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# Ayurvedic management of Hemorrhagic Stroke : A Case Report

Veena G. Rao<sup>1</sup>, Apoorva M.S.<sup>2</sup>, Manasa S.D.<sup>3</sup>

<sup>1</sup>Professor & HOD, Department of PG Studies in Panchakarma, JSS Ayurveda Medical College, Mysuru, Karnataka, India.

<sup>2</sup>Final Year PG Scholar, Department of PG Studies in Panchakarma, JSS Ayurveda Medical College, Mysuru, Karnataka, India.

<sup>3</sup>Assistant Professor, Department of PG Studies in Panchakarma, JSS Ayurveda Medical College, Mysuru, Karnataka, India.

## ABSTRACT

WHO defines stroke as a "neurological deficit of cerebrovascular cause that persists beyond 24 hours or is interrupted by death within 24 hours". There are two main types of stroke: ischemic, due to lack of blood flow, and hemorrhagic, due to bleeding. Both cause parts of the brain to stop functioning properly. Stroke is a major global public health problem. According to the Global Burden of Diseases (GBD) study in 1990, stroke was the second leading cause of death worldwide. Subsequent efforts to update the GBD study reported nearly 5.87 million stroke deaths globally in 2010. With the rising proportion of mortality, stroke still remains the second leading cause of death worldwide. The present study is a diagnosed case of ruptured right DACA aneurysm and unruptured right MCA M1 segment aneurysm and ICD (International classification of diseases) classification as Subarchnoid hemorrhage from middle cerebral artery. The patient presented with symptoms of loss of strength and weakness in left upper & lower extremity with stiffness. The Ayurvedic diagnosis of *Vama Pakshaghata* was done and managed with *Dhanyamla Seka*, *Abhyanga*, *Shastika Shali Pinda Sweda*, *Dhara* and *Matrabasti*. Two assessments were made before and after treatment using the National Institute of Health Stroke Scale (NIH-SS). The patient got significant improvement in the signs and symptoms and improvement in movements within 45 days. The results were remarkably encouraging.

**Key words:** Stroke, Aneurysm, Hemorrhagic, Pakshaghata, Panchakarma.

## INTRODUCTION

The term *Pakshaghata* literally means paralysis of one half of the body, here impairment of *Karmendriyas*, *Gnyanendriyas* and *Manas* are seen. *Gnyanendriyas* are considered as part of the sensory system and *Karmendriyas* are considered a part of the motor system. *Pakshaghata* is a *Vatavyadhi* of *Nanatmaja* variety caused either due to *Dhatukshaya* or *Marga*

*Avarana* explained in different *Ayurveda Samhitas*. The features of *Pakshaghata* are *Chestahani* (impaired motor activity), *Ruja* (pain), *Vakstambha* (slurring of speech), and *Hasta Pada Samkocha* (rigidity of limbs). *Sandhi Bandhavimoksha* (weakness of joints) *Vakvkratha* (mouth deviation), *Sphurana of Jihva* (fasciculation of the tongue). *Pakshaghata* can be correlated with Hemiplegia of varied aetiology.

Stroke is defined as a sudden impairment or loss of consciousness, and voluntary motion that is caused by rupture or obstruction (as by a clot) of a blood vessel supplying the brain, and is accompanied by permanent damage of brain tissue. A stroke occurs when the flow of blood to part of the brain is cut off or significantly reduced.<sup>[1]</sup>

Strokes can be classified into two major categories: ischemic and hemorrhagic. Ischemic strokes are caused by interruption of the blood supply to the brain, while hemorrhagic strokes result from the rupture of a blood vessel or an abnormal vascular structure. About 87% of

### Address for correspondence:

Dr. Apoorva M.S.

Final Year PG Scholar, Department of PG Studies in Panchakarma, JSS Ayurveda Medical College, Mysuru, Karnataka, India.

E-mail: apoorva.ms29@gmail.com

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strokes are ischemic, the rest being hemorrhagic.<sup>[2]</sup> There are two main types of hemorrhagic stroke:

- Intracerebral hemorrhage, which is basically bleeding within the brain itself (when an artery in the brain bursts, flooding the surrounding tissue with blood), due to either intraparenchymal hemorrhage (bleeding within the brain tissue) or intraventricular hemorrhage (bleeding within the brain's ventricular system).
- Subarachnoid hemorrhage, which is basically bleeding that occurs outside of the brain tissue but still within the skull, and precisely between the arachnoid mater and pia mater (the delicate innermost layer of the three layers of the meninges that surround the brain).<sup>[3]</sup>

There are two possible causes of a ruptured blood vessel in the brain. The most common cause is an aneurysm. An aneurysm occurs when a section of a blood vessel becomes enlarged from chronic and dangerously high blood pressure or when a blood vessel wall is weak, which is usually congenital. This ballooning leads to thinning of the vessel wall, and ultimately to a rupture.<sup>[4]</sup>

*Panchakarma* is one of the important treatment modalities of *Ayurveda*. It is very useful in treating almost all neurological diseases i.e., *Vatavyadhi*. Here is a case of Haemorrhagic stroke treated with *Panchakarma* therapies effectively.

## CASE DESCRIPTION

A 45 year old female patient approached JSS Ayurveda hospital on 03/01/23 with the complaints of loss of motor function of her left side, and was diagnosed as a case of ruptured right DACA aneurysm and unruptured right MCA M1 segment aneurysm and underwent bifrontal craniotomy for the same on 20/12/22 and was treated in ICU for 10days.

### History

A female patient aged 45 years was said to be apparently healthy. On 17<sup>th</sup> of December 2022 she presented with sudden onset of headache which subsided on intake of medication. On 18/12/22 she had

one episode of vomiting following which she had loss of consciousness. No H/O seizure was present. She was taken immediately to Allopathic Hospital, and was advised for CT BRAIN. As per the reports the impression was Diffuse SAH in inter-hemispheric region and minimal IVH. MRI on right ICA injection 2 aneurysm were noted 1 right DACA aneurysm 2 right MCA-M2 segment aneurysm left A1 is hypo-plastic both A2 are filling from right A1. On 20/12/22 she underwent bifrontal craniotomy with right pterional extension inter-hemispheric approach and clipping of DACA aneurysm with trans-sylvian approach and clipping of right M1 MCA aneurysm. Check angio was done showed no residual aneurysm and severe spasm in right MCA and ACA branches. On post Operative day 3, she presented with weakness in left upper and lower limb. CT Scan showed right inferior segment MCA infarct. On 23/12/22 she underwent re-exploration of right craniotomy and bone flap removal with nobbing of the temporal base. She was treated for 10days and was discharged when her vitals stable. She approached JSS Ayurveda hospital later for further management.

### Past History

N/K/C/O Hypertension, Diabetis mellitus, IHD, Thyroid disorders.

### Personal History

Bowel : once/ day

Micturition : Catheterized.

Sleep : Sound

Diet : Ryle's tube feeding.

### General Examination

BP - 130/80mm Hg

PR - 78 bpm

RR - 20times/min

Height - 168 cm

Weight - 58 kgs

### Ashta Sthana Pariksha

Nadi - 78bpm

Mala - Once/day

Mutra - 3-4/1-2 times D/N

Jihva - Aipta

Shabda - Prakrutha

Sparsha - Prakrutha

Drik - Prakrutha

Akriti - Madhyama

**CNS Examination**

**Higher Mental Function**

Consciousness - Altered.

Orientation - Well oriented to time, place and person

Behaviour - Cooperative

Attentiveness - Stuporous

Memory - Immediate - Intact, Recent - Intact, Remote - Intact

**Cranial Nerve Examination**

Cranial nerve examination - Intact.

**Sensory System Examination** - Intact.

**Motor System Examination**

1. **Tropical changes** - No Pressure sores.
2. **Atrophy / hypertrophy** - Absent.
3. **Fasciculation and irritability** - Absent.
4. **Contraction and Contracture** - Absent.
5. **Involuntary movements** - Absent.
6. **Muscle power: (BT)**

	Right Limb	Left Limb
Upper Limb	5/5	1/5
Lower Limb	5/5	1/5

**7. Muscle tone (BT)**

Left limb	Clasp knife rigidity
Right limb	Normotonic

**8. Reflexes**

	Left limb	Right limb
Bicep's	+2	+1
Triceps'	+2	+1
Supinator	+2	+1
Knee Jerk	+3	+2
Ankle Jerk	+2	+1
Babinski Sign	Positive	Intact

**9. Co-ordination test**

- Finger nose test - Not possible in left hand.
- Knee heel test - Not possible in left leg.
- Gait - Patient is bedridden.

**10. Clonus** - Absent.

**NIH Stroke Scale Assessment<sup>[5]</sup>**

SN	NIH scale	Range of score	Before treatment	After treatment
1a	Level of consciousness	0 to 2	2	0
1b	LOC questions	0 to 2	1	0
1c	LOC command	0 to 2	2	0
2	Best gaze	0 to 2	1	0
3	Visual	0 to 3	2	0
4	Facial palsy	0 to 3	0	0
5	Motor arm	0 to 4	3	0
6	Motor leg	0 to 4	3	0
7	Limb ataxia	0 to 2	2	0
8	Sensory	0 to 2	1	0
9	Best language	0 to 3	2	0
10	Dysarthria	0 to 2	1	0

11	Extinction & inattention	0 to 2	1	0
	Total	42	21	0

The maximum score is 42, signifying severe stroke, the minimum score is 0, a normal exam; scores 5-15 are moderate strokes.

### Treatment

SN	Duration	Treatment	Medicine
1.	11 days	<i>Sarvanga Dhanyamla Seka</i>	<i>Ruksha</i>
2.	7 days	<i>Sarvanga Abhyanga</i> followed by <i>Ushna Jala Snana</i>	<i>Maha Masha Taila</i>
3.	14 days	<i>Sarvnaga Shastika Shali Pinda Sweda</i>	<i>Ksheerabala Taila</i>
4.	19 days	<i>Taila Dhara</i>	<i>Ksheerabala Taila</i>
5.	<i>Gandharva Hastadi Taila</i>	(0-0-10ml) 10ml before food with milk at night.	11 days
6.	26 days	<i>Matra Basti</i>	<i>Dhanwantara Ghrita</i> (50ml) + <i>Ksheerabala 101 Taila</i> (10ml)

### Oral Medicines

SN	Medicines	Dose	Duration
1.	<i>Tab. Rasaraja Rasa</i>	(1-0-1) 1 tablet morning & night after food with luke warm water	30 days
2.	<i>Tapyadi Loha</i>	(1-0-1) 1 tablet morning & night after food with luke warm water	30 days
3.	<i>Masha Atmaguptadi Kashaya</i>	(50ml-0-50ml) 50 ml <i>Kashaya</i> morning and night before food.	30 days

### DISCUSSION

*Acharya Charaka* has described *Pakshaghata* in *Vata Nanatmaja Vyadhi*<sup>[6]</sup> and *Acharya Sushruta* has mentioned in *Mahavatvyadhi*<sup>[7]</sup> and also *Acharya Charaka & Sushruta* has given treatment protocol of *Pakshaghata* which is *Snehana, Swedana, Mridu Virechana, Basti Karma, Murdhani Taila*.<sup>[8],[9]</sup> Accordingly treatment was given in this patient.

Treatment was started with *Gandharvahastadi Taila* internally along with *Tab. Rasaraja Rasa and Tapyadi Loha*. *Gandharvahastadi Taila* is a *Snigdha Anulomaka* which balances *Tridosha's* in the body specially *Vata*. It can be considered effective in reducing the brain edema. After 10days of administration of *G.H.Taila*, the stiffness and heaviness of Left half of the body was reduced. Mood of the patient changed from sad, depressed to Happy & cheerful. Significant results in memory, mood and motor functions were also observed during the time of its administration.

Ingredients of *Tapyadi loha* are mainly *Triphala, Pippali, Mandura Bhasma, Loha Bhasma, Roupya Bhasma* and *Swarna Makshika*. It is *Tridosahara* especially useful in haemorrhage or *Raktapitta*. *Rasaraja Rasa* is a *Rasa* preparation mainly having *Parada Bhasma* and *Abhraka Bhasma* which is indicated in all *Vatavyadhi's* specially indicated in *Pakshaghata* and *Arditha* and is *Balya*. *Masha Atmagupta Kashaya* contains *Atmagupta, Masha, Erandmoola Churna, Balamoola Churna* which is made into *Kashaya* form and added with pinch of *Hingu & Saindhava*. The only indication of this *Kashaya* is *Pakshghata*.

The treatment protocol of *Pakshaghata* which was followed is *Ama Nirharana, Vata Shamana* and later *Brimhana* respectively. Initially the patient was treated with *Sarvanga Dhanyamla Seka*. It is a *Ruksha Upakrama* which helps in relieving the *Ama*. For almost all the diseases initially *Ama* will be present, so *Ama Nirharana* will be the 1<sup>st</sup> line of management in treating any disease and so *Sarvanga Dhanyamla Seka* was done. After the *Ama* stage has passed then *Sarvanga Abhyanga* with *Maha Masha Taila* followed by *Ushna Jala Snana* was performed. Then it was shifted to



*Sarvanga Shastika Shali Pinda Sweda with Ksheerabala Taila. Shastika Shali Pinda Sweda* is a *Santarpana/Brimhana* therapy which nourishes the body and gives *Bala*. *Ksheerabala Taila* is *Snehana Vatapittashamaka & Balya*.

*Matra Basti with Dhanwantara Ghrita and Ksheerabala Taila 101* was started after *Kosta Shodhana* with *G.H.Taila*. *Ksheerabala Taila 101* which is commonly used to treat *Vata Roga* is *Indriya Prasadaka, Brihmana, Kupita Marga Shodhaka, Snehana* and *Rakta Prasadaka*. *Murdhni Taila* like *Taila Dhara* with *Ksheerabala Taila* was performed. *Murdhni Taila* mainly helps in relieving the stress and tension and there by relaxes the person and it also improves the blood circulation in the head. Initially the patient was not able to even move the Left limb but after treatment for 45 days, she was able to walk independently for a long distance without support.

## CONCLUSION

This case study demonstrates the successful management of a case of *Pakshaghata* using *Ayurvedic* treatment. There was a significant improvement in all assessments of NIH criteria, the total score reduced from 21 to 0. Initially the patient came for IPD in Stretcher and later at the time of discharge she was able to walk independently without support. Significant improvement in muscle power, muscle tone and movement were observed. On the basis of results observed in this case; it can be said that, *Panchakarma* procedures along with oral medication are effective in the management of *Pakshaghata*. These approaches are safe and effective. This case report serves as a lead for further researches in the management of Stroke w.s.r. to *Pakshaghata*.

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