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Role of Ayurvedic Shamana and Panchakarma Therapy in Post-Stroke Pakshaghata due to Cerebral Venous Thrombosis: A Case Study

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ABSTRACT

Cerebral Venous Thrombosis (CVT) is a rare form of stroke that predominantly affects young adults and presents with varied neurological manifestations such as headache, seizures and focal neurological deficits. It occurs due to thrombosis of cerebral veins and dural venous sinuses, leading to venous congestion, raised intracranial pressure and venous infarction with or without hemorrhage. In ayurveda it can be correlated as Rakta Pradoshaja Vikaras. This paper presents a single case of a 34-year-old male diagnosed with Cerebral Venous

Thrombosis with hemorrhagic venous infarct, who presented with right-sided hemiplegia and seizure episodes. The patient was managed with Ayurvedic treatment comprising internal medications and Panchakarma procedures aimed at Vata Shamana, Rakta Prasādana and restoration of normal motor function. Clinical assessment was carried out using the National Institutes of Health Stroke Scale (NIHSS). Significant improvement was observed in motor functions, pain and functional ability, with a reduction in NIHSS score from 6 before treatment to 2 after treatment. This case highlights the potential role of Ayurvedic management in improving functional outcomes in Pakshagata secondary to Cerebral Venous Thrombosis.

Keywords: Cerebral Venous Thrombosis, Stroke, Hemiplegia, Pakshaghata, Panchakarma, NIHSS

INTRODUCTION:

Cerebral Venous Thrombosis (CVT) is a relatively uncommon cerebrovascular disorder, accounting for approximately **0.5–1% of all cerebrovascular diseases**, with an estimated annual incidence of **3–4 cases per million population**. CVT predominantly affects young adults and occurs due to thrombosis of cerebral veins and dural venous sinuses, leading to impaired venous drainage, raised intracranial pressure and venous infarction with or without hemorrhage[1].

In Ayurveda, **cerebral venous thrombosis (CVT)** does not have a direct one-to-one correlation with any

single disease entity described in the classical texts. However, based on the pathophysiology and clinical manifestations, it can be understood through conditions such as ***Sira Granthi, Grathita Rakta, Siragata Vata and Pakshaghata***, depending upon the extent of Dosha, Dhatu and Srotas involvement[2]. The formation of thrombus and venous obstruction may be interpreted as ***Srotorodha or Sanga*** in Sira and Rakta, primarily due to Vata-pradhana Tridosha dushti with Rakta involvement[3]. Vitiated Vata, when obstructed by

Kapha or Rakta, leads to impaired circulation, stagnation and clot formation, resembling ***Grathita Rakta*** *and* ***Sira Granthi***[4].

As the pathology progresses to involve *Shiras and Mastishka*, features such as headache, seizures, neurological deficits and altered motor functions manifest, corresponding to ***Siragata Vata***. Further impairment of neuromuscular transmission and cerebral functions results in unilateral motor weakness, clinically presenting as ***Pakshaghata***, characterized by Cheshta-Nivrutti and Ruja[5]. Thus, CVT may be conceptualized in Ayurveda as a dynamic pathological spectrum, wherein disease expression varies with chronicity, site of involvement and Dosha–Dushya predominance, forming the basis for individualized Ayurvedic management.

CASE STUDY:

Materials & Methods:

Place of Study: Out- Patient Department of Kaya Chikitsa, Dr. BRKR Government Ayurvedic College & Hospital, Erragadda, Hyderabad, Telangana, India.

PATIENT INFORMATION:

A 34-year-old male patient, a car driver by occupation, resident of Hyderabad, presented to the Kaya Chikitsa OPD-1 of Government Ayurvedic Hospital, Erragadda, Hyderabad on 20/08/2024. With major complaints of headache and nausea upper limb monoplegia since six months.

He has a history of 10-15 episodes of GTCS within a span of 10min accompanied by loss of consciousness. The patient was immediately admitted to an allopathic hospital, where on evaluation he was diagnosed with Cerebral Venous Thrombosis with a hemorrhagic venous infarct involving the left parietal region, resulting in right-sided hemiplegia and aphasia, secondary seizures. He was treated with iv antibiotics, antacids, diurectics,antiemitics,anti-epileptics,statins,antipyretics,analgesics,neuro-protective drugs and other supportive management. Regular physiotherapy was done and discharged in hemodynamically stable condition (07/04/24) and improved symptomatically. After discharge, due to weakness of the right upper limb and pain in right shoulder joint, he visited Government Ayurvedic Hospital, Erragadda, for further treatment.

HISTORY OF PAST ILLNESS:

1. **Medical history:** No past h/o DM 2/HTN/Bronchial asthma/Tuberculosis.
2. **Surgical history:** No past surgical history.
3. **Family history:** No relevant family history

PERSONAL HISTORY:

Table 1: Showing Personal history of patient

Parameter	Details
Age / Sex	34 years / Male

Occupation	Car driver
Marital Status	Married
Diet	Mixed diet
Addictions	History of alcohol consumption since 2016
Bowel	Normal
Bladder	Normal

GENERAL EXAMINATION:

Table 2: Showing General examination of patient

Parameter	**Findings**
Consciousness	Conscious, coherent
Built	Medium
Pallor	Absent
Pulse Rate	64 / minute
Respiratory Rate	18 / minute
Blood Pressure	110/70 mmHg
Temperature	Afebrile
Heart Sounds	s1 s2 +

ASHTAVIDHA PARIKSHA:

Table 3: Showing Ashtavidha Pariksha

Nadi : kapha vata	Shabda : prakruta
Mutra : Pale yellow, no burning micturition	Sparsha : anushna sheeta
Mala : Prakruta	Druk : prakruta
Jihwa : nirama	Akriti : krusha

DASHAVIDHA PARIKSHA:

Table 4: Showing Dashavidha pariksha

Prakriti: Vata Pittaja	Ahara shakti-Avara
Satmya- vyamishra	Samhanana -Avara
Vikruti:Dosha- vata pradana tridosha Dushya-rakta mamsa meda snayu sira	Vyayama shakti-Madhyama
Satva-Avara	Pramana-Avara
Sara-Avara	Vaya-Madhyama

SYSTEMIC EXAMINATION:

- **Central Nervous System**
  - Conscious, Coherent
  - Cranial nerves: Intact
  - Speech: Normal
  - Muscle power:

- Right upper limb – **1/5**
- Right lower limb – **5/5**
  - Muscle tone: Rigidity present in right upper limb
  - Muscle fasciculations: Myoclonic jerks noted
  - Sensory system: Normal
  - Reflexes:
- deep reflexes: Biceps and triceps reflexes diminished in right upper limb
- Superficial reflexes: Normal
  - Babinski sign: Negative
- **Locomotor System**
  - Gait: Normal
  - Loss of extension and flexion at right wrist
  - Loss of flexion in right hand fingers
  - Loss of forearm supination
  - Loss of flexion in right shoulder
- **Cardiovascular System**
  - Heart sounds: **S1 and S2 present**
  - No added sounds
- **Respiratory System**
  - Bilateral air entry present
  - Bronchovesicular breath sounds
  - No wheeze
- **Gastrointestinal System**
  - Abdomen soft and non-tender
  - No organomegaly
  - Bowel sounds present

INVESTIGATIONS:

Blood Investigations:

Hb **:** 13.4 gm%, Total RBC count: 4.4 million/cu.mm, Total WBC count: 15,200 cells/cu.mm, Platelet count: 1.4 5lakhs/cu.mm, Neutrophils 86%, Eosinophils 03%, Lymphocytes 5%, Monocytes 6%

KFT: -urea-18mg/dl, Creatinine-1.1mg/dl, 140 mmol/L-Sodium, 3.7 mmol-Potassium.

Total protein-7.0 g/dl, Albumin-3.9, Total Bilirubin-1.0 mg/dl, Conjugated Bilirubin-0.3, Unconjugated Bilirubin-1.3, ALP level - 111 IU/L is reported in LFT patient results. In peripheral smear RBCs-Normocytic Normochromic, Platelets-Decreased on smear, ESR - 10 mm, Lipid profile - CHOL/HDL 7.42, Total Cholesterol - 138 seen

Other investigations:

2D Echo (25/03/2024)

- No RWMA
- Good LV/RV function
- EF - 60%

EEG: EEG record shows transients of shock waves with occasional spikes.

CT BRAIN (24/03/2024): S/o. Large hypodense area showing multiple patchy hyperdense hemorrhagic foci within noted in left high parietal region as described, Hyperdense left high parietal superficial cortical veins draining into superior sagittal sinus -? Infarcts with venous hemorrhagic bleeds.
MRI BRAIN WITH MR VENOGRAM: S/o. Large inhomogeneous bleed with oedema and mass effect is seen in left fronto-parietal cortex, Neurologist Irregular area of partial filling defects seen in superior sagittal sinus near Vertex. Blooming is seen on SWI - features could represent partial superior sagittal sinus thrombosis,
CT BRAIN (28/03/2024): S/o. Large hypodense area showing multiple patchy hyperdense hemorrhagic foci within noted in left high parietal region as described, Hyperdense left high parietal superficial cortical veins draining into superior sagittal sinus - Infarct with venous hemorrhagic bleed.
CT BRAIN (06/04/2024): S/o. K/C/O. Venous infarct with hemorrhagic bleed, Large hypodense area noted in left high parietal region as described, Hyper density in the left high parietal superficial cortical veins appears reduced in the present scan, Compared to previous CT Brain dated [02-04-2024], there is no change in the area of hypodensity, hyper density of the hemorrhage foci appears resolved, No significant change in the midline shift.
Ethical consideration: The present case study was conducted in compliance with the Indian Council of Medical Research (ICMR) National Ethical Guidelines for Biomedical and Health Research involving Human participants.
Informed Consent: was obtained from the Patient.

CHIKITSA:

Table 5: Showing internal medications (shamana)

Antah parimarjana chikitsa					
Sl.no	Date of consultation and follow ups	Medication	Dosage	Anupana	Duration
1	20-Aug-24	Dhanvantri vati 1BD	500 mg twice daily after food	normal water	1 month
		brahmi vati	500 mg twice daily after food	normal water	1 month
2		ashwagandha churnam	3 grams twice daily after food	milk	1 month
		avipattikara churna	5 grams twice daily after food	luke warm water	1 month
	01-Sep-24	Brihat vata chintamani ras - 30 tabs + Ashwagandha Churna - 50 gms+dhatu poshaka churnam - 50 gms	5 gms, twice a day after food	luke warm water	1 month

		syrp.Balarishta	20 ml after food	luke warm water	1 month
	27-09-2024 (Discharged)	Trialokya chintamani ras - 30 tab + Kukku tanda twak bhasma - 10 gms + Aswagandha - 100 gms + Dathu poshtika churna - 50 gms	2 tables poons BD after food	luke warm water	1 month
		Yogaraja Guggulu - 500 mg	2 BD after food	normal water	1 month
		Dhanvantri vati 1BD	500 mg twice daily after food	normal water	1 month
		avipattikara churna	5 grams twice daily after food	luke warm water	1 month

SHODANA CHIKITSA:

Table 6: Showing Shodana chikitsa

Bahir parimarjana chikitsa				
Sl.no	Date	Procedure	Ingredients & Quantity	No of Days
1	23-Aug-24	Sarvanga Abhyanga & nadi swedha	Bala Ashwagandha Taila with sufficient quantity	7
2	01-Sep-24	Matra vasti	Bala Aswagandha Taila - 60ml + Pravala pisti - 1 pinch	7
3	07-Sep-24	Shastika Shali pinda sweda (Affected right upper limb)	Shastika Shali - 100 gms+ dasa mula khwatha - 100 gms (250 ml kwata to be prepared) + Go ksheera - 1L + jala - 2L	7
4	17-Sep-24	Sarvanga Abhyanga & nadi swedha	Bala Aswagandha with sufficient quantity	7
5	17-Sep-24	Sirovasthi	Brahmi taila - 250 ml + jyotimati taila - 250 ml + Tila taila	7

			- 1L	

CASE TIMELINE:

Table 7: Showing Timeline of case report

Dates	Events	Treatment
24-03-2024	Sudden onset of weakness of left upper limb and loss of speech	Took allopathy medicine &improved symptomatically
28-03-2024	onset of seizures 2 episodes	Took antiepileptics and reduction in seizures seen
18-07-2024	Weakness in right upper limb and pain in right shoulder joint	Took Physiotherapy and found very less relief
20-08-2024	Presented with weakness and stiffness in right upper limb and right upper shoulder joint, with severe headache and also loss of flexion in fingers	Admitted at In-Patient department and shamana chikitsa was initiated
23-08-2024	Mild relief from pain in right shoulder while weakness,stifness and headache still persisted	Sarvanga Abhyanga & nadi swedha procedure was done
01-09-2024	Improvement in appetite, muscle fasculation also relieved	Matra vasti was performed
07-09-2024	Stiffness relived totally, improvement in movement also observed	Shastika Shali pinda sweda was performed
17-09-2024	Improvement in muscle power and tone observed, complete relief from headache	Sirovasthi was performed
24-09-2024	No signs of occurrence of seizures, improved muscle power and strength, hand grip also improved significantly	Discharged and medication was prescribed
15-11-2024 (follow-up)	No signs of relapse	–

RESULTS:

Table 8: Showing Results of clinical features before & after treatment

Sl.no	Clinical Features	Before Treatment	After Treatment
1	NIHSS	6	2
2	Headache	Severe	Absent
3	Muscle fasciculations	Mild	Absent
4	Reflexes	Hypo reflexive	Normal
5	Muscle Tone	Rigidity	Normal
6	Muscle Power	Grade-1	Grade-4
7	Stiffness	Present	Absent

8	MCP, PIP, DIP flexion	Absent	Present
9	MCP, PIP, DIP extension	Absent	Present
10	Pain scoring in Shoulder Abduction (VASI score)	7	2
11	Lateral rotation of wrist joint	Absent	Present

DISCUSSION:

In Ayurveda, neurological disorders presenting with loss of motor functions are described under Vatavyadhi, with Pakshaghata being a principal Nanatmaja Vata disorder. Pakshaghata is characterized by Cheshta-nivritti, Ruja, Stambha and Bala-kshaya affecting one half of the body due to vitiation of Vata localized in the Shiras, Sira and Snayu[6]. In the present case, a 34-year-old male previously diagnosed with cerebral venous sinus thrombosis with hemorrhagic infarct in the left parietal region presented with right-sided hemiplegia and seizures, confirmed by CT brain and MRI with MR venogram.

Based on Ayurvedic evaluation, the condition was correlated with Vama Pakshaghata caused by Vata-pradhana Tridosha vitiation, involving Rakta, Rasa, Sira, Snayu and Mastishka-gata Shiras[8]. This was evidenced by motor weakness, spasticity of the right upper limb, loss of grip, stiffness, pain, headache and dizziness. The chronicity of six months, hemorrhagic infarction, seizures, disturbed sleep, loss of appetite and reduced strength indicated Asthi-Majja gata and Sira-gata Vata, with Srotodushti in the form of Sanga[7].

Etiological factors such as intake of asatmya ahara (curd, alcohol, ruksha-lavana ahara), excessive travelling, sleeplessness, fasting, heavy physical exertion, along with shoka and chinta, led to aggravation of Vata and Rakta, causing Srotorodha and impaired cerebral circulation. This pathogenesis closely resembles Siragata Vata, wherein vitiated Vata lodges in vascular channels producing Shosha, Spandana, Shoola, Suptata and loss of pulsation, ultimately manifesting as Pakshaghata[8].

Considering the chronic stage, hemorrhagic background, and Krichrasadhya nature of the disease, Shamana chikitsa along with Bahya and Panchakarma-based Upakramas[9] were planned, avoiding aggressive Shodhana initially. The line of management was aimed at Vata shamana, Vata anulomana, Srotoshodhana, Brimhana, Balya and Rasayana[10].

Internal medications like Dhanvantari Vati[11], Brahmi Vati[11], Ashwagandha and Brihat Vata Chintamani Rasa[13] were administered to pacify Vata, nourish Dhatus, improve neuromuscular coordination, and enhance cognitive and motor recovery. Dhanvantari Vati is well indicated in Vatavyadhi due to its Vata-Kapha hara and Srotoshodhana properties. Brahmi Vati acts as Medhya and Vata-shamaka, supporting neuronal regeneration and seizure control. Ashwagandha, with its Balya, Brimhana and Rasayana actions, aids in muscle strength improvement and recovery from Dhatu kshaya. Dhatu Poshaka Churna contains herbs like ashwangandha, Shatavari, Vidari Kand, Amlaki and Guduchi which are used to improve muscle strength and weight gain.

Avipattikara Churna[12] was used to maintain Agni and prevent Ama formation, which is essential in chronic Vatavyadhi to facilitate proper absorption and Dhatu poshana. Yogaraja Guggulu[13], administered during the later phase, contributed to Vata-Kapha shamana, anti-inflammatory action, and improved joint and neuromuscular mobility.

Among Panchakarma procedures, Sarvanga Abhyanga with Bala-Ashwagandha Taila followed by Nadi Sweda was employed to alleviate Stambha, improve circulation, and reduce spasticity. Matra Basti[5] with

Bala-Ashwagandha Taila played a pivotal role in Vata anulomana and Pakvashaya-gata Vata chikitsa, as Basti is considered the prime treatment for Vata disorders. Shashtika Shali Pinda Sweda[15] provided Brimhana and strengthened weakened muscles, improving tone and functional recovery. Shirovasthi with Tila Taila[16], Brahmi Taila and Jyotishmati Taila was administered to act directly on Mastishka gata Vata, enhancing neurological functions, reducing spasticity, and stabilizing Manas and Indriyas. External application of Karpura Taila helped relieve localized pain and stiffness of the shoulder joint.

CONCLUSION:

This case report demonstrates that Ayurvedic management incorporating Shamana Chikitsa along with selected Panchakarma interventions can be effective in improving neurological deficits in Pakshaghata secondary to cerebral venous sinus thrombosis. The favorable outcome may be attributed to a holistic, individualized treatment approach, integrating Vata-shamana, Brimhana, Balya and Rasayana therapies aimed at addressing the underlying Dosha-Dushya involvement and promoting neuromuscular recovery. The combined use of internal medications and external therapies facilitated functional improvement, reduction in spasticity and enhanced quality of life.

The objective improvement in NIHSS score from 6 to 2 indicates significant neurological recovery and supports the potential role of Ayurveda as a complementary modality in post-stroke rehabilitation. However, as this is a single case report, larger clinical studies and controlled trials are warranted to validate these findings and establish the efficacy and reproducibility of Ayurvedic interventions in cerebrovascular disorders.

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