Ayurvedic management of Hemorrhagic Stroke: A Case Report

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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 and hemiplegia as Subarchnoid hemorrhage from middle cerebral artery. The patient presented with symptoms of loss of strength and weakness in left upper & lower extremity and hemiplegia.

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) Vakvakratha (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.[1]

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
strokes are ischemic, the rest being hemorrhagic.[2]

There are two main types of hemorrhagic stroke:

a) 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).

b) 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).[3]

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.[4]

Panchakarma is one of the important treatment modalities of Ayurveda. It is very useful in treating almost all neurological diseases i.e., Vatavayadhi. 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 17th 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 - Alipta

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.


5. Involuntary movements - Absent.

6. Muscle power: (BT)

<table>
<thead>
<tr>
<th></th>
<th>Right Limb</th>
<th>Left Limb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Limb</td>
<td>5/5</td>
<td>1/5</td>
</tr>
<tr>
<td>Lower Limb</td>
<td>5/5</td>
<td>1/5</td>
</tr>
</tbody>
</table>

7. Muscle tone (BT)

<table>
<thead>
<tr>
<th></th>
<th>Right limb</th>
<th>Left limb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left limb</td>
<td>Clasp knife rigidity</td>
<td></td>
</tr>
<tr>
<td>Right limb</td>
<td>Normotonic</td>
<td></td>
</tr>
</tbody>
</table>

8. Reflexes

<table>
<thead>
<tr>
<th></th>
<th>Left limb</th>
<th>Right limb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicep’s</td>
<td>+2</td>
<td>+1</td>
</tr>
<tr>
<td>Tricep’s</td>
<td>+2</td>
<td>+1</td>
</tr>
<tr>
<td>Supinator</td>
<td>+2</td>
<td>+1</td>
</tr>
<tr>
<td>Knee Jerk</td>
<td>+3</td>
<td>+2</td>
</tr>
<tr>
<td>Ankle Jerk</td>
<td>+2</td>
<td>+1</td>
</tr>
<tr>
<td>Babinski Sign</td>
<td>Positive</td>
<td>Intact</td>
</tr>
</tbody>
</table>

9. Co-ordination test

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

10. Clonus - Absent.

NIH Stroke Scale Assessment[5]

<table>
<thead>
<tr>
<th>SN</th>
<th>NIH</th>
<th>Range of score</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Level of consciousness</td>
<td>0 to 2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>1b</td>
<td>LOC questions</td>
<td>0 to 2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1c</td>
<td>LOC command</td>
<td>0 to 2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Best gaze</td>
<td>0 to 2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Visual</td>
<td>0 to 3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Facial palsy</td>
<td>0 to 3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Motor arm</td>
<td>0 to 4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Motor leg</td>
<td>0 to 4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Limb ataxia</td>
<td>0 to 2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>Sensory</td>
<td>0 to 2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>Best language</td>
<td>0 to 3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>Dysarthria</td>
<td>0 to 2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
The maximum score is 42, signifying severe stroke, the minimum score is 0, a normal exam; scores 5-15 are moderate strokes.

**Treatment**

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

**Oral Medicines**

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

**Discussion**

Acharya Charaka has described Pakshaghata in Vata Nanatmaja Vyadhi and Acharya Sushruta has mentioned in Mahavatvyadhi and also Acharya Charaka & Sushruta has given treatment protocol of Pakshaghata which is Snehana, Swedana, Mridu Virechana, Basti Karma, Murdhani Taila. 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 Tridoshahara 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 1st 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 Vatapittamaka & 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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