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Case Report: Parkinsonism with Normal Pressure Hydrocephalus and Recurrent Seizures in an Elderly Male

Parigodson.Gk[1], Immanuvel.T[2], Aravind.M[3], Dr.K. Karthickeyan[4], Dr.P. Shanmuga Sundaram[5], Dr.M. Dheenadhayalan[6*], Dr. M.K. Sundar Sri[7]

[1]PHARM-D Intern, School of Pharmaceutical Science, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.
Email ID: parigodsonmsd@gmail.com
[2]PHARM-D Intern, School of Pharmaceutical Science, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.
Email ID: immanuelimmanuel636@gmail.com
[3]PHARM- D Intern, School of Pharmaceutical Science, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.
Email ID: draravind3344@gmail.com
[4]Professor and Head of the Department of Pharmacy Practice, School of Pharmaceutical Science, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.
Email ID: hodppractice.sps@vistas.ac.in
[5]Dean of the Department of Practice, School of Pharmaceutical Science, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.
Email ID: dean.sps@velsuniv.ac.in
[6]*Assistant Professor of the Department of Pharmacy Practice, School of Pharmaceutical Science, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.
Email ID: DHEENA56012@gmail.com
[7]Assistant Professor of the Department of Pharmacy Practice, School of Pharmaceutical Science, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.
Email ID: sundarsri.sps@vistas.ac.in.com
***Corresponding Author-**
DR.M. DHEENADHAYALAN,
Assistant Professor of the Department of Pharmacy Practice, School of Pharmaceutical Science, Vels Institute of Science, Technology and Advanced Studies, Chennai, Tamil Nadu, India.
Email ID: DHEENA56012@gmail.com

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ABSTRACT

This case report discusses a 64-year-old male patient with a complex medical history involving Parkinson's disease, dementia, and normal pressure hydrocephalus (NPH), who presented with recurrent seizures and altered sensorium following a fall. The patient was also diagnosed with systemic hypertension, syncope, recurrent aspiration pneumonia, and a seizure disorder. This case emphasizes the challenges of managing multiple overlapping neurological and systemic conditions in a geriatric patient and highlights the importance of multidisciplinary care, pharmacological adjustments, and clinical pharmacist interventions in optimizing treatment outcomes.

1. INTRODUCTION

Parkinson's disease (PD) is a progressive neurodegenerative disorder that typically affects movement but can also involve cognitive decline and neuropsychiatric symptoms. Normal Pressure Hydrocephalus (NPH) presents with a classic triad—gait disturbance, urinary incontinence, and dementia—and may mimic or coexist with PD, further complicating diagnosis and management. Seizures, while uncommon in these patients, can significantly impact their prognosis due to increased risk of falls and associated complications. In elderly individuals, especially those with neurodegenerative diseases and multiple comorbidities, these overlapping clinical features necessitate careful diagnostic evaluation and coordinated multidisciplinary care.

Case Details and Laboratory Investigations:

The patient is a 64-year-old male with a height of 162 cm and weight of 60 kg (BMI: 22.9 kg/m²). His past medical history included Parkinson's disease diagnosed in 2021, NPH and dementia, systemic hypertension, seizure disorder (first identified in February 2023), recurrent aspiration pneumonia, and a history of hernia surgery 10 years ago. He was admitted with altered

sensorium, disorientation, unresponsiveness, and a recent history of fall following a seizure. Additional symptoms included eye deviation, constipation, generalized weakness, and unsteady gait. On admission, his vitals were: BP 110/100 mmHg, pulse 60 bpm, respiratory rate 34/min, and temperature 99.4°F. His initial Glasgow Coma Scale (GCS) was 11/15, which improved to 13/15 during hospitalization.Laboratory investigations showed a significantly elevated WBC count (19,300/mm³) and ESR (73 mm/hr), indicating a systemic inflammatory response. Renal parameters were mostly normal, except for a low creatinine level (0.2 mg/dL). Electrolytes were within range except for slightly raised bicarbonate (27.4 mEq/L). Liver function tests wereunremarkable, with normal bilirubin and SGPT levels, although alkaline phosphatase was elevated (260 U/L). Urinalysis revealed acidic pH, trace albumin, RBCs (5–6/HPF), and pus cells (10–15/HPF), suggesting urinary tract inflammation or infection. ECG showed left axis deviation and ST depression in leads V2–V5. CT imaging of the brain revealed bilateral ventricular enlargement, periventricular hypodensities, chronic lacunar infarcts, bilateral basal ganglia changes, and evidence of right-sided mastoiditis and left chronic suppurative otitis media (CSOM). Both eyes showed dislocated lenses.The clinical diagnosis included Parkinsonism, NPH, dementia, systemic hypertension, syncope, recurrent seizures, aspiration pneumonia, and traumatic fall-related injury. Pharmacological therapy included anti-parkinsonian agents (Syndopa Plus, Amantadine, Rasagiline, Trihexyphenidyl), antipsychotic (Quetiapine), antiepileptics (Lacosamide, Levetiracetam), antihypertensives (Metoprolol, Clonidine, Prazosin), and supportive medications such as magnesium, potassium supplements, paracetamol, and inhalation therapy (Fluticasone and Salbutamol nebulization). Pharmacist interventions identified and managed potential drug-drug interactions, particularly those involving metoprolol and doxycycline, and meropenem with furosemide. CNS depressant effects were carefully monitored, and dosage adjustments were made to avoid further complications.

2. DISCUSSION:

This case demonstrates the intricate nature of managing geriatric patients with coexisting neurological conditions like Parkinsonism and NPH, further complicated by seizure disorder. The overlapping symptomatology of gait instability, cognitive dysfunction, and urinary issues between PD and NPH can lead to diagnostic uncertainty and delays in initiating appropriate therapy. The addition of seizures increases the complexity of care, necessitating a delicate balance between effective seizure control and avoidance of sedation, falls, and drug interactions. In this case, polypharmacy was unavoidable due to multiple comorbidities, but pharmacist-led monitoring allowed for safe and effective treatment. The significant rise in inflammatory markers indicated ongoing infection, possibly due to recurrent aspiration or urinary tract involvement, which was addressed through empirical supportive care. Neuroimaging findings confirmed chronic cerebrovascular changes and hydrocephalus, supporting the clinical presentation.

3. RESULTS:

The patient responded well to therapy, with improvement in GCS from 11/15 to 13/15. Seizures were effectively managed with Lacosamide and Levetiracetam. Anti-parkinsonian therapy continued under close monitoring. The patient regained partial orientation and mobility, and his vitals stabilized. A discharge plan was made, incorporating a carefully titrated medication regimen addressing all ongoing conditions, along with follow-up advice for neurology and general medicine.

4. CONCLUSION:

Patients with Parkinson's disease, NPH, and recurrent seizures present a diagnostic and therapeutic challenge, especially in elderly populations. The overlap of neurological symptoms necessitates a high index of suspicion and thorough clinical evaluation. This case underscores the importance of multidisciplinary collaboration, including clinical pharmacists, in minimizing drug interactions and optimizing pharmacotherapy. Prompt recognition, tailored treatment plans, and vigilant monitoring can significantly improve patient outcomes and quality of life while reducing readmissions in such complex cases

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