

# When Pituitary Dysfunction Mimics Delirium: A Complex Case of Neurobehavioural Symptoms in Panhypopituitarism



UNIVERSITÀ  
DEGLI STUDI  
DI MILANO

Valentina Marinato<sup>1,2</sup>, Laura La Volpe<sup>1,2</sup>, Ludovica Tundo<sup>1,2</sup>, Emma Scelzo<sup>2</sup>, Alberto Priori<sup>1,2</sup>, Tommaso Bocci<sup>1,2</sup>

1. Department of Health Sciences, Aldo Ravelli Center for Neurotechnology and Experimental Brain Therapeutics, University of Milan, Milan, Italy.  
2. Clinical Neurology Unit, ASST Santi Paolo e Carlo, San Paolo University Hospital Milan, Milan, Italy.

## INTRODUCTION

Pituitary disorders can present with a wide range of neuropsychiatric symptoms. Although these manifestations are often attributed to the anatomical and functional connections between the hypothalamic-pituitary axis and the limbic-prefrontal circuits, in some cases they primarily result from profound endocrine imbalances. We report a case of neurobehavioural symptoms in a 77-year-old man diagnosed with panhypopituitarism.

## CASE PRESENTATION

A 77-year-old man with a history of colon adenocarcinoma and active pulmonary metastases presented with a neurobehavioural syndrome characterised by psychomotor retardation, apathy, anorexia and altered consciousness. These symptoms were first observed approximately one month before the onset of an infectious syndrome, which led to hospitalisation in the Internal Medicine unit.

## RESULTS

Upon admission, the patient presented with severe sepsis and multi-organ failure. Chest CT revealed a probable focus of pneumonia, therefore prompt antibiotic treatment was initiated.

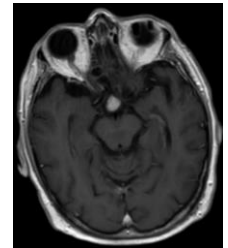
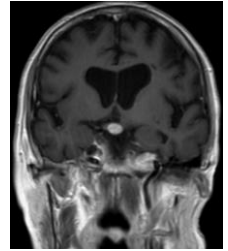
Despite resolution of infection, correction of electrolyte disturbances and overall clinical improvement, neurological deficits persisted, including somnolence, global bradypsychia, disorientation and echolalia.

A lumbar puncture was performed: CSF analysis and viral PCR were unremarkable. Paraneoplastic autoantibodies (LGI1, TR, Ma2/Ta, CV2, Yo, Hu, Ri) were negative in plasma and CSF. EEG showed globally slowed background activity.

Brain MRI revealed a contrast-enhancing hyperdense lesion in the hypothalamic-infundibular region, suggestive of either metastatic disease or hypothalamic-pituitary inflammation. Bilateral hyperintensity of the optic tracts was also observed, consistent with oedema.

Visual Evoked Potentials (VEPs) revealed bilateral slowing of the P1 wave and a prolonged Retino-Cortical Time (RCT), without the amplitude asymmetry ("crossed pattern"), typically observed in chiasmal lesions.

Blood tests revealed severe adrenal insufficiency, central hypothyroidism and diabetes insipidus, prompting hormonal replacement therapy with cortisone acetate, levothyroxine, and desmopressin, which resulted in rapid and significant clinical improvement.



## DISCUSSION

In our case, the behavioural alterations resembling delirium may have had multiple potential contributors, including hospitalisation, sepsis, electrolyte disturbances, metabolic derangements, medication side effects, and paraneoplastic encephalitis. However, the absence of fluctuating awareness and the marked resolution of neuropsychiatric symptoms following hormone replacement therapy suggest that these symptoms were most likely secondary to panhypopituitarism, mediated by severe hypernatraemia, hypothyroidism, and adrenal insufficiency. Furthermore, the clinical presentation is consistent with panhypopituitarism, which is typically characterized by apathy, somnolence, irritability, behavioural disturbances, personality alterations and libido loss.

## CONCLUSIONS

Neurobehavioural symptoms in hospitalised frail patients are often multifactorial and commonly attributed to delirium. However, pituitary dysfunction should be considered in the differential diagnosis, as timely endocrine replacement therapy may lead to significant clinical improvement.

### BIBLIOGRAPHY

1. Weltzner MA. Neuropsychiatry and pituitary disease: an overview. *Psychother Psychosom.* 1998;67(3):125-32. doi: 10.1159/000012272. PMID: 9667059.
2. Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. *Lancet.* 2014 Mar 8;383(9920):911-22. doi: 10.1016/S0140-6736(13)60688-1. Epub 2013 Aug 28. PMID: 23992774; PMCID: PMC4120864.



24-28 Ottobre 2025  
Padova Congress

55° CONGRESSO  
SOCIETÀ ITALIANA  
DI NEUROLOGIA