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Comorbidity of bipolar disorder and dementia: the diagnostic dilemma

Sir,

Though the earlier classifications of bipolar disorder (BD) as given by Akiskal emphasised the importance of the association between cognitive dysfunction and affective symptoms, certain questions remain unanswered.[1] Whether the relation is due to shared genetic risk factors or a chance association or what specific type of dementia is associated with BD is yet to be understood.[2,3]

In this report we described a patient with BD who developed cognitive and behavioural symptoms during the course similar to that of frontotemporal dementia (FTD), emphasising the association between both the disorders.

Our patient is a 61 years old female diagnosed as BD for last 46 years with predominant depressive and few manic episodes, with incomplete inter-episodic recovery and good compliance. She was admitted thrice during her illness and received electroconvulsive therapy twice. Last episode was depression in 2016 which lasted for two months. She was on a combination of mood stabilisers, antipsychotics, and antidepressants in varying doses. She was on Quetiapine 100 mg, Lamotrigine 100 mg, and Desvenlafaxine 100 mg prior to relapse of symptoms in 2016 after which her medications were changed (Chlorpromazine 100 mg, Quetiapine 200 mg, Escitalopram 10 mg, and Lamotrigine 100 mg).

Patient was also diagnosed as hypothyroid in 2009 and was on thyroxine. From last two years (February 2017) gradually she developed slowness, tremors, rigidity, short stepping gait, masking along with urinary retention. In June 2017, she was diagnosed with parkinsonism (on Chlorpromazine 100 mg, Quetiapine 200 mg, Escitalopram 10 mg, and Lamotrigine 100 mg). However, as there was no improvement all the medications were stopped by the treating psychiatrist, following which the parkinsonism symptoms subsided. But, within one week patient developed suspiciousness, visual and auditory hallucinations, suicidal ideations and gesturing. Also, family members noticed that she developed impaired recent and immediate memory, visual spatial disorientation. From June-July 2017, she was not on any psychotropic medications.

She was again started on treatment from August 2017 with Clozapine 50 mg, Venlafaxine 75 mg, and Clonazepam 0.5 mg. Since September 2017, she developed new symptoms of anxiety, decreased pleasure, increased suicidal ideations, restlessness, forgetfulness, and impaired functioning. Mini Mental State Examination (MMSE)[4] score was 20. However, the symptoms were not associated with altered consciousness, disorientation at any point of time. Metabolic profile at that time was not available. Above symptoms kept worsening despite adequate compliance till mid-March 2018.

On 23rd March 2018 she presented to the emergency with giddiness, left the gas stove open, intermittently was sticking the tongue out; also, her suspiciousness increased. By evening there was increase in suspiciousness, was grimacing, reporting auditory and visual hallucinations. Patient was admitted, all the medications were stopped (Clozapine 50 mg, Venlafaxine 75 mg, and Clonazepam 0.5 mg). Her thyroid functions, complete blood count, liver function tests, serum electrolytes, and neuro-imaging were done. Above investigations were normal except gross cerebral atrophy with frontal and temporal predominance, dilated ventricles (Figure 1). Her blood glucose levels were deranged, oral hypoglycaemic agents were adjusted, and blood glucose got stabilised over a week. Her MMSE at the time of admission was 18. She scored 22 out of 36 on severity scoring in Neuropsychiatric inventory, higher scores indicating more severity of behavioural symptoms.[5] There was no disorientation to time, place, or person. Possibilities of diagnoses kept were dementia and BD in remission. She was discharged on Quetiapine 400 mg, Lorazepam 3 mg, Donepezil 10 mg, and Memantine 5 mg. However, within next 20 days she tried to slash her wrist and was readmitted. Possibility of severe depressive episode (bipolar depression) was considered.

Her mental state during this admission revealed sad affect, emotionalism, suicidal ideas, and hopelessness. This time Lithium and Desvenlafaxine were added to her treatment regime (in view of bipolar depression). Serum Lithium levels and drug doses of antidepressant were optimised. Though her depressive symptoms improved, her anxiety/agitation, cognitive impairment did not improve. However, we should admit the fact that neuropsychological assessment could not be carried out at baseline as she was not cooperative.

She was under our follow-up for the past seven months, there was significant improvement in her mood, anxiety symptoms; cognitive complaints also improved gradually, spontaneous reporting of 'forgetfulness' reduced. In the follow-up, neuropsychological assessment was carried out and no deficit was found in trail making test, control oral word association test, verbal memory, digit symbol substitution, and triads test (repeat MMSE score was 28).

Though in the index patient, the diagnosis of BD was not in doubt both based on history and the course of her illness, the dilemma set in when the presenting symptoms changed their nature. At the first encounter with the patient, her symptoms like depression, agitation, emotional withdrawal, repetitive behaviour resembled the picture of dementia, particularly behavioural variant of FTD.

Lebert proposed that history of BD can be linked to a specific type of dementia, whose presentation was similar to

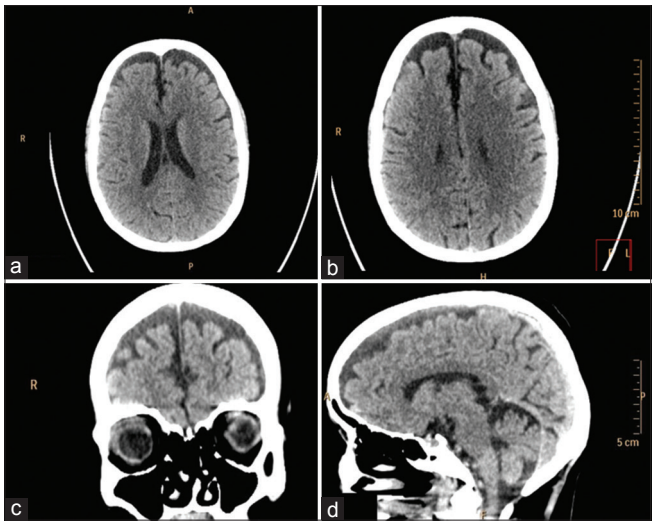

Figure 1: Computed tomography (CT) scan images of the patient- a and b: Axial images at the level of body of caudate and corona radiata; c: Coronal reformatted image in the frontal region; d: Sagittal reformatted image. All these images show the atrophy of the cerebral parenchyma in the frontal region with resultant prominence of the extra-cerebral cerebrospinal fluid (CSF) spaces.

that of FTD. Out of the three main clinical syndromes of FTD, the behavioural variant is the one which is associated with symptom profile mimicking psychiatric symptoms, such as lack of inhibition, euphoria, inappropriate jocularity, apathy, depression, emotional withdrawal, irritability, and repetitive behaviour.[3,6]

The other differentials that need to be considered in such atypical presentation of symptoms are delirium, comorbid general medical conditions, and recent history of onset or increase of substance abuse. They need to be ruled out by relevant history, clinical examinations, and laboratory parameters based on the presentation.

The dilemma still persists as to whether the long standing BD, hypothyroid state, uncontrolled diabetes, medications she received contributed to cognitive symptoms or it was a part of the "pseudo-dementia". More specific neuropsychological tests and functional imaging studies are needed and will assume an important role in the near future for diagnosis and treatment of this cognitive impairment associated with BD.

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