



An Ayurvedic Approach to Medullary Infarction: A Case Study

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ABSTRACT:

Pakshaghata is one among the vataja nanatmaja vyadhi(1). It is mentioned by acharya sushruta as mahavatavyadhi (2). Samprapti of all vatavyadhi can be analysed in 2 ways namely Dhatukshaya and Margavarana. Pakshaghata can be co-related to stroke which is leading cause of disability, with 15 million people affected worldwide every year. It can be broadly classified into two types i.e. ischemic and haemorrhagic and depending upon site it can be classified into two types i.e. intracerebral and sub arachnoid. Panchakarma is Shodhana Pradhana therapy, which includes five major procedures for Shodhana of body. A Male patient of 57 years old presented with weakness in bilateral lower limb and giddiness since 10 days and advised for panchakarma therapy with oral medication for 17 days. The treatment protocol included Shirodhara, seka, abhyanga, talam, basti along with some internal medicine and Physiotherapy. Difficulty in walking and giddiness has significantly improved following the aforementioned treatment. At the conclusion of the treatment according to SSS criteria the score improved from 41 to 53. Hence there was an observable change in the mobility and strength after Panchakarma treatment.

Introduction:

Hemiparesis is inability to move on one side of the body which makes difficulty in performing routine activities like eating, dressing, toileting etc. Various etiological factors are considered which are responsible for disease such as; hypertension, stress, vascular disorders, infestations of brain tissue, tumours and trauma etc. The prevalence of stroke in our country ranges from 40-270 per 100000 population⁽³⁾. On the basis of morbidity out of all cases 45% patients of stroke can live independently, 22% patients become dependent on others and 20% patients' needs admission in hospitals⁽⁴⁾.

Medullary infarction, a rare type of ischemic stroke that affects the medulla oblongata and manifests as episodes of vertigo, dizziness, diplopia, dysarthria, dysphasia, incoordination of gait and limbs etc

Ayurveda describe various disease associated with Vata Dosha and *Pakshaghata* is one of them. *Pakshaghata* is one of the *vataja nanatmaja vyadhi*¹ where *vata doshas*

plays an important role in disease development. *Pakshaghata-paksha* is either side of thye body (i.e., *vama/Dakshina bhaga*). *ghata-karmakshaya* (working capacity is reduced). *Pakshaghata* has several synonyms depending on the portion of the body affected, such as *pakshavadha*, *ekangaroga*, and *sarvanga roga*². *Pratyatma lakshanas* of *pakshaghata* includes *ruja*, *cheshtahani*, *hastapadasankocha* and *sandhivimoksha*³.

For diseases like *pakshaghata*, Acharya sushruta has mentioned *snehana*, *swedana* and *mrudu samshodhana* and *basti*⁽⁵⁾ are main line of treatment. In the current case study, treatment includes *Dhanyamla seka*, *abhyanga*, *shashtikashali pinda sweda*, *Talam*, *Basti* along with physiotherapy and *shamanaushadhis*.

Case Report:

The patient was reportedly asymptomatic until approximately 10 days ago, when he experienced an abrupt onset of neurological symptoms. These included



giddiness, blurring of vision in the right eye, and weakness in the right upper and lower limbs. The symptoms were accompanied by headache, vomiting, and imbalance while walking, with a noticeable tendency to sway and fall towards the right side.

He was admitted to a hospital, where MRI of the brain revealed infarction in the right half of the medulla and age-related cerebral atrophy. During his stay in the ICU (7 days), he developed difficulty in swallowing, necessitating insertion of a Ryle's tube for nutritional support. Additionally, due to loss of bladder sensation, urinary catheterization was performed.

During the hospital course, the patient noted improvement in the strength of his right-sided limbs along with reduction in headache, vomiting, and blurred vision. However, several symptoms persisted, including:

- Giddiness and imbalance while walking
- Difficulty in swallowing
- Weakness in both lower limbs
- Loss of bladder sensation

Due to these ongoing concerns, the patient approached JSS Ayurveda Hospital seeking integrative care and further rehabilitation.

Past history: Nothing significant

Family history: Nothing significant

Personal history:

Bowel- Regular, clear (1 time/day)

Micturition – Catheterized (600-800ml)

Sleep- sound

Habits- NIL

Diet- Ryles tube insitu

General Examination:

- BUILT-Moderate
- APPEARANCE- fair, moderately built
- TEMP-afebrile

- BP-130/80 mm/hg
- PR-76bpm
- PALLOR-absent
- ICTERUS-absent
- CYANOSIS-absent
- CLUBBING-absent
- LYMPHADENOPATHY-absent
- EDEMA- absent

Astha Sthana Pareeksha:

- NADI-76bpm
- MALA- once or twice a day
- MOOTRA-catheterized
- JIHWAA-prakruta
- SHABDHA-prakruta
- DRIK- prakruta
- SPARSHA- anushnasheeta
- AKRUTI-madhyama

Dashavidha Pareeksha:

- PRAKRUTI-vata pitta
- VIKRUTI- vata pradhana tridosha
- SARA-madhyama
- SAMHANANA-madhyama
- PRAMANA-madhyama
- SATVA- madhyama
- SATMYA- madhyama
- AHARA SHAKTI-madhyama
- VYAYAMA SHAKTI-madhyama
- VAYA-madhyama

Systemic Examination:

CVS: On Auscultation; S1, S2 heard, no added murmurs.



RS: S1 & S2 heard, no added sounds.

Orientation -Patient is oriented to time, place and person

PA: soft and non-tender.

Speech-Normal

CNS:

Memory- Intact

Higher Mental Function - Intact

All Cranial nerves are intact

TABLE NO 1: Musculoskeletal examination:

SL NO	EXAM	RIGHT UL	LEFT UL	RIGHT LL	LEFT LL
1	Sensation	intact	Intact	Intact	intact
2	Muscle power	5/5	5/5	4/5	4/5
3	Muscle tone	Normotonic	Normotonic	Normotonic	Normotonic
4	Muscle bulk	Normal	Normal	Normal	Normal
5	Reflexes	Normal	Normal	Exaggerated	Exaggerated
6	Joint movement	Shoulder joint-possible Elbow joint-possible Wrist joint-possible	Shoulder joint-possible Elbow joint-possible Wrist joint-possible	Hip joint-Restricted Knee joint- Restricted Ankle joint- Restricted	Hip joint- Restricted Knee joint- Restricted Ankle joint- Restricted
7	Co-ordination test	Finger-to-nose test: Possible	Finger-to-nose test: Possible	Heel-shin test: Not possible	Heel-shin test: Not possible

- Romberg’s sign- positive
- Tandem walking- Positive

2.Age related cerebral atrophy

MRI Scan of Brain (Plain)-(28/10/2024)

INVESTIGATIONS:

Impression:

MRI Scan of Brain with Angiography-(31/10/2024)

1.Infarct right half of medulla

Impression:

2.Age related cerebral atrophy

1.Infarct right half of medulla

TABLE NO 2: Treatment

SL NO	TREATMENT GIVEN	MEDICINE	NO OF DAYS
1	Shirodhara	Ksheerabala Taila	05/11/2024 to 19/11/2024
2	Sarvanga Seka	Dhanyamla	05/11/2024 to 10/11/2024
3	Sarvanga Abhyanga Nadi Sweda	Ksheerabala Taila	11/11/2024 to 17/11/2024
4	Sarvanga Shashtikashali Pinda Sweda	Ksheerabala Taila	18/11/2024 to 20/11/2024
5	Talam With	Rasnadi Choorna + Lemon	15/11/2024 to 20/11/2024
6	Anuvasana Basti	Dhanwantaram Taila-30ml + Ashwagandha Ghrita-30ml	12/11/2024 to 20/11/2024

**TABLE NO 3: Shamanaushadhis:**

Sl No	Medication	Dose	No Of Days
1	G H Oil	0-0-20ml Before Food	05/11/2024 to 10/11/2024
2	Drakshadi Kashaya + Mrudvikadi Kashaya	20ml-0-20ml After Food	05/11/2024 to 10/11/2024
3	Danadanayanadi Kashaya	10ml-0-10ml After Food	11/11/2024 to 20/11/2024
4	Tab.Brihatvata Chintamani Rasa With Gold	1-0-1 After Food	05/11/2024 to 19/11/2024
5	Tab.Rasa Raja Rasa	1-0-1 After Food	05/11/2024 to 19/11/2024

Results:**TABLE NO 4: Assessment Before And After Treatment:**

FEATURES	BEFORE TREATMENT	AFTER TREATMENT
Giddiness	Present	Absent
Muscle power (LL)	4/5	5/5
Swaying toward right side	Present	Absent
Walking	Possible with difficulty and maximum support	Possible without any support
Urine	Catheterized	Passes without any difficulty
Swallowing	Ryles tube was inserted	Could able to eat food without any difficulty

TABLE NO 5: SCANDINAVIAN STROKE SCALE(SSS)- Objective Parameter

SSS ASSESMENT VARIABLES	BT	AT	AFTER FOLLOW-UP
Consciousness	6	6	6
Orientation	6	6	6
Speech and verbal communication	10	10	10
Facial palsy	2	2	2
Gait	6	9	12
Arm: motor power/raising- right UL	6	6	6
Hand: motor power/movements-right UL	6	6	6
Leg motor power/raising- B/L LL	5	5	5
Total SSS(max-58)	41	50	53



TABLE NO 6: Medications Prescribed On Discharge:

SL NO	MEDICATION	DOASAGE
1	Ekanga veera rasa	1-0-1 after food
2	Danadanayanadi Kashaya	15ml-0-15ml with equal quantity of water after food
3	Cap.GHE	0-0-1 (B/F)

Discussion:

The present case is right medulla infarction which manifest as episodes of vertigo, dizziness, diplopia, dysarthria, dysphasia, incoordination of gait and limbs etc and this patient presented with Ipsilateral hemiparesis. After conservation line of management in allopathic hospital power of upper limb improved but when patient approached our hospital, he developed weakness in both lower limbs.

Ayurveda is a science which not only treats symptoms but cause of the disease ultimately leads to *samprapti vighatana* thus cures the disease.

Acharya Charaka has described *Pakshaghata* in *Vata Nanatmaja Vyadhi* ⁽⁶⁾ and Acharya Sushruta has mentioned in *Mahavatvyadhi* ⁽⁷⁾. Acharya Vagbhata in the context of *Pakshaghata* stated that when aggravated *Vata* takes *Ashraya* in *Sira Snayu* of half of the body, it produces *Karma kshaya* of half of the body and is called as *Pakshaghata* or *Ekangaroga*. In the same way if *Karma kshaya* is produced all over the body it is called *Sarvangaroga*.

Here *Samprapti* of *KaphavritaVata* (specially *VyanaVata*) ⁽⁸⁾ can be derived. These *Doshas* takes *Ashraya* in *Sira Snayu* of both sides of the body producing *Karma kshaya* of both *Hasta* and *Pada* (i.e half of the body) resulting in *Ekanga roga* or *pakshaghata*. Even Charaka has included *Ekangaroga* and *Sarvangaroga* under *Snayugata Vata* ⁽⁹⁾

The treatment protocol of *Pakshaghata* which was followed is removal of *kaphavarana* ⁽¹⁰⁾, *Vata Shamana* and later *Brimhana* respectively. Treatment was started with *Gandharvahastadi Taila* ⁽¹¹⁾ internally along with *Tab. Rasaraja Rasa* and *Brihat vata Chintamani rasa*. *Gandharvahastadi Taila* is a *Snigdha Anulomaka* which balances *Tridosha's* in the body specially *Vata*. After

administration of G.H.Taila, the stiffness and heaviness of lower limb was reduced. Significant results in reducing guiddiness was also observed during the time of its administration.

Initially the patient was treated with *Sarvanga Dhanyamla Seka*. It is a *Ruksha Upakrama* which helps in removing *kaphavarana* and relieving the *Ama*. For almost all the diseases initially *Ama* will be present, so *Ama Nirharana* should be done in treating any disease and so *Sarvanga Dhanyamla Seka* was done ⁽¹²⁾. After that *Sarvanga Abhyanga* with *ksheera bala taila* followed by *nadi sweda* 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*.

Basti (Enema) -When *Basti* administered into the *Pakwashaya*, the *Veerya* of *Basti* reaches all throughout the body, collects the collected *Doshas* and *Shakrut* from the *Nabhi*, *Kati*, *Parshwa*, and *Kukshi Pradeshas*, gives the body *Snehana*, and expels the *Dosha* together with *Pureesha*. It is '*Amrutopamam*' for patients with *Kshina Majja*, *Shukra*, and *Oja*, according to *Charakacharya*, and has properties such as *Balya*, *Brimhana* and *Pushtikara*

Anuvasana Basti with *Dhanwantara Ghrita* and *Ashwagandha ghrita* was started after *Kosta Shodhana* with G.H.Taila. While reviewing the *AnuvasanaBasti*, Acharya Charaka notes *Sneha's* digestion with the words "*Sneham Pachati Pavakah*," and after digestion, *Dravyas* can be taken to cause the effect on the body. In the *Vatvyadhi Prakarana* of *Nighantu Ratnakara*, *Ekangaveer Rasa* is advised for treatment of *Pakshaghata*, *Ardita* and other *Vatvyadhi*. *Ekangaveer Rasa* has ability to pacifying vitiated *Vata Doshas* as it is



having *Madhura Rasa, Snigdha Guna, UshnaVeerya* and *Madhura Vipaka*. It pacifies vitiated *Kapha Dosha* by *Tikta, Katu, Kashaya Rasa, Laghu Guna, Ruksha Guna, Ushna Veerya* and *Katu Vipaka*

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 had difficulty in walking but after treatment for 17 days, he was able to walk independently for a long distance without support, guiddiness and swaying towards right side was also reduced.

Physiotherapy is a therapeutic practice that focuses on the science of movement and assists patients in restoring, maintaining, and optimizing their physical strength, function, motion, and general wellness. Physiotherapy is used throughout the treatment to increase joint range of motion and muscular flexibility. The goal of physiotherapy in this setting is to enhance joint integrity and muscular flexibility, as well as to meet any delayed developmental milestones as soon as feasible. Increased circulation to all four limbs and brief pain alleviation are among the other advantages. Consider the spasticity; joint mobility and flexibility were achieved with Range of Motion (ROM) exercises, passive stretching, and peripheral joint mobilization. Proper Ayurvedic management, as well as speech therapy, physiotherapy, and other rehabilitation methods assist the patient in becoming self-sufficient

Intrestingly, the study found that patients undergoing a combination of ayurvedic therapies along with physiotherapy and showed better improvement in mobility. This reinforces the findings of recent clinical trials suggesting the potential for integrative medicine in treating neurological disorders. The combination of both ayurvedic therapy and physiotherapy enhanced patients' outcomes, reducing physical impairment faced by individuals with *pakshaghata*.

Conclusion:

Pakshaghata is *vata pradhana vyadhi* which causes loss of function of one half of the body and it may be compared to hemiplegia of any origin.

This case study demonstrates the successful management of a case of *Pakshaghata* using Ayurvedic treatment. There was a significant improvement in all assessments SSS criteria, the total score improved from 41 to 53. Initially the patient came for IPD in Wheelchair and later at the time of discharge he 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 *pakshaghata* w.s.r to Stroke.

DECLARATION OF PATIENT CONSENT:

The authors confirm that they have acquired a patient consent form, in which the patient or caregiver has granted permission for the publication of the case. The patient or caregiver acknowledges that their name and initials will not be disclosed, and sincere attempts will be undertaken to safeguard their identity. However, complete anonymity cannot be assured.

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