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CASE REPORT

Effect of udwarthana and vamana in rigidity predominant Parkinson's disease-Case report

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Abstract

Parkinson's disease is a progressive neurodegenerative disorder primarily caused by the destruction of dopamine-producing nerve cells in the substantia nigra, a critical area of the brain involved in movement control. The exact etiology remains unclear, though genetic and environmental factors may play a role. Pathologically, the disease is characterized by Lewy bodies i.e. abnormal protein aggregation within neurons. The classical symptoms of PD are resting tremor, rigidity, bradykinesia, and postural instability. It can significantly impact daily activities and overall quality of life in the advanced stage. The symptoms of Parkinson's disease can be discussed in Ayurveda under the clinical spectrum of Vatavyadhi including Kampavata, Sirakampa, Vepathu, and Avarana Vata. The early presentation of symptoms-such as Rigidity(Sthamba), tremors (Kampa), impaired movement (Skhalitha Gati), and reduced activity (Chesta Hani)-can be considered as Kapha aavrtha vyana. So avaranahara and srothosodhana treatments such as Udwarthana and Vamana can be advocated to eliminate excess Kapha and normalise vyana vayu.

A male patient who is aged 65years who was diagnosed with Parkinson's disease presented with resting tremors, rigidity, postural instability, and difficulty in performing daily activities. Following the concept of avarana chikitsa he was administerd udwarthana, kashayadhara, and Vamana. Unified Parkinson's Disease Rating Scale was used for the pre and post evaluation of each treatment. Notable changes were found in all domains of UPDR scale. Thus, this case illustrates that avaranahara treatment modalities such as udwarthana, kashayadhara, and vamana can be effectively used in the management of rigidity-predominant Parkinson's disease.

Introduction

Parkinson's disease is recognized globally, affecting various ethnic groups and socioeconomic classes[1]. Interestingly, there appears to be a higher incidence of the disease in rural areas compared to urban settings, potentially linked to pesticide exposure, though this connection is not consistently supported. Prevalence rates can vary significantly between different countries and regions. The disease typically manifests between the ages of 45 and 70, with the peak

onset occurring in the sixth decade; it is rare before the age of 30. Men are generally more affected by Parkinson's disease than women. Lifestyle factors such as rural living, farming, consumption of well water, pesticide exposure, and heavy metal exposure may increase the risk of developing Parkinson's disease[2]. Parkinson's disease is primarily marked by four key symptoms, which can occur in different combinations: tremor, rigidity, bradykinesia, and postural disturbances[3]. These symptoms contribute to the overall presentation of the disease and can vary in severity and manifestation among individuals. Motor symptoms of Parkinson's disease encompass resting tremors, cogwheel rigidity, bradykinesia, and issues with postural stability. These symptoms can differ in their presentation and usually begin unilaterally, and later progress bilaterally as the condition worsens. Non-motor symptoms include Bradyphrenia, Sleep disturbance like insomnia, nightmares, daytime sleepiness, Personality changes like apathy lack of confidence, fearfulness, anxiety, emotional liability, social withdrawal dependency, and Sensory symptoms like aching, tingling, and muscle soreness. Autonomic and vegetative symptoms include urinary dysfunction, constipation, sexual dysfunction, excessive sweating, and orthostatic hypotension[4].

Parkinson's disease is a neurodegenerative disease that comes under the heading of movement disorders[5]. The clinical presentations of PD, can be understood by incorporating the concepts of vatavyadhi. Charaka Samhita mentions Vepathu in Nanatmaja vata vikara[6], similar to the tremor present in Parkinson's disease. Also, in Kiyantha siraseeya adhyaya[7], Sira Kampa is described as a separate disease entity as like Ardita and Ardhavabedhaka. Susrutha Samhitha described Sthambha and Kampa as a disorder of Snayupradoshaja Vyadhi. And also in the complications of Arditha symptoms like Avyayakta vak (incomprehensible speech), animishaaksha (reduced blinking), and vepana[8] (tremor) are described. From the descriptions of Susrutha we can infer that there is involvement of Siras and snayu in the samprapthi of Kampa vata. In Basavarajeeyam disorders like kampavata, kakavata, bahu kampavata, ekanga vata and ardhanga vata[9] are mentioned. Symptoms of Kampa Vata include kara padatala kampa, deha bramana, dukitha,nidra bangam, and mati ksheenam. Symptoms of bahu kampavata is eka bahu prakampanam, dehinam vikaram, diva ratrou maha dukham[10].Among the three dosha, Vata is responsible for all types of gross and fine movements which is derived from the nirukti of word vata ie *"Va gati gandhanayoh"*[11]. Vata not only moves but also facilitates the movement of Kapha, Pitta, and Mala. In Vatkalakaleeyam Adhyaya of Charaka samhitha sootrasthana explains the functions of Vayu (Vata) as "*tantra yantradhara,"*[12] *ie* responsible for maintaining all bodily activities. According to Sarvanga Sundhara commentary of Ashtanga hridaya "cheshta" is described as *vakhyamano vyapara*[13] the activities of both mind and speech, while Hemadri opines that "cheshta" means motor action (gamanadhi kriya)[14]. Chakrapani's commentary further clarifies that Vata is responsible for both voluntary activities (vachanadini) and higher mental functions (mana preranadyanumeyam[15]). These explanations collectively suggest that Vata's role in motor activities is similar to the functions of the premotor and motor cortex. Vata controls and activates the mind, ensuring the correct functioning of sensory organs and overall bodily coordination. In parkinson's disease there is sluggishness of both voluntary and involuntary activities like sweating, Micturition, Blood pressure and Bowel movement. In later stages of the disease there will be delayed functioning of mental activities like thinking & Memory. Kampa (tremor) sthamba (Rigidity) and chesta hani (Bradykinesia) are the cardinal features of Parkinson's disease. Kampa is present in Vridha Vata Avastha and also in hinapitha with kapha vata vikritha Avastha. Sthamba means stiffness or rigidity produced in the state of hinapitha associated with vata kapha dosha. Difficulty in walking can be taken as skhalitha gati mentioned in kapha avritha vyana. In the early stages of disease, the treatment of kaphavritha vata can be adopted. Kapha avritha vata chikitsa include rooksha upacharaa like Yavanna, Theekshna swedana, Vamana, Virechana and Nirooha [16].

Usually, Parkinson's Disease patients approach to our OPD have been started Levodopa therapy. While taking Levodopa, the motor symptoms of PD cannot be appreciated. Along with this if we are giving ayurveda management, the effect of ayurveda alone can't be obtained.

But, In this specific case, the patient was not under any Levodopa therapy and so that we can get the true efficacy of ayurvedic management alone by assessing the symptomatic relief of the patient.

CASE REPORT

A male patient who is aged 65 years with a known case of hypothyroidism & hypertension came to our OPD. He complaints of pain over the upper and lower back and left shoulder region for 6years, swelling, and pain over both ankle joints for 2 years, tremors over the left upper limb for 1 year, difficulty in lifting his right leg, dragging his right foot & leaning towards right side while walking for 1 year and increased frequency of urination since 1 year. 6 years back the patient gradually experienced aching pain over the back and left shoulder region. He ignored the complaints and continued to do his job. He used to do strenuous jobs like cutting & lifting paperweights in a press. The pain got aggravated before 2 years and he also developed pain and swelling of the foot. He took homeopathic consultation for the complaints. At that time, he started to experience tremors in his left hand but ignored them. In 2023 January, caregivers observed that while walking, the patient started leaning to the right side. Also, the posture becomes stooped. For these complaints, he took

a Homeopathic consultation and was diagnosed with Parkinson's disease. For the last 2monts, his symptoms got aggravated, and began to experience pain and swelling on both feet (rt>lt). He also noticed new symptoms like difficulty turning in bed, difficulty holding things with left hand due to increased tremors, difficulty rising from a sitting or lying position, dragging of right foot while walking, short steps, and slowness of all day-to-day activities. Also, he has difficulty to control bladder and increased frequency and urgency of micturition. Now he is doing all hygiene tasks, taking food, wearing clothes, etc. only with the help of his wife. According to his wife, a staring look, puffiness of face, and low-volume speech developed within the last 2 weeks. He has not been exposed to any known trauma, chemicals, occupational, nutritional, or demographic factors. No pertinent family history, and no prescription drugs use. The patient was cooperative in social situations. He came to our hospital for more symptom management .

Medical History

The patient was not under any modern medications of Parkinson's disease. Clinical diagnosis was done in our OP by assessing the cardinal features like rigidity, tremor, postural instability and bradykinesia.

Reports of hypothyroidism was not available. The patient was under homeopathic medication for hypothyroidism.

Family History

No relevant history.

Psychosocial history

The patient was an active person who was an employee in a press . But due to this disease, he is socially withdrawn.

In general examination BP-110/70mm Hg, HR-74/min PR - 74/min regular rhythm, RR-22/min, Pallor absent, Icterus absent, clubbing and cyanosis absent, Bowel habit became regular after taking medicine from our OPD, Appetite good, Micturition- 4 times/ day, 7 times/ night, Urgency present, Sleep disturbed due to increased micturition.

SYSTEMIC EXAMINATION

Following findings were noted after the systemic examination.

Respiratory system	The chest is bilaterally symmetrical, and no added sound was heard.
Cardiovascular system	S1,S2 heard, no murmurs
Gastrointestinal system	No organomegaly
Urogenital system	Increased urgency and frequency of micturition
Locomotor system	cervical spine-No abnormality detected. thoracic spine -No abnormality detected. Lumbar spine-inspection no abnormality, painful restricted range of motion. Shoulder- inspection no abnormal findings Palpation-G1 tenderness on the left shoulder ROM- possible with pain (Left).

Nervous system: The patient's higher mental functions was intact and he was aware of date, place, and person. Fluency of speech was impacted, speech was repetitious, low volume, and somewhat slurred. Micrographia was also present.

Cranial nerve affected - All cranial nerves normal except for facial sensory examination: Glabellar tap positive.

Reflexes:

Reflex	Right	Left
Biceps	++	++
Triceps	+	+
Supinator	++	++
Knee	++	++
Ankle	+	+
Plantar	Flexor	Flexor

Muscle power:

Muscle	Right	Left
Shoulder Adductor Abductor	 G4 G4	 G4 G4
Elbow Extensor Flexor	 G4 G4	 G4 G4
Wrist Flexor Extensor	 G4 G4	 G4 G4
Hip Flexor	 G4	 G4
Knee Extensor Flexor	 G4 G4	 G4 G4
Foot Dorsi flexor Plantar flexor	 G4 G4	 G4 G4

Muscle tone:

	Right	left
Upper limb	cogwheel rigidity	cogwheel rigidity
Lower limb	Hyper tonic	Hyper tonic

Co-ordination

	Rt	Lt
• Diadochokinesis -	possible	*Slow*
• Finger nose test-	Possible	*slow, tremor*
• Heel-shin test-	slow	slow

- Romberg's test- *Positive*
- Tandem walking- *not possible*
- Finger tapping- slow on the left side
- Hand grip-Intact
- Gait- *Short, shuffling and stooped*

Posture, leaning to the right side

sensory system -intact

Locomotor system examination

cervical spine-No abnormality detected.

thoracic spine -No abnormality detected.

Lumbar spine - inspection no abnormality, painful restricted range of motion.

Shoulder - inspection no abnormal findings

Palpation -G1 tenderness on the left shoulder

ROM- possible with pain (Left).

INVESTIGATIONS

On hematological examination, the TSH level was elevated. Other investigations were normal.

ASSESSMENT SCALE

The MDS-UPDRS was used to evaluate this Parkinson's disease diagnosis. A thorough instrument for assessing the severity and course of Parkinson's disease (PD) is the Unified Parkinson's Disease Rating Scale (UPDRS). It is divided into four sections:

Part I: Non-motor experiences of daily living - Assesses symptoms such as depression, sleep disturbances, and autonomic dysfunction.

Part II: Motor experiences of daily living - Evaluates how motor symptoms (e.g., tremors, rigidity, bradykinesia) affect daily activities.

Part III: Motor examination - Provides a detailed clinical assessment of motor function through a series of tests, including speech, facial expression, and motor skills.

Part IV: Motor complications - Focuses on the assessment of motor fluctuations (e.g., on/off phenomena) and dyskinesia.

The UPDRS is widely used in both clinical practice and research to monitor disease progression, evaluate treatment efficacy, and facilitate communication among healthcare providers.

DIAGNOSIS

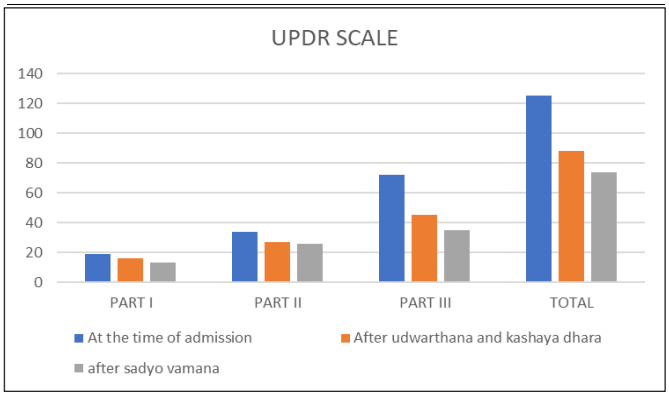
While assessing the cardinal features of PD, in this patient rigidity was the major symptom. Rigidity was more when compared to tremor. So that it can be taken as Rigidity predominant Parkinson's Disease.

Sthambha pradhana kampavata / Rigidity predominant Parkinson's disease.

INTERVENTION DONE

Result

PROCEDURE	UPDR SCALE DOMAINS	TOTAL
At the time of admission	Part 1-19 Part II-34 Part III-72 Part IV- 0	125
After udwarthana and Kashaya dhara	Part I- 16 Part II- 27 Part III- 45 Part IV-0	88
After Sadyo vamana	Part I-13 Part II-26 Part III-35 Part IV- 0	74



Graph 1-MDS UPDR scale.

The total score changed from 125 to 74 after the intervention. There was a significant improvement in motor activity arising from chair, gait, and hygiene tasks. Facial expression improved speech became fluent and clear. Part 1 - Apathy reduced, pain got relieved. Part 2 -Speech improved, saliva and drooling got reduced, the patient can turn in bed easily, walking and balancing improved, can easily perform his activities, getting out of bed improved. Part 3- Facial expression improved, rigidity

DATE	Internal medicine	PROCEDURE	REMARKS
31/05/24-06/06/24	Sapthasaram kashayam 90ml bd-bf Hingutriguna tailam 5ml morning.	Udwarthana with kolakulathadi churna	For 7 days, posture became erect. pain was reduced over the shoulder and ankle.
7/06/24-10/06/24	Sapthasaram kashayam 90ml bd Shaddharanam tab1-0-1.	Kashaya dhara with Dasamoola Kashaya	For 7 days- Rigidity reduced back pain and shoulder pain were reduced. Posture became erect, leaning towards right side got reduced
13/06/24		Sadyo vamana after 2days of sadya Sneha with Sahacharadi mezhukupaka. Peyadi two annakala	1day -4vega &6 upavega. Kaphacheda seen. Since more kaphacheda was seen we can take it as Madhyama sudhi. The patient could stand from a seated posture more easily. Walking improved.

reduced only detected in activation maneuver. Can easily perform hand movements and pronation supination, but slight slowing and amplitude decrement noticed at the end of the action. Leaning towards the right corrected, posture became as the posture of an old age person.

Discussion

Parkinson's disease is a progressive neurodegenerative movement disorder. It occurs due to the death of dopamine-producing nerve cells in the brain. Key symptoms include tremors, rigidity, bradykinesia, and postural instability. Other non-motor symptoms may include sleep disturbances, depression, and cognitive changes. While there's currently no cure, treatments such as medications and lifestyle modifications can help manage symptoms.

Discussion on roga

The patient presented with symptoms indicative of kapha-avṛta vyāna, such as gati saṅga, guru gatrata, cheṣṭa saṅga, gati skhalana, and parva graha. Additionally, there were signs of kapha-avṛta udāna, including swara graha, daurbalya, and guru gatrata. While going through the analysis of the nidana pañchaka it was found that avarana is the cause of vatakopa. The mala rupa kapha produced by agni mandhya reaches the dhatu and sandhi through the transport of rasa dhatu, which then becomes obstructed (avarana) with prana, vyana, and apana, resulting in various symptoms.

Discussion on treatment

To address kapha avarana, rukshana and Sadyovamana were done. External therapies such as udvartanam, and Kashaya dhara were helpful in pacifying kapha dosha and reduces the rigidity and feeling of heaviness (Gourava), Udwarthana has kaphahara, medho vilayana action and gives sthiratha to anga and promotes twak prasadhana. According to Susrtha udwarthana results in siramukha vivruthatha which will lead to the normal functioning of vyana vata and improved function of Brajaka Pitta. Udwarthana improves the circulation and stimulates the peripheral nerves. By reducing the gourava the person may feel easiness to move the limbs significantly pacifying the Bradykinesia and Rigidity. However, when Kapha accumulates and causes an obstruction (Avarana) to Vyana Vata, it leads to impaired circulation, skhalitha gati, parva asthi graha, and stiffness (Sthamba). By alleviating kapha and clearing the channels of Vyana, Udwarthanam will Promote optimal bodily functions, improve overall health and wellness, and improve quality of life.

Vamana therapy is indicated when there is significant involvement of bahala kapha in the samprapti. According to Charaka, Vamana Oushadha, possessing Ushna, Teekshna, Sookshma, Vyavayi, and Vikasi properties, reaches the Hridaya and Sookshma Srotas and Dhamanis through its Veerya. This process helps expel the mala and thereby alleviating Dosha Sangatha. Malasanchaya manifested as accumulated proteins and Lewy bodies in the cytoplasm, plays a role in the pathogenesis of Parkinson's Disease. Through Vamana, this condition can be effectively addressed. By performing vamana, the agni and rasa dhatu are effectively restored to balance. Through proper sodhana procedures, buddhi prasadhana, and enhancement of indriya bala were attained the patient demonstrated significant improvements in motor activity and behavioral factors. These changes were evident, leading to a marked enhancement in overall quality of life.

Conclusion

Langhana therapy comprising udwarthana, Kashaya dhara, and Sadyo vamana is effective in improving domains of the UPDR Scale in Rigidity dominant Parkinson's Disease and also in the quality of life of the patient.

Patient Perspective

The patient expressed his opinion in Malayalam, his mother tongue. He was content and appreciative since his quality of life had significantly improved.

Informed Consent

The patient gave their informed consent for the case to be managed and reported.

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