trauma or accidental injury

No H/o HTN, DM, TB or any surgical illness.

ON EXAMINATION:

General Examination:

Pulse: 70/min. Pallor: -ve

B.P.: 122/80 mmHg Icerus: -ve

Temp.: 98^0F Clubbing: -ve

Weight: 53Kg. Cynosis & Oedema: -ve

Systemic Examination:

Respiratory System- Normal

Cardiovascular System- Normal

Per Abdomen- Normal

Gait: Normal

Central Nervous System:-

Mood: Depressed

Speech: Normal

Cranial nerves: Normal, well intact

Higher mental functions: Appearance & Behavior, Memory, Orientation and Intelligence all are intact.

Deep Tendon Reflexes-

Table 1: Reflexes

	Right	Left
Biceps	Normal	Exaggerated
Triceps	Normal	Exaggerated
Knee Jerk	Normal	Exaggerated
Ankle Jerk	Normal	Normal
Planter	Flexor	Flexor

Table 2: Muscle Power

Sr. No.	Before Treatment		After Treatment	
	Extremities	Grades	Extremities	Grades
1.	Rt. Upper limb	5/5 – Normal Power	Rt. Upper limb	5/5 – Normal Power
2.	Rt. Lower limb	5/5 – Normal Power	Rt. Lower limb	5/5 – Normal Power
3.	Left Upper limb	3/5 – Movement against gravity	Left Upper limb	4/5 –Movement against gravity & some resistance
4.	Left Lower Limb	5/5 – Normal Power	Left Lower Limb	5/5 – Normal Power

Table 3: Observations

S. N.	Sign & Symptoms	Before Treatment	After Treatment
1.	Facial deviation	No	No
2.	Shoulder elevation	Yes	Yes
3.	Sensory Aphasia	No	No
4.	Elbow flexion-extension	Yes	Yes
5.	Forearm supination – pronation	Yes	Yes
6.	Wrist flexion-extension	Yes	Yes
7.	Grip Power	No	Yes
8.	Grasp of object	No	Yes
9.	Release of Object	No	Yes
10.	Catching of Object	No	Yes
11.	Throwing of Object	No	Yes
12.	Tying the Knot	No	Yes
13.	Clothing	No	Yes
14.	Feeding with hand	No	Yes
15.	Holding & Drinking glass of water	No	Yes
16.	Generalized weakness	Yes	No
17.	Weakness in affected hand	Yes	No
18.	Anxiety	Yes	No
19.	Headache	Yes	No
20.	Vertigo	Yes	No
21.	Tingling sensation	Yes	No

Table 4: Interventions

Date	Medicines	Dose	Frequency
05/02/2019	1. *Maharasnadi Kashaya* 2. *Yograj Gugglu* (with *Maharasnadi Kashaya)* 3. *Brahmi Vati* 4. *Shankhapushpi Churna* (2gm) + *Punarnava Churna* (2gm) + *Ashwagandha Churna* (2gm)	50 ml 2 Tabs 1 Tabs	Twice a day
22/02/2019	1. Continue same oral medicines 2. *Nasya Karma* with *Mashabaladi pachana kashaya*		For 14 –days
05/03/2019	1. Continue same oral medicines 2. *Abhayanga-Swedana*		For 7-days

28 /03/2019	*Virechana Karma* with *Trivrit Leha*		
12 /04/2019	1. Continue same same oral medicines 2. *Eranada-mooladi Yapna Basti*		For 8-days
21/04/2019	1. Continue same same oral medicines		For 15 days

MRI (HEAD) FINDINGS: Acute watershed infarcts right ACA-MCA and right MCA, PCA territories with acute focal infarct right frontal lobe.

DISCUSSION

Diminished blood flow to the brain results Watershed infarcts. *Akangavata*, is a *Nanatmaj Vatavyadhi* according to *Acharaya Charaka*. Due to the intake of various diet and regimen, *Vatadosha* gets vitiated and occupies the *Rikta Srotasa* in the body and ultimately it causes *vatvyadhi*. Increased *Ruksha Guna* of *Vata* causes *Rukshata* & *Parushata* in *Strotasa* which is the key point in *Samprapti* of *Akangavata*. So to compensate it*, Snehana, Swedana, Brihamana, Shodhan* and *Shaman* were used in the form of *Nasya, Virechana and Yapan Basti Karma*. These procedures were found to be beneficial in the management of *Akangavata (*monoplegia)[13]. *Nasya karma* provides significant and quick improvement in monoplegia. This is one among *Panchkarma* which cleanses and opens the channels of the *Shira*, thereby improving the process of *Prana* which has a direct influence on the functioning of brain. Many researches show that there is better absorption of drug in CSF through nasal route than any other routes. Nasal drug delivery is superior to that of oral because of hepatic first-pass metabolism and drug degradation is absent; nose-brain pathway leads to nearly immediate delivery of some nasal medications to the cerebral spinal fluid, by-passing the blood brain barrier. A variety of neuro therapeutic agents including small drug molecules, proteins, peptides, hormones and biological cells such as stem cells can be delivered by this route, thereby yielding new insights into prevention and management of different neurological disorders[14]. In *Mashabaladi - Pachana-Kashaya*, drugs are *Sheeta Virya, Snigdha guna, Madhura rasa* that subside the vitiated *Vata* by its nourishing property. The *Kashaya* is also *Siddha* by *Ghrita*, *Saindhava* and *Hingu,* due to *Ghrita* it is also helpful in nourishing and balancing *Vata*. *Hingu* and *Saindhava* are responsible for *Kapha Vilayana* and *Sroto Shodhana*[15]. It has *Balya*, *Vatahara* and *Brihmaniya* in nature. And also *Vrishya*, *Pittahara, Amapachana, Raktapittahara, Shothahara* and *Shoolahara*. It provides nourishment to the nervous system. All these properties of *Mashabaladi-pachana-kashaya* are considered to combat vitiation of *Vata* in *Pakshaghat, Manyasthambha, Karnanada* and *Ardita*[16]. *Mashabaladi Pachana Kshaya Nasya* explained in *Bhaisjyaratanawali*[17]. As described in the virtues of *Virechana Karma-Srotovishuddhi* is done by *virechana*. This virtue of *Virechana* checks the *Sanga* type of *Srotovishuddhi*. Impairment of function of *Mana*, viz., memory, general intelligence, etc. is seen in *Akangavata*. *Virechana* is *Buddhi Prasadana* and checks this impairment. *Virechana* increases the strength of *Indriyas* and thereby checks the impairment of *Indriyas*. *Virechana* imparts strength to the body and stabilizes all the *dhatus*. Hence useful in *Dhatukshayajanya Akangavata*. Therefore by all the above statements it can be concluded that *Virechana* is the best *shodhana* for *Akangavata*[18]. According to *Acharya Charaka, Basti* is one of the best treatments for *vatavyadhi*. It is the most important constituent of the *Panchkarma* due to its multiple effects. *Basti* eradicates vitiated *vata dosha* from the root. It also provides nutrition to the body tissue. *Basti Karma* with *Erandmooladi yapan Basti* (800ml) and *Dhanvantara Taila Anuvasana Basti* (lowest dose has been selected i.e.60 ml) in the form of *Yoga Basti* for 8-days.The pathological phenomena of *vata* playing central role in the manifestation of *Akanagavata* are *suddha vata prakopa, Anyadosha Samsirsta vata prakopa* and *dhatukshayajanya vata prakopa*. In *Ayurved*, by *Virechana*, *doshas* are eliminated through the *adhomarga* from body. *Basti* is the most important constituent of the *Panchakarma* due to its multiple

effects. *Basti* eradicates morbid *vata* from the root along with other *dosha* and in addition provides nutrients to the body tissue. Therefore; *basti* therapy covers more than half of the treatment of all the disease while some authors consider it as the complete remedy for all the ailments. *Basti* is considered the best remedy for morbid *Vata* but according to *Sushruta*, it can also be used in *Kaphaja* and *Pittaja* disorders by using different ingredients. Therefore, keeping this view of *Charaka* & *Sushruta* in mind, selected both procedures; *Virechana* & *Basti* in the management of *Akangavata* w.s.r. to monoplegia[19]. The present case report deals with the effect of *Ayurvedic* treatment in *Akangavata* (monoplegia). Patient was admitted for 2 months in our institute. We started with *Mashabaladi pachana kashaya Nasya Karma.* After that *Virechana* and *Basti karma* was done. During the course of *Basti* daily *Snehana* and *Swedana* was done. With this oral medication were also given which mentioned in table. During discharge Patient was happy as he was able to do his regular activities without any help. Inability to grip was one of the major presenting symptoms in this case, it recovered ~ 90% after treatment [20].

CONCLUSION

According to *Ayurveda: Snehana, Swedana & Mridu Samshodhana* are selective therapies for *Vata dosha*. *Nasya Karma* does have an excellent role in *Vata vyadhi*, since there is *Vikruti* in the *Mastishka Marma Sthana*, *Basti Karma* is the ultimate treatment modality advised for *Vata Vyadhis*, and *Virechana Karma* eliminates the *doshas* from body, eradicate the diseases and restore normal strength and complexion of the body. Thus the *Panchkarma* therapies: *Basti, Nasya & Virechana Karma,* along with internal medications has given remarkable result in this case of *Akangavata*, a *Vata Vyadhi* (Monoplegia, a Neuro-muscular disorder).

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