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Effect of Holistic Ayurvedic Management of Pakshaghata (Hemiplegia): A Case Report

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Abstract:
Pakshaghata, a serious disease caused by the aggravated Vata Dosha with or without the association of vitiated Kapha, Pitta or Raktaindividually or in combinations. Based on the similarities in the clinical presentation and pathogenesis, Pakshaghata is considered equivalent to hemiplegia. It is characterized by loss of motor function in one half of the body, speech impairment, and sensory deficits. The prognosis depends upon the severity of the symptoms, age and strength of the patient, and chronicity of the illness. Early Ayurvedic intervention of Pakshaghata yield better results and improve quality of life.
This case report presents a 42-year-old male patient diagnosed with Dakshina Pakshaghata. The treatment protocol included Ayurvedic interventions like Virechana, Basti, Nasya, Abhyanga, Swedana, and internal medications. The patient showed significant improvement in motor and higher cortical functions, with a 95% improvement in the NIH Stroke Scale Score (NIHSS), demonstrating the efficacy of the logical implementation of Ayurvedic principles and therapeutic modalities in the management of Pakshaghata.

Keywords: Ayurveda, Basti, Nasya, Panchakarma, Pakshaghata, Vatavyadhi

INTRODUCTION:

Pakshaghata (Hemiplegia) is a disease caused by the vitiation of Vata Dosha. It primarily affects the Madhyama Roga Marga (disease manifesting at the vital parts Marma-Asthi-Sandhi)[1]which is characterized by unilateral paralysis of the body, impairment of speech with or without sensory deficits.[2]
The clinical presentation of Pakshaghata, resembles that of hemiplegia and the major cause for hemiplegia is cerebrovascular accident or stroke. Stroke is a leading cause of disability worldwide. In India, the estimated prevalence of stroke ranges from 84 to 262 per 100,000 population in rural areas and 334 to 424 per 100,000 in urban areas. Globally, approximately 15 million people suffer from stroke each year, out of which 5 million die, and another 5 million are left permanently disabled.[3]
Major aetiologies and pathogenesis of Cerebrovascular Accident (CVA) include results from impaired blood flow to the brain, which may be ischemic or haemorrhagicleading to neuronal damage.

Hypertension, atherosclerosis, cardiovascular diseases, diabetes mellitus, hyperlipidaemia, obesity and excess use of smoking and alcohol are the major risk factors for CVA. Hypertension is the most common risk factor, causing endothelial damage and increasing the likelihood of thromboembolism and haemorrhage.[4]

The conventional management protocol for acute CVA includes necessary interventions like hypertension management and thrombolytic therapy.[4,5] However, the motor and sensory disabilities resulting from neuronal damage significantly impact the patient's quality of life.[6] This necessitates constant rehabilitation measures and interventions to reverse or accommodate the functions of damaged brain areas along with regeneration of neurons.[7]This emphasizes the need for integrated management approaches like Ayurveda where treatment aimed to achieve multiplegoals; regeneration of damaged neurons, enhancement of the remaining cortical functions,reduction of disease burden and improvement of the patient's quality of life.

In this case, hypertension played a significant role in the pathogenesis of the patient's condition. Chronic hypertension causes vessel rigidity, endothelial damage, and a higher risk of ischemic infarction due to arterial blockage or haemorrhage due to vessel rupture.[8] The Ayurvedic perspective aligns this with Vata vitiation, leading to vitiation of Siras(blood vessels) andSnayus(connective tissue elements such as tendons, ligaments, nerves etc.).The pathogenesis of Vata Kopainvolves Avarana (occlusion of passage of Vayu) or by Kshaya(deterioration of bodily elements). Srotorodha(obstruction of microchannels) is caused bythe accumulation of vitiatedDoshasthus vitiated the Vata Dosha by obstruction in its normal pathways. This pathology can be best understood by the atherosclerotic changes/ thrombolic occlusion of vessels. On the other hand, Dhatu Kshaya (degeneration of tissues) leads to Rikta Srotas (emptiness of channels) and aggravation in empty channels which causes Kharatva (excessive roughness) which can be understood as the endothelial damage, rigidity of vessels etc. The effective management of Pakshaghatademands a comprehensive understanding of its underlying pathology and the application of treatment that is specifically tailored to the patient's condition, highlighting the importance of a holistic and personalized approach.[9]

This case study explores the effectiveness of an integrated Ayurvedic approach in functionality improvement and enhancing the quality of life in Pakshaghata.

Case Details:

The 42 years old male patient, resident of Ahmedabad, Gujarat was admitted to inpatient department on 05.04.2021. He complained of weakness of the right half of the body, difficulty to sitting or standing without support, inability to walk, memory loss and difficulty speaking for the last fifteen days.

Past History:He was aknown case of Hypertension for 2 years and wasregularly taking antihypertensive medications.There was no history of other relevant past illnesses like Diabetes Mellitus, Hyperthyroidism was present.

Family History: He had a positive family history of hypertension and diabetes mellitus in first degree family members.

Diagnostic assessments:

Physical Examination:

Built of the patient was normal, decubitus- predominantly supine posture; gait- inability to walk; sitting and standing with support only. Physical examination revealed no pallor, icterus, cyanosis and pedal

oedema. He was right-handed. Vitals were stable with a pulse rate of 82/min, blood pressure of 110/90 mmHg, and respiratory rate of 20/min.

Ashtavidha and Dasavidha Pariksha: Nadi was Vata-Pitta dominant with impaired Shabda. His Sparsa was Sita and tongue was clear. Mutra(urine) was clear but the stool was hard in consistency. Additionally, the patient had bladder incontinence. He weighed 54kg. The patient wasclassified in Madhyama Vayahcategory with Vata Pitta Prakrutiandhad Madhyama Samhanana, Sarata and Satva. His diet was predominantly includedAmla, Lavana and KatuRasa (Rasa Satmya). During the initial evaluation, the patient had very poor Abhyavaharanashakti and Jarana Shakti. Vyayamashakti was also poor and he reported disturbances in sleep also.

Systemic Examination:
Respiratory system-Air entry bilaterally equal,no added sound was noted.
Cardio-vascular System- Heart sounds was regular with normal rhythm.
No abnormal findings were observed in the examination of Gastrointestinal system.

Neurological System examination: The findings of the neurological system examination at the day of admission is listed in the table 1.

S.NO.	Examination		Findings
1.	Higher mental Functions	Consciousness	$E_2V_3M_4$ (GCS score- 9/15)
		Orientation	Disoriented to time, place and person
		Memory	Impaired Recent and Past memory
		Speech	Impaired Comprehension, fluency, repetition, Global aphasia
		Language	Affected
2.	Cranial Nerve Examination	Affected nerves- 1, 4, 7, 9, 10, 11, 12.	Anosmia was present in both sides, Visual acuity, field and colour vision were normal, difficulty in right eye movement to look downwards and towards nose, absence of nasolabial fold in right side of face, deviation of lips towards left during speech and smiling, whistling, blowing air was affected in the right side, hearing was intact, difficulty in swallowing, absence of gag reflex, drooping of the right shoulder, right sided weakness during shrugging of shoulder, inability to rotate head were present. The tongue was deviated towards left side and flaccid.
3.	Motor system examination	Bulk	No signs of wasting
		Power	RUL and RLL-2/5, LUL and LLL-4/5
		Tone	RUL, RLL- Hypertonic, other muscles- normotonic

4.	Deep Tendon Reflexes	Biceps, Triceps, Knee jerk, Ankle jerk	Exaggerated in Right side
5.	Plantar reflex		Normal on both sides.

Diagnostic Investigations:
MRI Report: (23.03.21)- multifocal acute infarcts are noted in left thalamus, left middle cerebral peduncle, left half of splenium of corpus callosum and left tempero-occipital lobe region.
Blood Investigations: CBC, LFT, LIPID PROFILE, RFT- Shows Normal study
Radiology: Chest X-Ray- Normal

Diagnosis:
Magnetic Resonance Imaging suggestive of hemiplegia due to multiple infarcts. Based on clinical examination, the patient was diagnosed with Dakshina Pakshaghata. Considering the Santarpanottha Nidanas(nourishing) like sedentary habits, excess consumption of Snigdha, Guru, Madhura ahara Rasaand lack of physical exertion, patient's age, strength etc. Avarana was the pathology of the disease condition.
Assessment of the outcome measures: Symptomatic assessment was done before and after treatment. National Institute of Health Stroke Scale (NIHSS).[10]

Treatment:
After analysing the clinical features, past history, etiological factors, pathophysiology and strength of the patient, treatment was planned. The protocol included Shodhana, Shamana and Rasayana regimens aimed to cleanse channels, remove Avarana, alleviate Vata Dosha, strengthen the Dhatus and to improve cognitive and motor functions. The inpatient treatment, as outlined in Table 2, was administered over a period of 76 days. Patient was under regular follow-ups after discharge.

Table 2: Details of the Treatment administered to the patient:

NO.	Treatment	Description	Posology	Duration
1.	Shodhana Basti	A. Triphala Guduchi Kwatha(240ml) + Erandasneha(80ml) + Madhu(60ml) + Saindhava(15g) + Satapushpa kalka(25g)	Empty stomach, 11.30am	6/4/21- 8/4/21
2.	Virechana	B. Deepana-Pachana with Chitrakadi vati	2 tablets BD, before food	9/4/21-11/4/21
3.		C. Snehapana with Rasona taila	Initial dose 30ml, increased gradually every day upto 210ml	12/4/21-18/4/21
4.		D. Sarvanga Abhyangawith Dashamula taila+ Nadi Swedana with Dashamula Kwatha	Once in a day	18/4/21-21/4/21

5.		E. VirechanawithErandataila- 20ml+ Triphala Kwatha-100ml	Morning empty stomach, at 10.00 am	21/4/21
6.	Samsarjana krama (Peyadi)			21/4/21 evening to 27/4/21
7.	Karma Basti	F. Anuvasana with Ksheerabala Taila	120ml	28/4/21- 27/5/21
		H. Dashamuldi Niruha	Dashamula Kwatha- 300 ml Madhu- 20gm Saindhava-5g Satapushpa kalka- 20g Madanaphala churna- 5g Ksheerabala taila- 80 ml	
8.	Nasya	1. Ksheerabala (101) Avarti taila	10 drops each nostril	30/5/21- 19/6/21
9.	Oral medications	2. Yogaraja Guggulu	2 Tablets BD, before food	28/4/21- 20/6/21
		3. Lashunadi vati	2 tablets BD, after food	
		4. Dashamula Kashaya	40ml, BD, before food	
		5. Ashwagandha Churna- 1g+Rasayana Churna (1g)+Yashtimadhu Churna (1g)+ Godanti Bhasma (500mg)	Half teaspoon, BD, with milk, after food	20/5/21- 30/7/21
		6. Jyotishmati taila	5 drops BD, before food with milk	

Observations and Results:

Agni deepti(enhanced digestion and metabolism) and Laghutva(lightness) were observed in patient after Shodhana basti (purificatory enema). Samyak snigdhaLakshanas(signs of proper oleation) were seen on the seventh day of the Snehapana (internal oleation). A total 21 Vegas(urges) were obtained in Virechana(purgation) which was considered as Madhyama shudhi. (purification in moderate quantity). Also, the patients reported Laghutva, reduced heaviness in the body along with tiredness. Patient was advised with Peyadikrama after Virechana and after that, good appetite, Prasannata, lightness etc. were observed in the patient. The changes in NIHSS score before and after treatment is shown in the table 3.

NIH score was reduced significantly from 23 (indicating severe stroke) to after treatment. He got complete relief of the bladder incontinence also. His appetite, sleep and mood were improved and relieved constipation. Patient could able to walk and climbing stairs without support.

Table 3. NIH Stroke Scale of the patient before and after Treatment

Response	Score at baseline	Score at the time of discharge	Score after one month of treatment
Level of consciousness	1	0	0
Response level of consciousness questions	2	0	0
Response level of consciousness commands	2	0	0
Pupillary response	0	0	0
Gaze	1	0	0
Visual fields	0	0	0
Dysarthria	2	0	0
Motor arm (Left)	1	0	0
Motor arm (right)	3	1	0
Motor leg (right)	3	2	1
Motor leg (left)	1	1	0
Ataxia	0	0	0
Sensory	1	0	0
Language	3	1	0
Facial palsy	2	1	0
Extinction/inattention	1	0	0
Total Score	**23**	**6**	**1**

Discussion:

Pakshaghata is a complex disease affecting sthana of Prana(vital force), is fatal or may cause severe functional disabilities.

Modern treatment for stroke primarily focuses on thrombolysis, anticoagulation, and physiotherapy, but there are limitations in the complete neurological recovery. In contrast, Ayurveda offers a holistic approach with Panchakarma, herbal medications, and Rasayana therapy, which aid in nerve regeneration and restoration of the cortical function restoration.

For successful treatment, a thorough analysis ofthe disease and the patient is essential. The Nidana, Purvarupa, Rupa, Lakshana, SampraptiandUpasaya of disease is required to assess the involvement of Dosha and Dushyas, assessment of severity, disease condition, as well as prognosis of the disease. The examination of the patient factors like physical and mental strength, age and dietary habits etc. will also impact the success of the treatment. In the present case, young age of the patient with strong physical and Satva(mental strength), and recent onset of the disease and logical administration of medications according to the disease condition and pathogenesis majorly contribute for the successful result.

Administration of the medicines and Panchakarma therapyas per the patient's condition played a crucial role in this case by bringing the equilibrium of Doshas and Dhatus and enhancement of the functions of the nervous system. Yogaraja Guggulu[11] and Lashunadi Vati[12] helped to digest Ama, ignites digestive power, alleviate Vata and Kapha doshas. Lashunadi Vati also helped in clearing the channels because of its Ushna, Tikshna and Vatakaphahara properties. Lashuna an ingredient of Lashunadi vati, is the best remedy in the treatment of Avarana janya Vata vyadhi.[13]Dashamula Kwathaalleviate Vata and Kapha.

Jyotishmati Tailahas Teekshna, Ushna and Sukshma properties and thus it will reach deeper Dhatus. Also, it will remove the avarana of ManovahaSrotas and facilitate the Buddhi-Indriya and Mana prasada.[14] It also acts as a Medhya Rasayana which improve cognitive and motor functions. Being a SnehaKalpna, this medication can cross the blood brain barrier also aided its replenishing action.

Shodhana basti was done initially as the patient had signs of Amaand Agnimandya. In that condition, body fails to metabolise medicines given orally because of low digestive power. Thus, consideringAmavsthaandDoshavaranapatha, Sodhanabasti was administered initially which helped Agni deepana, DoshaShodhanaespecially from Pakwasaya, removes Srotorodhaand Avaranaand thus allow AnulomaGati of Vata. Virechanawas done to remove vitiated Pitta and Kapha seated in Amashaya. Virechana also aided Vatanulomana.

Samsarjana krama was given to the patient after Virechana for gradual recovery of patients bala and Agni. After assured proper Rogabala and Agnibala,Karma basti has administered for 30 days which include alternate Niruha and Snehabasti. Basti is considered as the best treatment for Vata rogas. It pacifies Vata as well as strengthen the Dhatus.

Nasya therapy advocated using Ksheerabala (101) avarti taila,[15] which is having Brimhana and Vata pacifying property. This taila is especially indicated in Vatavyadhi associated with loss of cognitive and sensory impairment. The previous studies have proven the neuro-regenerative potency of Bala(Sidacordifolia Linn.).[16] Thus, it helped to revitalize neurons and reviving higher mental functions, speech and motor functions.

The comprehensive therapy provided significant symptomatic relief, enhancing motor function and improving speech and memory. NIH Score has improved by 96%. This study thus provides evidenced that early intervention with Ayurveda can thus offer best outcomes compared to conventional treatments alone.

Conclusion:

Pakshaghata is a complex neurological disorder requiring intensive treatment. The integration of Shodhana, ShamanaandRasayana therapies proved highly effective in restoring motor, cognitive, and speech functions. Ayurveda's holistic approach, emphasizing Dosha pacification and nerve regeneration, can be a valuable alternative or adjunct to conventional stroke management.Extensive research has to be done to generalize the findings of this case study.

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