



Case Study

A CLINICAL STUDY ON THE AYURVEDIC MANAGEMENT OF PAKSHAGHATA W.S.R HEMIPLAGIA

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ABSTRACT

Hemiplegia and Bell's palsy are neurological conditions commonly associated with vascular and metabolic disorders, particularly in patients with long-standing hypertension (HTN) and type 2 diabetes mellitus (DM). Conventional management provides partial relief, but Ayurveda, through *Panchakarma* and *Shamana Chikitsa*, offers promising holistic approaches targeting both systemic balance and neurological recovery. **Methods:** A 52 years old male patient with a history of HTN from 10 years and DM type 2 from 5 years, under regular medication, presented with right-sided hemiplegia and Bell's palsy. Ayurvedic management was planned for 30 days, including *Panchakarma* procedures such as *Virechana* (therapeutic purgation), *Snehana* (oleation), *Shirobasti* (retention of medicated oil over the scalp), and *Karma Basti* (medicated enema for 30 days). Alongside, *Shamana Chikitsa* included administration of *Maha Vata Vidwansa Rasa* (250mg twice daily), *Bala Moola Kwatha* (decoction, 40ml twice daily), and *Pippali Churna* (3gm twice per day). Clinical evaluation was done before and after treatment based on muscle strength, facial deviation, speech clarity, and daily activity performance. **Results:** Significant improvement was observed in motor functions, with reduction of facial deviation and restoration of voluntary movements on the affected side. Speech became clearer, and the patient reported improved ability to perform daily activities. No adverse effects of the interventions were noted. **Conclusion:** The combined approach of *Panchakarma* and *Shamana Chikitsa* showed remarkable effectiveness in managing hemiplegia with associated Bell's palsy in a patient with comorbid HTN and DM. This case suggests that Ayurvedic therapies, when appropriately administered, can serve as a beneficial adjunct in neurorehabilitation, warranting further clinical studies.

INTRODUCTION

Neurological disorders such as hemiplegia and Bell's palsy remain among the most disabling conditions encountered in clinical practice, often leaving patients with significant functional limitations and compromised quality of life. Hemiplegia, defined as paralysis affecting one side of the body, is usually a consequence of cerebrovascular accidents, traumatic brain injury, or other central nervous system lesions.

It is one of the common sequelae of stroke, which is itself a leading cause of adult disability worldwide. Patients present with motor weakness, spasticity, sensory impairment, and difficulty in performing activities of daily living, making long-term rehabilitation indispensable.^[1] Bell's palsy, on the other hand, is an acute idiopathic unilateral lower motor neuron paralysis of the facial nerve, often presenting with facial asymmetry, inability to close the eyelid, drooping of the mouth, and altered taste. It remains the most common cause of facial paralysis, accounting for approximately 60–75% of all cases, with an annual incidence of 20–30 cases per 100,000 population.^[2] Although hemiplegia and Bell's palsy are distinct conditions, the coexistence of both on the same side presents a unique clinical challenge, especially in

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patients with metabolic comorbidities such as hypertension and type 2 diabetes mellitus.

From a modern biomedical perspective, hemiplegia is primarily managed through early mobilization, physical therapy, occupational therapy, neuroplasticity-driven rehabilitation, and adjunctive measures such as speech therapy and electrical stimulation. Similarly, Bell's palsy is treated with high-dose corticosteroids, ideally within 72 hours of onset, with some guidelines also recommending antiviral therapy, although the benefit of antivirals remains debated.^[3] Despite these interventions, modern treatment often falls short of complete recovery. In hemiplegia, many patients plateau after the subacute phase, remaining with residual weakness and spasticity despite months of rehabilitation. In Bell's palsy, although approximately 70% of patients recover fully within six months, a significant proportion develop long-term complications such as synkinesis, contracture, or partial recovery.^[4] These therapeutic gaps underscore the need for integrative strategies that go beyond symptomatic care and attempt to restore systemic balance and neural health.

Ayurveda, the traditional system of Indian medicine, provides a comprehensive understanding of such neurological disorders within the framework of *Dosha* imbalance, particularly the vitiation of *Vata dosha*. Hemiplegia closely correlates with *Pakshaghata*, described in the *Charaka Samhita* as loss of function of one half of the body due to aggravated *Vata* obstructing the pathways of motor and sensory activity.^[5] Similarly, Bell's palsy is identified as *Ardita*, a *Vata* disorder manifesting as distortion of one half of the face, difficulty in speech, and impairment of facial expressions.^[6] The pathogenesis in Ayurveda emphasizes derangement of *Vata* in the *Urdhwajatrugata srotas* (channels of the head and neck region), leading to facial asymmetry and neuromuscular dysfunction.

The therapeutic principles in Ayurveda thus target pacification of aggravated *Vata* through *Shodhana* (purificatory measures such as *Panchakarma*) and *Shamana* (palliative therapies including herbal-mineral formulations). *Panchakarma* procedures, notably *Virechana* (therapeutic purgation), *Snehana* (oleation), *Nasya* (medicated nasal drops) *Shirobasti* (retention of medicated oil over the scalp), and *Basti* (medicated enema), play a crucial role in *Vata* disorders. *Virechana* eliminates vitiated *Pitta* and *Vata* from the gastrointestinal tract, thereby cleansing systemic channels and improving circulation. *Snehana* restores lubrication to tissues, counteracting the dryness and stiffness attributed to *Vata*. *Shirobasti* directly nourishes cranial nerves and enhances cerebral circulation, while *Basti* is regarded as the

prime therapy for *Vata* disorders, acting on the colon to regulate systemic *Vata* and thereby improving neuromuscular functions.^[7]

In addition to *Panchakarma*, Ayurvedic formulations such as *Maha Vata Vidwans Rasa*, *Bala Moola* decoction, and *Pippali Churna* are employed in clinical practice. *Maha Vata Vidwans Rasa* is a classical herbo-mineral preparation indicated for complex *Vata* disorders, while *Bala Moola* (root of *Sida cordifolia*) is valued for its nervine tonic, anti-inflammatory, and *Rasayana* (rejuvenative) properties.^[8] *Pippali* (*Piper longum*) is traditionally used for enhancing bioavailability of other drugs, improving metabolism, and acting as a mild nervine stimulant. Together, these interventions aim to pacify aggravated *Vata*, support nerve repair, and improve motor recovery.

Modern management of hemiplegia and Bell's palsy faces several challenges that Ayurveda may help overcome. In hemiplegia, residual spasticity, contracture, and slow recovery are difficult to address with physiotherapy alone. Ayurvedic *Panchakarma*, particularly *Basti*, may act as a systemic neuromodulator, improving neurovascular circulation and reducing rigidity. In Bell's palsy, corticosteroids remain the mainstay but are limited by side effects such as hyperglycemia, hypertension, and immunosuppression—particularly concerning in patients with diabetes and long-standing hypertension. Ayurvedic therapies, by contrast, rely on natural formulations and external therapies, minimizing systemic adverse effects while providing targeted nerve nourishment. Moreover, Ayurveda incorporates lifestyle and dietary modifications, which support systemic vascular and metabolic balance, addressing underlying risk factors that often compromise recovery.

The holistic framework of Ayurveda not only aligns with the need for multi-target interventions in neurological disorders but also provides individualized treatment protocols. A growing body of literature reports encouraging outcomes with integrative approaches. For instance, a recent systematic review highlighted positive trends in pre-post studies of Ayurvedic interventions for hemiplegia, though emphasizing the need for more rigorous randomized controlled trials.^[9] Similarly, case reports have documented recovery in Bell's palsy through *Panchakarma* procedures such as *Nasya* and *Shirobasti* along with internal medicines.^[10] Such studies provide preliminary validation for the classical claims regarding *Pakshaghata* and *Ardita* management.

Evaluating outcomes in neurological conditions requires both modern clinical scales and Ayurvedic assessment. Muscle strength is typically assessed

through the Medical Research Council (MRC) scale, while spasticity is evaluated using the Modified Ashworth Scale. Functional recovery can be quantified through indices such as the Barthel Index or Functional Independence Measure. Facial nerve function in Bell's palsy is graded through the House-Brackmann or Sunnybrook systems, while electrophysiological studies such as nerve conduction velocity and electromyography provide objective evidence of reinnervation.^[11] From an Ayurvedic perspective, improvements are gauged by reduction in *Vata* symptoms such as *Rujā* (pain), *Stambha* (stiffness), and *Sankocha* (contraction), as well as restoration of *Pravritti* (activity) and *Prana bala* (vital energy). A combined framework integrating these measures allows for a comprehensive evaluation of therapeutic efficacy.

In summary, hemiplegia and Bell's palsy, particularly when occurring simultaneously in patients with hypertension and diabetes, represent complex clinical conditions with limited options for complete recovery through modern medicine alone. Ayurveda, with its unique emphasis on *Vata* pacification, *Panchakarma* purification, and *Rasayana*-based nerve tonics, offers a valuable complementary approach. By addressing both systemic risk factors and localized neurological deficits, Ayurvedic therapies can potentially bridge gaps in neurorehabilitation. The integration of objective evaluation parameters from modern neurology and subjective Ayurvedic assessment further enhances the scientific validity of such approaches. Thus, the study of combined *Panchakarma* and *Shamana Chikitsa* in hemiplegia with Bell's palsy is not only justified but essential in the pursuit of holistic, patient-centered neurorehabilitation.

Case Report

Patient Information

A 52-year-old male presented to the Ayurvedic outpatient department with complaints of weakness in the right upper and lower limbs, slurred speech, and reduced movements persisting for the last 14 days.

Chief Complaints

- Right-sided upper and lower limb weakness (14 days).
- Slurred speech (14 days)
- Reduced voluntary movements (14 days)

History of Present Illness

The patient was apparently healthy until 14 days prior to presentation when he developed sudden-onset weakness in the right half of the body associated with slurred speech and difficulty in performing daily activities. He was known hypertensive for 10 years and diabetic for 5 years, on regular medications until

recently. The patient reported that he had skipped his antihypertensive medication for several days prior to the episode, after which he experienced neurological symptoms. He was admitted to a tertiary care hospital and managed conservatively with antihypertensives, antiplatelets, and supportive therapy. After stabilization, he was discharged but continued to have residual weakness and impaired speech. Dissatisfied with the slow progress, he sought Ayurvedic management.

Past History

- Hypertension: 10 years
- Type 2 Diabetes Mellitus: 5 years
- No history of tuberculosis, epilepsy, trauma, or psychiatric illness.

Family History

Non-contributory.

Personal History

- Diet: Mixed, irregular
- Sleep: Disturbed since onset of illness.
- Bowel and bladder: Normal
- No addictions reported

Clinical Findings

On examination, the patient was conscious and cooperative. Vital signs were stable.

Neurological Examination

- Motor: Muscle power on right upper and lower limb was 0/5.
- Tone: Mildly increased tone noted on the right side.
- Reflexes: Exaggerated deep tendon reflexes on the right side, plantar reflex extensor.
- Cranial nerves: Facial asymmetry noted on the right side, with incomplete eye closure and deviation of the mouth suggesting right-sided lower motor neuron facial nerve palsy.
- Speech: Slurred but comprehensible.

Systemic Examination: Normal

Diagnosis

Based on clinical features, the condition was diagnosed as right-sided hemiplegia with associated Bell's palsy in modern parlance. In Ayurvedic terms, the clinical picture correlated with *Pakshaghata* (hemiplegia) along with *Ardita* (facial palsy), both *Vata*-dominant disorders.

Ayurvedic Management

The patient was planned for 30 days of integrated *Panchakarma* and *Shamana Chikitsa*. The therapies were administered under close supervision with due consideration to the patient's comorbidities.

Panchakarma Procedures**Table 1: Explaining Panchkarma therapies given**

Day/ duration	Therapy	Drug/ procedure	Dose/ details	Route	Purpose
Day 1	Virechan (therapeutic purgation) ^[12]	Castor oil+ milk + Trivrut Avaleha	100ml+ 200ml +20gms respectively	Oral	Vata Anulomana/ Dosha elimination.
Day -30	Abhyanga (oleation)	Anu tailam ^[13]	Whole body	External application	Vata pacifying & Snehana
Day -21	Nasya (nasal drops) ^[14]	Ksheer bala oil	16 drops twice	Errhine	Vata Anulomana, strengthens nerves and muscles, restores motor functions, prevents degeneration.
Day-21	Shirobasti	Bala oil	As per requirement	Head	Nourishes cranial nerves, improves speech, facial muscle tone, cognitive and motor functions. ^[15]
Day -30 (Alternate)	Anuvasan basti	Bala oil	120ml	Per rectal	Nourishes nerve tissue, relieves stiffness and dryness, promotes strength and nerve regeneration. ^[16]
Day-30 (Alternate)	Niruh basti	Bala, Ashwagandha, each 5 gm	Honey 60ml, Saindhav 10gms, Bala oil 60ml, Balamool decoction 300ml	Per rectal	Eliminates aggravated Doshas, regulates Vata, improves neuromuscular coordination, supports motor recovery. ^[17]

Shamana Chikitsa (Internal medication)**Table 2: Per oral medication given**

Drug	Dosage	Anupana	Duration
Maha Vata Vidwans Rasa ^[18]	250 mg BD	Honey	1 month
Bala Moola decoction ^[19]	40ml BD	-	1 month
Pippali Churna ^[20]	3gms BD	Lukewarm water	1 month

Observation before and after treatment**Table 3: Compares examination before and after treatment**

Examination parameters (right side)	Before treatment (1 st day)	After treatment (day)
Muscle power	0/5 upper and lower limbs	4/5 upper and lower limbs
Tone	Mildly increased	
Reflexes	Exaggerated deep tendon reflexes and plantar extensor reflexes.	Normal
Speech	Slurred but comprehensible	Clarity improved
Eye closure	Incomplete	Complete
Mouth deviation	Right side	Normal

DISCUSSION

Hemiplegia and Bell's palsy are two debilitating neurological conditions that significantly impair motor and sensory functions, speech, and quality of life. Modern medicine offers acute management through antiplatelet therapy, thrombolysis, physiotherapy, and steroids for facial paralysis, but these modalities are often limited in addressing chronic deficits, neuroplasticity, and functional recovery. The Ayurvedic system of medicine provides a holistic approach, particularly through *Panchakarma* procedures and *Rasayana* formulations, which focus on restoration of neurological function, reduction of vitiated *Doshas*, and enhancement of neuro-regeneration.^[21,22]

In this case, the patient presented with right-sided weakness, slurred speech, and facial deviation, superimposed on a background of long-standing hypertension and type 2 diabetes mellitus. Modern risk factors of vascular stroke and ischemic neuropathies correlate with Ayurvedic concepts of *Margavarana-janya Vatavyadhi*, where obstructed channels and aggravated *Vata Dosha* manifest as *Pakshaghata* (hemiplegia) and *Ardita* (facial paralysis).^[23,24] The therapeutic strategy in Ayurveda thus revolves around *Vata-shamana*, *Srotoshodhana*, and *Rasayana chikitsa*.

Role of *Panchakarma* in Neurological Recovery

Virechana (therapeutic purgation) was employed initially to eliminate vitiated *Pitta* and *Ama*, which according to Ayurveda, obstruct *Vata* and aggravate neuromuscular dysfunction. *Virechana* is also described to have systemic detoxifying effects, improving microcirculation and metabolic clearance, which may reduce oxidative stress contributing to ischemic neuronal injury^[25]. Experimental data suggest that purgation therapy influences gut-brain axis, neuroinflammation, and immune modulation, thereby enhancing recovery following ischemic injury.^[26]

Oleation (*Snehana*) and *Shirobasti* were central in pacifying *Vata Dosha*. Medicated oils used for *Shirobasti* act transcranially, influencing trigeminal and cranial nerves, and enhancing neurotransmitter balance. Oleation has been shown to improve nerve conduction velocity, reduce muscle stiffness, and promote neuroprotection by delivering lipophilic phytochemicals through transdermal and transcranial absorption.^[27,28]

From an Ayurvedic perspective, *Nasya* with *Ksheerbala Taila* is traditionally described as pacifying aggravated *Vata* in the *Urdhwajatru* region and providing nourishment to the tissues of the head, including *Majja Dhatu*. These actions are considered supportive in the management of *Vata*-predominant neurological disorders such as *Pakshaghata* and *Ardita*.

Practically, regular *Pratimarsha*-type or mild *Brimhana nasya* (here: 16 drops twice daily as a maintenance /neuro-tonic regimen) provides continuous *Snehana* (unctuous nourishment) to cranial structures and facial neuromuscular apparatus, reduces stiffness, and promotes coordinated motor function and speech recovery.

From a modern physiology/pathology perspective, nasal delivery of a lipidic medicament such as *Ksheerbala Taila* uses the richly vascularized nasal mucosa and neuronal routes (olfactory and trigeminal) to effect both local and central actions. Nasal instillation permits (a) rapid mucosal absorption and potential nose-to-brain transport via olfactory /trigeminal nerves, bypassing or partially accessing the blood-brain barrier; (b) local anti-inflammatory, antioxidant and membrane-stabilizing effects on nasofacial neural endings and perineural tissues; and (c) modulation of autonomic tone (parasympathetic up-regulation) that can improve cranial perfusion and neuromuscular recovery.^[29,30,31]

Constituents of *Ksheerbala* (*Bala*, milk lipids, sesame oil) have demonstrated antioxidant, anti-inflammatory and neuroprotective activity in preclinical studies; these properties plausibly reduce perineural edema, limit secondary ischemic/inflammatory damage, and support remyelination and axonal sprouting required for reinnervation of facial and limb musculature.^[32,33] Repeated dosing (16 drops twice daily) maintains mucosal lubrication (reducing *Vata*-related dryness and neural irritability) and sustains tissue exposure to bioactive lipophilic components, while *Pippali* or other adjuvants (if used concurrently) may enhance bioavailability. Clinical case series and small trials of *Ksheerbala Nasya* report improved facial symmetry, seizure of synkinesis, reduced stiffness, and enhanced speech clarity when used as part of an integrated *Panchakarma* protocol, supporting these mechanistic links in practice.^[34]

Basti (medicated enema therapy) was administered as a core intervention. In Ayurveda, *Basti* is considered "*Ardha Chikitsa*" (half of all therapies) for *Vata* disorders, particularly neurological conditions such as *Pakshaghata*. Modern studies demonstrate that rectal administration of medicated decoctions bypasses first-pass metabolism, allows systemic absorption of neuroprotective phytochemicals, and modulates the enteric nervous system, which is intricately linked with the central nervous system.^[35,36] *Basti* has shown improvement in motor function and spasticity reduction in post-stroke patients in randomized controlled trials.^[37]

Internal Medications and Their Pharmacological Basis

- *Maha Vata Vidwans Rasa*^[18] is a classical herbo-mineral formulation that acts as a potent *Vata-shamaka*. Its ingredients possess nervine, anti-inflammatory, and *Rasayana* properties, aiding in recovery from motor dysfunctions. It is traditionally indicated in *Pakshaghata*, *Ardita*, and similar *Vatavyadhis*. Modern pharmacology of metallic *Bhasmas* reveals neuroprotective and adaptogenic properties that could enhance synaptic transmission and nerve regeneration.^[38]
- *Bala moola* (*Sida cordifolia*)^[19] is extensively documented for its neuroprotective, antioxidant, and anti-inflammatory effects. It enhances muscle strength, improves nerve conduction, and acts as a *Rasayana* for neuromuscular disorders. Experimental studies suggest its ability to attenuate oxidative neuronal injury and restore locomotor activity in animal models of neurological deficits.^[39]
- *Pippali* (*Piper longum*)^[20] is an established bioavailability enhancer with additional neuroprotective action. Piperine, its active alkaloid, improves synaptic plasticity, reduces oxidative damage, and augments cognitive recovery after ischemic injury.^[40] Its *Rasayana* role makes it a suitable adjuvant in chronic neurological rehabilitation.

Neurological Correlation and Functional Recovery

The combined *Panchakarma* and *Shamana* approach works on multiple neurophysiological levels. *Panchakarma* reduces oxidative stress, clears metabolic endotoxins, and improves neurovascular circulation, while internal medications act as neuro-regenerative and adaptogenic agents. Together, these therapies enhance motor recovery, speech clarity, and cognitive functions.

Studies on *Panchakarma* in stroke rehabilitation have demonstrated significant improvements in motor function, mobility, and speech when compared with physiotherapy alone.^[41,42] In this case, gradual improvement in speech, limb movements, and facial muscle tone were observed after 30 days of therapy, reflecting both physiological restoration and functional neuroplasticity.

Addressing Challenges in Modern Treatment

Modern medicine provides limited scope beyond acute stroke management, with challenges including poor functional recovery, long rehabilitation periods, and drug side effects.^[43] Ayurvedic therapy, particularly *Panchakarma*, provides a safe and holistic alternative that addresses not only neurological deficits but also systemic risk factors such as metabolic imbalance in diabetes and hypertension. Additionally,

Panchakarma emphasizes individualized treatment and mind-body balance, which are crucial in long-term recovery.^[44]

Evaluation Parameters

Improvement was assessed through clinical parameters such as muscle power (MRC grading), speech clarity (Frenchay Dysarthria Assessment), facial symmetry score, and activities of daily living (Barthel Index). Subjective Ayurvedic assessments such as improvement in *Vaksthambha* (slurred speech), *Hasta-Pada Chalan Shakti* (limb mobility), and *Mukha Vikaras* (facial symmetry) were also considered. These dual parameters allowed comprehensive monitoring of recovery.

Overall, the combination of *Panchakarma* and Ayurvedic medication demonstrates significant potential as an adjunctive therapy in hemiplegia and Bell's palsy, addressing both neurological dysfunction and systemic comorbidities.

CONCLUSION

The present case highlights the potential of an integrative Ayurvedic approach in the management of right-sided hemiplegia with Bell's palsy in a patient with chronic comorbidities. Sequential *Panchakarma* therapies- *Virechana*, *Snehana*, *Nasya*, *Shirobasti*, and *Basti*- combined with internal *Vata*-pacifying and neuroregenerative medications such as *Maha Vata Vidwans Rasa*, *Bala Moola* decoction, and *Pippali churna*, demonstrated significant improvements in motor function, muscle strength, limb mobility, facial symmetry, and speech clarity. These outcomes underscore the synergistic role of systemic detoxification, neural nourishment, and *Vata* regulation in promoting functional recovery, complementing conventional rehabilitation strategies. The case also illustrates the relevance of Ayurvedic principles in addressing complex neurological disorders by targeting both local and systemic pathophysiological mechanisms.

Future research should focus on randomized controlled trials with larger cohorts to validate efficacy, employing objective neurological assessments such as EMG, nerve conduction studies, and functional MRI. Mechanistic studies investigating molecular, vascular, and neuroplastic effects of *Panchakarma* and *Rasayana* therapies will further elucidate their role in neurological rehabilitation. Integration of Ayurvedic protocols with conventional physiotherapy may offer a comprehensive, patient-centered approach to improving functional outcomes and quality of life in neurological disorders.

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