Case Study

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MANAGEMENT OF CEREBROVASCULAR ACCIDENT THROUGH PANCHAKARMA THERAPY: A CASE STUDY

Aishwarya Anil Jadhav [1]*, Uday Keshavrao Neralkar [2], Jayashri Shrikant Deshmukh [3]

[1] PG Scholar, Department of Panchakarma, CSMSS Ayurved Mahavidyalaya and Rugnalaya, Kanchanwadi, Chhatrapati Sambhajinagar, Maharashtra, India

[2] Professor & HOD, Department of Panchakarma, CSMSS Ayurved Mahavidyalaya and Rugnalaya, Kanchanwadi, Chhatrapati Sambhajinagar, Maharashtra, India

[3] Professor & HOD, Department of Prasuti Tantra & Streeroga, CSMSS Ayurved Mahavidyalaya and Rugnalaya, Kanchanwadi, Chhatrapati Sambhajinagar, Maharashtra, India

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***Corresponding author**
E-mail: aish.j88@gmail.com

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ABSTRACT

Cerebrovascular accident (CVA), the third most common cause of death in developing countries, is the term used to describe episodes of focal brain dysfunction due to focal ischemia or haemorrhage. Acute stroke is characterized most commonly by hemiplegia with or without signs of focal higher cerebral dysfunction that has posed a great problem as far as its management is concerned. Ayurveda can help in such conditions. CVA is quite clearly defined along with its symptoms, prognosis and management in Ayurveda in the context of Pakshaghata as a Vatavyadhi, affecting Madhyama Rogamarga, in which Sira (vascular structures) and Snayu (tendons and ligaments) are mainly affected. A 40-year-old male patient diagnosed with non-hemorrhagic infarct presented with left-side hemiplegia and diplopia was admitted to IPD. Panchakarma procedures, including Snehana, Swedana, Shirodhara, Nasya and Basti, were adopted along with other internal medicines. Assessments were done before and after treatment using the National Institute of Health Stroke Scale (NIH-SS). At the end of the treatment, there was considerable improvement in the subjective and objective clinical features. The observations reveal that Panchakarma procedures can play a vital role in managing conditions like Cerebrovascular accidents by combating general debility with extraocular muscle weakness. The recovery was promising and worth detailing.

Keywords: Cerebrovascular accident (CVA), Pakshaghata, Vatavyadhi, Stroke, Integrative Neurology, Panchakarma.

INTRODUCTION

Cerebrovascular accident or Stroke is a condition resulting in the sudden onset of weakness, numbness, paralysis, slurred speech, problems with vision and other manifestations as a result of a sudden interruption of blood flow or from a haemorrhage in a specific area of the brain resulting in neurological deficit. The ischemic area determines the type of focal deficit observed in the affected person. The two major types of stroke are ischemic and haemorrhagic strokes[1].

Stroke can be correlated with Pakshaghata's condition in Ayurveda, which results from Vata prakopa[2]. It affects sira's (vascular structures) and snayu's (tendons and ligaments) of one half of the body and face, the cause being dhatukshaya or avarana, i.e., any obstruction[3]. It is a condition affecting madhyama roga marga[4] and yapya[5] types of disease. Cardinal features are sandhi bandha vimokshana (subluxation of joints or hypotonia), akarmana (motor disability) and vichetana (sensory disability)[6].

The treatment principle explained for Pakshagata in classics are snehana (internal and external oleation), sweda, shodhana including Virechana (purgation), Basti, Nasya, Moordhni taila followed by Rasayana. The psychological issues must be addressed with selected satvavajaya protocol as per the condition in the initial management stages, as per Sushruta[7].

Table 1: Prevalence of stroke according to the 2023 National Stroke Registry Programme (NSRP)[8]

Region	Prevalence
Rural areas	84–262 per 100,000
Urban areas	334–424 per 100,000

In 2023, India has an estimated 185,000 strokes per year, about one stroke every 40 seconds. This makes stroke the second leading cause of death in India, with one death every four minutes. The Global Burden of Diseases (GBD) also states that India has the highest burden of stroke, with 68.6% of strokes, 70.9% of stroke deaths, and 77.7% of disability-adjusted life years (DALYs) lost. The chance of stroke occurring at age 55 and above is 1 in 5 for women and 1 in 6 for men[9].

MATERIALS AND METHODS

Case Report: A 40-year-old male patient with complete loss of strength in the left side of the body, impaired left eye abduction, and diplopia since 3.5 months was brought to the OPD on 31.01.2024. Initial history revealed that the patient developed sudden weakness in the left side of the body 3.5 months back and was under conventional medical supervision for a week.

MRI of the brain was done on 07.10.2023 and revealed acute non-haemorrhagic infract, right side pons and right medullar aspect chronic small vessel ischemic changes (Fazeka's Grade 1), non-haemorrhagic infarct in the posterior limb of left internal capsule.

Ayurveda Perspective: The patient presented with lakshana like shaitya (cold to touch), guruta (heaviness) along with chestahani (impaired motor activity in the left side), dwandva drushti (diplopia) in the left eye based on which Avaranjanya vaam Pakshaghata was diagnosed. The symptoms resemble acute Cerebrovascular accident. The prognosis of this manifestation is kruchra sadhya (challenging to cure). As per treatment principles, Panchakarma procedures and internal medicines were planned.

Hetu (Causative Factors)

Aahar hetu: Tea (5-6 cups/day), murmura (puffed rice), poha (flattened rice), paryushit anna (steal meal), madyapana (alcohol intake), akalbhojanam (untimely meals), katu rasatmak aahar (spicy food).
Vihar hetu: Avyayam (lack of exercise), vegadharan (suppression of natural urges), yanayan (travelling).
Manas hetu: Chinta (psychological distress), overthinking.

Past History
K/C/O Hypertension, Diabetes mellitus.
The patient was on Telmisartan 40 mg, Metformin 500 SR and a combination of Aspirin 75 mg + Clopidogrel 75 mg + Atorvastatin 20 mg.

General Examination
BP - 120/90 mmHg
PR - 80 bpm
RR – 20 times/min
Height - 158 cm
Weight - 65 kg

Ashta Sthana Pariksha
Nadi – 78 bpm
Mala - Vibandha (constipation)
Mutra - 3-4/1-2 times D/N
Jihva - Alipta
Shabda - Prakrutha
Sparsha - Prakrutha
Drik - Dwandwa drushti (diplopia)
Akriti - Madhyama

CNS Examination
Higher Mental Function
Consciousness - Conscious
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 except for cranial nerve number 6- abducens nerve - monocular horizontal diplopia when looking to the side of the paretic eye. The left eye is slightly adducted when the patient looks straight ahead. The eye abducts sluggishly, and even when abduction is maximal, the lateral sclera was exposed.

Sensory System Examination - Intact.

Motor System Examination
Tropical changes - No pressure sores.
Atrophy/hypertrophy - Absent.
Fasciculation and irritability - Absent.
Contraction and Contracture - Absent.
Involuntary movements - Absent.

Table 2: Assessment of Muscle Power Before Treatment

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

Table 3: Assessment of Muscle Tone Before Treatment

Left limb	Clasp knife rigidity
Right limb	Normotonic

Table 4: Assessment of Deep 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

Table 5: Assessment for Co-ordination

Test	Result
Finger nose test	Not possible in left-hand
Knee heal test	Not possible in the left leg
Romberg's Test	Positive
Gait	Circumduction gait

Clonus - Absent.

MANAGEMENT

Table 7: Treatment regimen

Regime	Date	Procedure /drug	Duration/dose
1.	31.01.2024 to 06.02.2024	Snehana (massage) with Til taila	35 minutes
		Swedana (sudation therapy)	20 minutes
		Tab. Ekangaveer Ras	250 mg - 250 mg Vyan-udana kale (after meals)
		Tab. Mahayogaraj guggul	250 mg - 250 mg Vyan-udana kale (after meals)
		Avipattikar choorna	3 gm at night after food with Lukewarm water
2.	07.02.2024 to 20.02.2024	Snehana with Til taila	35 minutes
		Swedana	20 minutes
		Shirodhara with Chandanbala tailam	35 minutes
		Tab. Ekangveer Ras	250 mg - 250 mg Vyan-udana kale (after meals)
		Tab. Mahayogaraj guggul	250 mg - 250 mg Vyan-udana kale (after meals)
		Avipatikar choorna	3 gm at night after food with Lukewarm water
3.	21.02.2024 to 28.02.2024	Snehana with Til taila	35 minutes
		Swedana	20 minutes
		Shirodhara with Chandanbala tailam.	35 minutes

		Nasya (pratimarsha) with Panchendriya Vardhan tail	Nasya two bindu (1ml/each nostril) at morning after snehan swedana.
		Tab. Ekangveer Ras	250 mg - 250 mg Vyan-udana kale (after meals)
		Tab. Mahayogaraj guggul	250 mg - 250 mg Vyan-udana kale (after meals)
		Avipatikar choorna	3 gm at night after food with Lukewarm water
4.	29.02.2024 to 07.03.2024	Snehana with Til taila	35 minutes
		Swedana	20 minutes
		Tiktasheerbasti	Yogabasti Krama
		Tab. Rasnadi guggul	500 mg - 500 mg Vyan-udana kale (after meals)
		Tab. Sanshamani vati	250 mg - 250 mg Vyan-udana kale (after meals)
5.	08.03.2024 to 15.03.2024	Snehana with Til taila	35 minutes
		Swedana	20 minutes
		Shirodhara with Dashmool kwath	35 minutes
		Tab. Sanshamani vati	250 mg - 250 mg Vyan-udana kale (after meals)

RESULT

Table 6: NIH Stroke Scale Assessment [10]

Sr.No.	NIH scale	Range of score	Before treatment	After treatment
1a	Level of consciousness	0 to 3	0	0
1b	LOC questions	0 to 2	1	0
1c	LOC command	0 to 2	1	0
2	Best gaze	0 to 2	1	0
3	Visual	0 to 3	0	0
4	Facial palsy	0 to 3	0	0
5	Motor arm	0 to 4	3	1
6	Motor leg	0 to 4	3	1
7	Limb ataxia	0 to 2	2	0
8	Sensory	0 to 2	1	0
9	Best language	0 to 3	1	0
10	Dysarthria	0 to 2	1	0
11	Extinction & inattention	0 to 2	1	0
	Total	42	15	2

DISCUSSION

In an ischemic stroke, there will be a reduction in blood supply to any part of brain tissue, which leads to dysfunction of that part of brain tissue. About 30-40% of Ischemic Strokes are termed as cryptogenic (i.e. of unknown origin). Several classification systems for acute ischemic stroke, the OCSP, i.e., Oxford Community Stroke Project classification (also called the Bamford or Oxford classification) relies generally on the initial symptoms of stroke, based on the extent of these stroke symptoms, stroke episode is classified as, total anterior circulation infarct (TACI), partial anterior circulation infarct (PACI), lacunar anterior circulation infarct (LACI) or posterior circulation infarct (POCI) [11]. These four types of infarcts predict the extent of the stroke, the area of the brain affected, the underlying cause and its prognosis. Due to severe disability and dependency, Pakshaghata can be considered as one of the major diseases[12-14]. Our Acharyas have given the line of treatment for Pakshaghata. In Sushruta Samhita, Acharya has given the treatment protocol in the sequence of Snehana followed by Swedan, Mrudu Samshodhana and Basti Chikitsa[15]. In Charaka Samhita, Acharya has given protocols like Sweda, Sneha, and Virechana[16]. However, in the present study, the treatment protocol was decided based on the condition of the roga and rogi.

The possible roles of different Panchakarma therapies used herein are discussed below:

Shirodhara: This therapy involves pouring medicated oil on the forehead, calming the nervous system and promoting relaxation. In stroke patients, Shirodhara helps:

- Reduce stress and anxiety
- Improve sleep quality
- Enhance cognitive function
- Promote neuroplasticity

Pratimarsha Nasya: This nasal medication therapy targets the brain and nervous system, offering benefits such as:

- Improved cognitive function and memory
- Enhanced neurotransmitter balance
- Reduced inflammation and oxidative stress
- Promoted neuronal regeneration

Tiktaksheer Basti: This medicated enema therapy targets the nervous system and brain, providing benefits like:

- Reduced inflammation and oxidative stress
- Improved cognitive function and memory
- Enhanced neurotransmitter balance
- Promoted neuronal regeneration and repair

CONCLUSION

Using the treatment principles of Panchakarma, Ayurveda offers rehabilitation therapy for patients with stroke. The line of treatment is to bring back the motor and sensory functions of the brain. Internal medicines boost the blood supply, and natural antioxidants increase the oxygenation to the brain, rejuvenate the brain cells, and decrease cell death. The external therapies and Panchakarma improve the functioning of the peripheral nervous system. The heat modalities in therapy maintain the muscle tone and reduce muscle spasm/ stiffness. Thus, the above-described sets of Panchakarma treatments and shaman oushadhi have shown significant clinical results with speedy recovery in the patient in the present study.

Panchakarma therapies like Shirodhara, Pratimarsha Nasya, and Tiktaksheer Basti offer a holistic approach to stroke rehabilitation. By addressing the physical, mental, and emotional aspects of stroke, these therapies can complement modern medicine and enhance patient outcomes. Further research and

integration of Panchakarma therapies into stroke rehabilitation protocols may offer new hope for patients and caregivers.

DISCLAIMER: The study is carried out as per the International Conference of Harmonization-Good Clinical Practices Guidelines (ICH-GCP) or as per ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants.

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