

## Potential Implication of Ayurveda in Hemiplegia: A Case Study

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### Abstract

**Introduction:** The most prevalent condition, hemiplegia, is caused by a stroke that results in a neurological deficiency affecting one or both sides of the body, affecting the face, upper and lower limbs, and trunk. Due to similarities in clinical signs and symptoms, this illness and Pakshaghata in Ayurveda can be compared. According to Acharya Charaka, it is a Vatavyadhi, meaning that the pathophysiology of the condition involves vitiated Vata Dosha. It is advised to use oral Ayurvedic medications in addition to Panchakarma therapies since Pakshaghata is Nanatatmaja Vaat Vyadhi. The aggravated Vata Dosha goes in the Rikta Sthana and produces the disease one side of the body either right or left, leading to a disability called Pakshaghata. **Brief case history:** A 68-year-old female patient with left-sided hemiplegia arrived at the hospital with a diagnosis of haemorrhagic stroke. She had complaints of drooling from the mouth, abnormal speech, weakness & stiffness on the left upper & lower limb, and difficulty in walking for 1 month. She had admitted to B.G. Garaiya Ayurveda hospital and was treated with various Panchakarma procedures i.e., at different points during the illness; Mrudu Virechana, Shiro Basti, Nasya Karma, Matra Basti, and Shamana Aushadhi were adopted. She stayed 28 days in the hospital during which she had improvement in speech, walking, balance, and motor function. This shows the importance of Ayurvedic treatment in providing fast improvement in neurological conditions. **Conclusion:** Ayurvedic management of hemiplegia is effective in reducing signs and symptoms of the disease with an improvement in quality of the life.

**Keywords:** Pakshaghata, hemiplegia, stroke, Ayurveda

### INTRODUCTION

More than 85% of the world's stroke cases were in low- and middle-income nations [1]. So, with the help of Ayurvedic treatment of hemiplegia gives patients to perform their daily activities without support.

Hemiplegia is one of the neurological disorders caused by brain trauma, spinal cord injury, strokes, etc. It is manifested as the inability to work on the group of muscles, either the left or right side. Other features are weakness, spasticity, exaggerated deep tendon reflexes, decreased endurance, slurred speech, and mouth deviation [2]. Confusion and stupor may also be present during an attack, along with other related symptoms, such as visual disruption and sensory loss like numbness or paraesthesia in the face or limbs [3]. The terms 'Pakshaghata,' 'Pakshavadha,' and 'Ekanrogro' refer to the same illnesses and are used interchangeably in a variety of settings in classical treatises [4]. Pakshaghata refers to paralysis of one half of the body, whereas Aghata signifies impairment of the Karmendriya, Gyanendriyas, and

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*Mana*, and *Paksha* refers to either the right or left half of the body. *Sira*, *Snayu*, *Dhamani*, and other functions are disrupted by the sickness, which also affects the *Madhyama Roga Marga* (*Marma* and *Asthi Sandhi*). It is classified as *Nanatmaja Vyadhi* by Charaka Samhita because of the prevalence of *Vata Dosha* [5]. *Vata Dosha* is vitiated due to indulgence in various diets and regimens. Increased *Vata dosha* is accumulated in *Rikta Srotas* in body and manifests the clinical feature like slurring speech (*Vaksanga*), impairment of motor function (*Chesta Nivruti*), pain (*Ruja*), *Hasta Pada Samkocha* [6], weakness of muscles (*Sandhibandha Saithilya*), loss of consciousness (*Chetana Nasha*) [7].

## CASE PRESENTATION

A 68-year-old woman with left side hemiplegia arrived at B.G. Garaiya Ayurveda College, Rajkot, Gujarat, India for Ayurvedic treatment. She was presented with complaints of drooling from the mouth, abnormal speech, weakness and stiffness on the left upper and lower limb, and difficulty in walking for 1 month (Tables 1 and 2.) She had a history of hypertension for 2.5 years but due to some reasons patient had stopped antihypertensive medicaments, after the patient had difficulty in speech, balance, and walking on his left upper and lower limb, at that time patient was admitted to a private hospital for 1 month there she had treated with antihypertensive medicaments and physiotherapy but was not getting fully recovered. However, the patient was unable to walk, had difficulty in speech, and had weakness on the left side.

## Past Medical History

Before stroke antihypertensive medicaments & after stroke antihypertensive medicaments have been discussed below (Table 1).

**Table 1.** Past medical history of patient.

| Before Stroke Antihypertensive Medicaments | After Stroke Antihypertensive Medicaments |
|--------------------------------------------|-------------------------------------------|
| LTK 50 (0-0-1) for 2.5 year                | Telmisartine-40 mg twice a day (1-0-1)    |
| Amlodipine-5 mg once in a day              |                                           |

**Table 2.** Past and present status of ongoing medicine.

| Date                                            | Status of Patient                                                                                                                                                                                                                                                                                                                                                             | Ongoing Medicine                                                                                                                                                                                                                                                                         |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| January 2022                                    | K/c/o Hypertension – 2.5 years.                                                                                                                                                                                                                                                                                                                                               | Allopathic medicines – tablet LTK 50 (0-0-1) Amlodipine-5mg once in a day.                                                                                                                                                                                                               |
| 8 <sup>th</sup> March 2024                      | For some reasons the patient had to stop antihypertensive medicaments after the below symptoms started: <ul style="list-style-type: none"> <li>• Difficulty in speech, and balance</li> <li>• Difficulty in walking on his left upper and lower limb.</li> </ul> Diagnostic imaging was done and was referred to a neurologist. She was diagnosis as a left-sided hemiplegia. | The patient was admitted to a private hospital and she was treated with antihypertensive medicaments & physiotherapy for 1 month.                                                                                                                                                        |
| 14 <sup>th</sup> April 2024                     | There was a slight relief in symptoms but was not fully recovered.                                                                                                                                                                                                                                                                                                            | Allopathic medication and physiotherapy were ongoing but no considerable relief was there.                                                                                                                                                                                               |
| 16 <sup>th</sup> April 2024                     | Assessment of patient at OPD level.                                                                                                                                                                                                                                                                                                                                           | Admitted for in-patient treatment.                                                                                                                                                                                                                                                       |
| 16 <sup>th</sup> to 20 <sup>th</sup> April 2024 | Drooling from the mouth, abnormal speech, weakness and stiffness on the left upper and lower limb, and difficulty in walking for 1 month.                                                                                                                                                                                                                                     | <i>Abhyanga</i> and <i>Svedana</i> were done for 2 days followed by <i>Samshodhana</i> with <i>Virechana Karma</i> . After <i>Sanshodhana</i> two days of <i>Sansarjana Karma</i> .                                                                                                      |
| 21 <sup>st</sup> April 2024 onwards             | <b>Nervous system examination-</b> Speech – Slurred speech, muscle wasting was seen in left upper limb (Fore-arm), Hypertonia, left limb power of muscle – grade 3/5, Finger-Nose test, Finger-Nose-Finger test, Finger to Finger test – Over shooting, Heel-Knee test – not able to perform. Reflexes: Biceps, Triceps, Supinator – Brisk. Knee, Ankle – Exaggerated.        | <i>Sanshamana</i> treatment with <i>Asvagandha Churna</i> , <i>Balamula Kvatha</i> , <i>Bala Taila</i> ( <i>Shamanartha Snehapana</i> ) and daily <i>Abhyanga-Masha Pinda Svedana</i> , Physiotherapy, <i>Kavala</i> , <i>Nasya</i> , <i>Shiro Basti</i> , <i>Matra Basti</i> were done. |

|                            |                                                                                                                                                                                                                       |                                                                                                                                                                       |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14 <sup>th</sup> May 2024  | Discharged-Heel-Knee test – slightly over shooting<br>Reflexes: Biceps, Triceps, Supinator- Brisk Knee, Ankle-Brisk Walk with support, Improvement in speech also, increase muscle power and not found muscle wasting | After discharge she was kept on Sanshamana treatment with <i>Asvagandha Churna</i> , <i>Balamula Kvatha</i> , <i>Bala Taila</i> ( <i>Shamanartha Snehapana</i> ) only |
| 29 <sup>th</sup> May 2024  | Outpatient department patient assessment.                                                                                                                                                                             | <i>Asvagandha Churna</i> , <i>Balamula Kvatha</i> , <i>Bala Taila</i> ( <i>Shamanartha Snehapana</i> ) only advised routine check-up after every 2 weeks.             |
| 12 <sup>th</sup> July 2024 | Stopped drooling from the mouth, improvement in speech, not found weakness and stiffness on the left upper and lower limb and walking with support of stick.                                                          | No progressive changes were seen in CT scan conducted after treatment. gradual progress was observed.                                                                 |

### Timeline

Status of the patient & ongoing Medication have been discussed below in Table 2.

### CLINICAL FINDINGS

- MRI angiography of head and neck (10/3/24).
- Subtle luminal irregularities and mild luminal narrowing in distal segments of both posterior cerebral arteries.

Retropharyngeal course of extracranial segment of both internal carotid arteries.

- CRP – 49.9 mg/dl
- USG Abdomen: Grade I fatty changes in liver.

### Management

No. of days & given treatment have been discussed below in Table 3.

### Result – Follow up

The patient stayed for 28 days in the hospital during which she had improvement in speech, walking, balance, and motor function. This shows (Table 4) the importance of Ayurvedic treatment providing fast improvement in neurological conditions.

**Table 3:** Given treatment to patient.

| Days                                                                                                                | Given Treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 <sup>nd</sup> day                                                                                                 | <i>Sarvanga Abhyanga &amp; Sarvanga Nadi Svedana</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 3 <sup>rd</sup> day                                                                                                 | <i>Sarvanga Abhyanga &amp; Svedana, Mridu Virecana</i> with the help of the <i>Eranda Sneha</i> (50 ml) + <i>Dindayal Churna</i> (5 gm) with warm water. After <i>Virecana Karma</i> , <i>Samsarjana Krama</i> was followed for 3 days.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| After completion of the <i>Samsarjana Krama</i> , the following treatment was given up to the 25 <sup>th</sup> day. | <ol style="list-style-type: none"> <li>1. <i>Sarvanga Abhyanga</i> with <i>Bala Taila</i>.</li> <li>2. <i>Sarvanga Masha Pinda Svedana</i>.</li> <li>3. <i>Nasya Karma</i> – eight drops in each nostril with <i>Bala Taila</i>.</li> <li>4. <i>Matra Basti</i> – 40 ml with <i>Bala Taila</i>.</li> <li>5. <i>Shiro Basti</i> with <i>Bala Taila</i> (45 minutes).</li> <li>6. <i>Kaval</i> with the help of <i>Bala Taila</i>.</li> <li>7. Physiotherapy.</li> <li>8. <i>Balamula Kvath</i> 40 ml twice a day.</li> <li>9. <i>Ashvagandha Churna</i> 3 gm twice a day with milk.</li> <li>10. <i>Bala Taila</i> 20 ml twice a day with <i>Kvath</i> for <i>Smanartha Snehana</i>.</li> </ol> |

### CLINICAL EXAMINATION

The Clinical Examination of the Patient is Depicts in Table 4.

### DISCUSSION

*Pakshaghata* is described under *Nanatmaj Vyadhi* [8] of *Vata* which mainly occurs due to vitiation of *Vata Dosha*. The treatment protocol for the *Vata Vyadhi* in *Charaka Samhita* includes *Sneha Yukta Svedana* and *Virechana Karma* [9]. Here in this study patient was given *Snehana* treatment like

*Abhayanga, Matrabasti, Shirobasti, Nasya Karma and Abhayantara Snehana with Bala Taila and Mridu Shodhana with Eranda Sneha and Dindayal Churna* were given. *Taila* is the best among all *Vatahara* treatment [10]. *Taila* nourishes all tissues of the body by its *Snigdha* and *Guru* properties. It decreases *Ruksha Guna* and *Laghu Guna* of *Vata Dosha* which are responsible for the degeneration of the tissues in the body [11]. *Abhayanga* and *Mashpinda Svedana* [12] increase the tone of paralyzed muscles and improve the strength of weak muscles. Also, it helps in releasing the spasticity, providing improvement in motor weakness including motor dysfunctions and relieving pain. *Matra Basti* works as *Balya, Bruhaniya* and *Vatanashak* which helps for the nourishment of *Dhatu* [13]. Also, *Shirobasti* and *Shamana Nasya* [14] play an important role in the alleviation of *Vata Dosha*. Along with this oral *Vata Shamana* medicine, *Ashvagandha* and *Balamula Kvath* were given after *Mridu Shodhana*. *Ashvagandha* is a *Balya, Vatahara*, and *Rasayana* which helps to cure *Pakshghata* by preventing degenerative changes, nervine tonic effect and *Indriya Prasadana* also. *Bala* is *Tridoshanashak, Balya, Ojovardhak, Shophanashini, Dhaturvardhak, Pushtikar*, and *Vatanulomanam*. Hence, it is useful in *Dhatu Kshaya Janya Vata Roga*. It is said to restore muscular function and body strength and is useful in *Vatavyadhi Chikitsa*.

**Table 4.** Nervous system examination of patient.

| Nervous System Examination                   |                                                   |                               |                                                             |                                       |                                                      |                                     |                     |
|----------------------------------------------|---------------------------------------------------|-------------------------------|-------------------------------------------------------------|---------------------------------------|------------------------------------------------------|-------------------------------------|---------------------|
|                                              |                                                   | Before Treatment              |                                                             | After Treatment                       |                                                      | 1 <sup>st</sup> Follow up (14 Days) |                     |
| <b>1. Examination of Higher Center</b>       |                                                   |                               |                                                             |                                       |                                                      |                                     |                     |
| 1. Level of consciousness                    | 2. Orientation                                    | 3. Mood, Memory, Intelligence | 4. Handedness.                                              | 5. Hallucination, Illusion, Delusion. | 6. Speech.                                           | 7. Sleep.                           |                     |
| 1. Fully conscious.                          | 2. Fully oriented.                                | 3. Normal.                    | 4. Righty.                                                  | 5. Not found.                         | 6. Slurred speech.                                   | 7. Sound.                           | 1. Fully conscious. |
| 2. Fully oriented.                           | 3. Normal.                                        | 4. Righty.                    | 5. Not found.                                               | 6. Speech improved.                   | 7. Sound.                                            |                                     | 2. Fully oriented.  |
| 3. Normal.                                   | 4. Righty.                                        | 5. Not found.                 | 6. Improved.                                                |                                       |                                                      |                                     | 3. Normal.          |
| 4. Righty.                                   | 5. Not found.                                     |                               |                                                             |                                       |                                                      |                                     | 4. Righty.          |
| 5. Not found.                                |                                                   |                               |                                                             |                                       |                                                      |                                     | 5. Not found.       |
| 6. Improved.                                 |                                                   |                               |                                                             |                                       |                                                      |                                     | 6. Improved.        |
| 7. Sound.                                    |                                                   |                               |                                                             |                                       |                                                      |                                     | 7. Sound.           |
| <b>2. Examination of Motor System</b>        |                                                   |                               |                                                             |                                       |                                                      |                                     |                     |
| a. Inspection                                | Muscle wasting seen in left upper limb (Forearm). |                               | Improvement in muscle wasting in left upper limb (Forearm). |                                       | No muscle wasting seen in left upper limb (Forearm). |                                     |                     |
| b. Assessment of tone of muscle              | Hypertonia                                        |                               | Hypertonia                                                  |                                       | Hypertonia                                           |                                     |                     |
| c. Power or strength of muscle               | Left – grade 3/5.<br>Right – grade 5/5.           |                               | Left – grade 4/5.<br>Right – grade 5/5.                     |                                       | Left – grade between 4 to 5/5.<br>Right – grade 5/5. |                                     |                     |
| a. Co-ordination                             | (Left side)                                       |                               |                                                             |                                       |                                                      |                                     |                     |
| 1. Finger-Nose test.                         | Over shooting.                                    |                               | Over shooting.                                              |                                       | Slight over shooting.                                |                                     |                     |
| 2. Finger-Nose-Finger test.                  | Over shooting.                                    |                               | Over shooting.                                              |                                       | Slight over shooting.                                |                                     |                     |
| 3. Finger to Finger test.                    | Not able to perform                               |                               | Over shooting.                                              |                                       | Slight over shooting.                                |                                     |                     |
| 4. Heel-Knee test.                           |                                                   |                               | Over shooting.                                              |                                       | Slight over shooting.                                |                                     |                     |
| a. Involuntary movement                      | Absent.                                           |                               | Absent.                                                     |                                       | Absent.                                              |                                     |                     |
| <b>3. Examination of Sensory System</b>      |                                                   |                               |                                                             |                                       |                                                      |                                     |                     |
| a. Touch.                                    | Normal.                                           |                               | Normal.                                                     |                                       | Normal.                                              |                                     |                     |
| b. Pain.                                     | Normal.                                           |                               | Normal.                                                     |                                       | Normal.                                              |                                     |                     |
| c. Temperature.                              | Intact.                                           |                               | Intact.                                                     |                                       | Intact.                                              |                                     |                     |
| d. Sense of joint position.                  | Normal.                                           |                               | Normal.                                                     |                                       | Normal.                                              |                                     |                     |
| <b>4. Examination of Reflexes – as below</b> |                                                   |                               |                                                             |                                       |                                                      |                                     |                     |
|                                              | Right                                             | Left                          | Right                                                       | Left                                  | Right                                                | Left                                |                     |

|            |         |              |         |        |         |        |
|------------|---------|--------------|---------|--------|---------|--------|
| Biceps.    | Normal. | Brisk.       | Normal. | Brisk. | Normal. | Brisk. |
| Triceps.   | Normal. | Brisk.       | Normal. | Brisk. | Normal. | Brisk. |
| Supinator. | Normal. | Brisk.       | Normal. | Brisk. | Normal. | Brisk. |
| Knee.      | Normal. | Exaggerated. | Normal. | Brisk. | Normal. | Brisk. |
| Ankle.     | Normal. | Exaggerated. | Normal. | Brisk. | Normal. | Brisk. |

## CONCLUSION

Particularly for neuromuscular problems, Ayurveda is thought to have therapeutic effects. *Panchakarma* and oral Ayurvedic formulations are the therapy modalities used for *Pakshaghata*, who belongs to the category of *Vaat Nanatmaja Vayadhi*. Current Ayurvedic management of hemiplegia is effective in reducing signs and symptoms of the hemiplegia with an improvement in quality of the life. The patient's motor function was enhanced by the oral drugs and *Panchakarma* therapies used to treat this case. For total alleviation, though, long-term care might be needed. Thus, in hemorrhagic stroke, the implemented measures aid in the management of residual disability in the form of hemiplegia. It will take more investigation in the form of randomised controlled clinical studies to verify the results of this case study.

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