

NEUROPSYCHOLOGICAL REPORT

Tijuana, Baja California, Mexico

February 12, 2025

I. Patient Information

Name: Kevin I.

Age: 53

Date of birth: August 10, 1971

Place of birth: Pennsylvania, USA

Education: 16, BA in Logistics. University of Tennessee.

Marital Status: Married.

Languages: English.

Laterality: Right-handed.

Name of caregiver or companion: Sarah (Wife).

Referral motive: Neuropsychological assessment prior to initiating treatment.

II. Consultant

Name: Eduardo Castillo Riedel

Specialty: Neuropsychology

Institution: Private consultant.

Licenses to practice:

- Profesional License No. 9841712
- State License No. 025541-02/19
- Master's License No. 12813745

III. Clinical Observations and Procedure

The patient arrives at the consultation accompanied by his wife for an initial neuropsychological evaluation prior to the start of his treatment. He exhibits noticeable rigidity in his gait and movements, as well as evident tremors in his right hand. During the interview, he appears restless and anxious, while his wife provides relevant information regarding his medical history and recent observations about his condition. She explains to her husband that her presence is meant to facilitate communication, as his speech is sometimes difficult to understand. The patient repeatedly expresses feeling highly anxious and frustrated with his current situation.

The primary reported symptoms include:

- **Gait rigidity**
- **Tremors in the right arm**
- **Difficulties in verbal communication**, characterized by pronunciation errors, impaired linguistic prosody, and rapid speech.
- **Impulsivity in responses**, often answering before questions are fully formulated, which the patient attributes to anxiety.

Regarding his medical history, the patient reports experiencing episodes of **depression and anxiety** throughout his life, although he emphasizes that his most severe issue has been **difficulty sleeping since the age of 20**. He has undergone **cognitive-behavioral therapy (CBT) and clinical hypnosis**, but states that these interventions did not significantly improve his sleep quality.

In terms of **medical diagnosis**, the patient was diagnosed with **Parkinson's disease in 2019**; however, his wife notes that symptoms had been evident since 2017. Additionally, he has a history of **bilateral pulmonary embolism**, after which a physician prescribed **Xanax**, as some of his initial symptoms might have been misinterpreted as anxiety-related. It was only later that they were recognized as early signs of Parkinson's disease.

Regarding **substance use**, the patient reports **no history of drug use** beyond consuming **delta-8 gummies**, which have helped him fall asleep. However, he mentions that his primary difficulty is **staying asleep** rather than falling asleep.

For the evaluation, the patient's wife is asked to wait outside the office to facilitate cognitive screenings and ensure a more direct conversation with the patient. In this setting, he appears **more at ease**.

Throughout the session, he repeatedly states that **had the evaluation taken place the previous week, his symptoms would not have been as pronounced**. However, on this occasion, he seems particularly uneasy upon realizing that the **discontinuation of his medication has significantly exacerbated his symptoms**. He expresses deep concern about **losing autonomy in both his personal and professional life**.

The patient underscores his distress over **the suspension of his medication and the visible impact of his symptoms**, suggesting a **high level of anxiety regarding disease progression and the loss of independence**.

IV. Clinical considerations during the evaluation

To prevent unnecessary emotional distress, the patient was not pressured to complete these tasks. Instead, the evaluation focused on **assessing abilities the patient could perform**, and for tests requiring **motor activity**, such as the **Luria Sequence and the Go/No-Go task**, the **left (non-dominant) hand** was used, as it currently exhibits greater motor control in this stage of the disease.

The primary objective was to **evaluate the patient's cognitive performance in a natural state** while simultaneously obtaining **a measurement that excludes the impact of motor symptoms**, which could otherwise interfere with task execution. This approach allows for a more **accurate interpretation of cognitive functions**, preventing test scores from **reflecting only motor limitations rather than actual cognitive deficits**.

Based on these considerations, two different scores were calculated:

1. **Standard score**, without adjustments for motor symptoms.
2. **Adjusted score**, in which **copying tasks and the clock drawing test were excluded** to estimate cognitive performance **without penalization due to motor symptoms**. The scoring adjustment maintained the **original total score scale** for each test while preserving the **cutoff points** for interpretation.

The formula used for this adaptation is as follows:

$$\text{Adjusted Score} = \frac{(\text{Score obtained})(\text{Maximum score possible})}{(\text{Maximum score possible} - \text{Value of excluded exercises})}$$

V. Results

Montreal Cognitive Assessment (MoCA 8.3)

Score: 20/30

Adjusted Score: 23/30

Cutoff score: ≥ 26

Interpretation: mild cognitive dysfunction due to fine motor impairments and spontaneous recall deficits.

INECO Frontal Screening Test (IFS)

Score: 21/30

Adjusted Score: 24/30

Cutoff score: ≥ 25

Interpretation: mild executive dysfunction due to impairments in verbal inhibitory control and abstract thinking.

Frontal Assessment Battery (FAB)

Score: 14/18

Adjusted Score: 17/18

Cutoff score: ≥ 12

Interpretation: cognitive functions are preserved, but unable to execute the Luria motor series with the dominant hand.

VI. Symptoms and Analysis of Results

- Difficulty in spontaneous recall and categorical cue-based retrieval of new information.
- Slight difficulty in abstract thinking.
- Slight difficulty in verbal inhibitory control.
- Hypokinetic dysarthria.

Due to the nature of the patient's motor symptoms, he was unable to complete **figure-copying exercises**, including the **clock drawing task**. In the **Trail Making Test**, an adaptation was implemented that allowed him to **respond verbally**, achieving **successful performance in this modality**.

The evaluation indicates that the patient can **encode information**; however, he **was unable to spontaneously recall any of the learned words** and **failed to retrieve them using categorical cues**. Nevertheless, when provided with **multiple-choice options**, he correctly identified all the words, suggesting that the **encoding process is intact**, but there are **impairments in spontaneous recall and categorical or contextual cue-based retrieval of new information**.

The difficulty in performing the **Luria motor series with the dominant hand**, while execution remained **preserved with the non-dominant hand**, suggests that the impairment is **not due to deficits in motor programming or movement sequencing**, but rather to a **peripheral motor deficit associated with Parkinson's disease**. The presence of **bradykinesia, rigidity, and/or tremor in the dominant hand** may interfere with the precise execution of **rapid and alternating sequential movements**, explaining the difficulty observed in the test. However, the fact that he can **perform the series with the non-dominant hand** indicates that the **cortical circuits responsible for motor planning and sequencing remain intact**.

