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Challenges of managing delirium and catatonia in a medically ill patient

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ABSTRACT

Background: Untangling catatonia and delirium can be challenging. Furthermore, treatment of one syndrome can potentially worsen another.
Case presentation: We present the case of a 71-year-old patient with a history of schizoaffective disorder, bipolar subtype, who developed catatonia and delirium with prominent psychotic symptoms, during a single hospitalization. Treatment of this patient's catatonia with benzodiazepines exacerbated delirium, while treatment of psychotic symptoms precipitated by delirium with antipsychotics led to catatonia. Catatonia and psychotic symptoms were eventually successfully managed with electroconvulsive therapy (ECT).
Discussion: This case report highlights some of the treatment challenges faced when delirium and catatonia overlap in a medically ill patient. The use of benzodiazepines, valproic acid, antipsychotics, ECT and alternate medications to treat catatonia are also discussed.

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1. Introduction

Catatonia is a clinical syndrome characterized by psychomotor symptoms including stupor, mutism, waxy flexibility, and posturing, with subtypes of stuporous (retarded) catatonia, excited catatonia, and malignant catatonia (Taylor and Fink, 2003). Prevalence in medical settings ranges from 1.6% to 3.2% (Carroll and Spetie, 1994). Historically associated with psychiatric illness, catatonia is now recognized as a systemic medical syndrome, associated with medical, neurologic, and psychiatric disorders (Fink et al., 2016).

Although the exact pathophysiology of catatonia remains unclear, studies suggest abnormal activity at the gamma-aminobutyric acid (GABA), glutamate, and dopamine receptors. Evidence stems from the utility of GABA-A agonists, like benzodiazepines, and NMDA-receptor antagonists, like amantadine, in treating catatonia. Additionally, antidopaminergic agents such as antipsychotics have been implicated in both the progression and potential treatment of catatonia (Daniels, 2009).

Medical providers are often more familiar with the syndrome of delirium than catatonia due to its high prevalence rate in medically ill patients and relatively predictable core features. Catatonia is not as familiar to medical providers and can present in a myriad of ways, leading to lack of detection or misdiagnosis (Oldham and Lee, 2015). This is further complicated by the fact that benzodiazepines, the first line treatment for catatonia, can worsen delirium while antipsychotics, often used to target symptoms of psychosis or agitation related to delirium, can both induce catatonia and exacerbate existing catatonic states (Lee, 2010).

This case report highlights overlapping features of delirium and catatonia and provides strategies to manage them in a medically ill patient, particularly when electroconvulsive treatment (ECT) is not readily accessible.

2. Case report

A 71-year-old African American male with a psychiatric history of schizoaffective disorder, bipolar type and medical history notable for suspected antipsychotic-induced catatonia, stage 4 sacral decubitus ulcer, chronic indwelling Foley catheter due to benign prostatic hypertrophy with chronic obstruction, and recurrent urinary tract infections (UTIs) was admitted to the medicine service due to acute alteration of mental status (AMS) and agitation. During the year prior to admission, the patient had transitioned from living independently in the community, attending a day program for people with serious mental illness, and receiving homemaker services three times per week to requiring services from a long term care (LTC) facility. At baseline, immediately prior to admission, he could ambulate with the assistance of a cane, was alert and oriented to person and place, and could meaningfully interact with family and friends. However, he did require nursing assistance for some activities of daily living (ADLs) in the LTC facility. He had a guardian to assist with health care decisions and conservator to manage his finances. On admission the patient was diagnosed and treated for a new UTI, acute kidney injury (creatinine 2.28 mg/dL,

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baseline 0.8 mg/dL), and *Clostridium difficile* infection. His Foley catheter was replaced in the Emergency Department. The hospital course was complicated by an agitated delirium which responded to parenteral haloperidol (ordered by the internal medicine service). Home medication of divalproex sprinkles (all valproic acid formulations henceforth referred to as valproate for simplicity) 125 mg by mouth (PO) daily was continued. Other oral home medications included amlodipine 2.5 mg daily, aspirin 81 mg daily, atenolol 25 mg daily, simvastatin 5 mg at bedtime and tamulosin 0.4 mg at bedtime. Over eight days, intravenous (IV) fluids and antibiotics (oral vancomycin for the *C. difficile* infection; IV ceftriaxone and ampicillin for UTI) resolved acute medical issues, and the patient was discharged back to the LTC facility.

Three days following discharge, the patient was readmitted for AMS and agitation with recurrence of acute kidney injury (creatinine 2.66 mg/dL). His Foley catheter was once again replaced in the Emergency Department. Urine culture and sensitivity was obtained at the time of admission (notable for pan-sensitive gram positive cocci) and repeated five days after admission (there was no growth on repeat culture). He was continued on oral vancomycin for *C. difficile* infection. On day 2 of this admission, the psychiatry consultation-liaison service was consulted for management of delirium related agitation and found the patient to be catatonic with prominent mannerisms (e.g. saluting repeatedly) with posturing becoming more pronounced in the ensuing days (e.g. holding arms perpendicular to body for periods over 20–30 min; refer to Fig. 1 for Bush Francis Catatonia Rating Scale [BFCRS] scores). Of note, the veteran had been administered haloperidol by the medicine team prior to psychiatry consultation due to an agitated delirium. The patient had history of one prior episode of antipsychotic-induced catatonia (or perhaps catatonia exacerbated by his antipsychotic), which was attributed to a depot fluphenazine injection, although the patient had previously been stable on this injection for years. In order to target catatonia, lorazepam 2 mg IV twice daily (BID) was initiated on day 2 and titrated to lorazepam 2 mg IV three times daily (TID) with good effect. In an effort to avoid antipsychotics during catatonia, valproate 250 mg IV every 2 h (Q2H) as needed for (PRN) agitation was initiated on day 3, while continuing patient's home regimen of valproate 125 mg PO daily. Due to the association of ferropenia with catatonia, ferritin levels were monitored periodically; ferritin levels remained low in this patient. Catatonia resolved after a ten-day course of IV lorazepam and valproate; therefore, lorazepam was tapered and discontinued by day 15. However, an agitated delirium (characterized by disorientation and waxing and waning of consciousness and attention), pressured speech, as well as prominent religious and paranoid delusions remained (day 9–16). On day 7, 9, and 15 the BFCRS score was 0, making agitated delirium more likely than excited catatonia. BFCRS was not measured on days 8, and 10–14 due to varying cross coverage on the Consultation-Liaison service. Ultimately, due to severe psychotic symptoms interfering with medical care (e.g. delusions of healthcare providers poisoning food leading to prolonged food refusal), a cautious trial of olanzapine 2.5 mg PO at bedtime was initiated on day 16 (in the absence of scheduled benzodiazepines). However, catatonia recurred within 24 h of olanzapine administration (as evidenced by BFCRS score of 16) prompting its discontinuation and re-initiation of parenteral lorazepam on day 17. Catatonic symptoms again responded well to lorazepam 1 mg IV TID with PRN lorazepam available for breakthrough catatonia. Due to recurrence of an agitated delirium by day 20, another delirium workup was conducted. Urine culture from day 20 grew *Klebsiella pneumoniae* so IV ceftriaxone was initiated. Due to ongoing pressured speech, psychosis, agitation, and recent worsening of catatonia following antipsychotics administration, by day 21 valproate was titrated to 250 mg PO in the morning and 750 mg PO at bedtime (QHS), with valproate 250 mg IV every 6 h (Q6H) PRN agitation.

As predominant paranoid delusions continued to interfere with medical care, a second cautious trial of antipsychotic was considered. Due to the known risk of cardiorespiratory depression with co-administration of parenteral benzodiazepines and IM olanzapine, a less sedating atypical antipsychotic, ziprasidone, was started on day 19 and titrated to 20 mg PO BID over the next few days, with continuation of valproate and scheduled lorazepam. By day 27, PO ziprasidone had neither improved the psychosis nor precipitated catatonia, likely secondary to poor oral intake impairing its absorption. Since the ongoing psychosis was severely interfering with medical care, the patient was transitioned to intramuscular (IM) ziprasidone on day 27. This led to catatonia symptom recurrence within 24 h (as evidenced by BFCRS score of 9), likely due to improved bioavailability from parenteral medication administration. Therefore, ziprasidone was promptly discontinued. Catatonia once

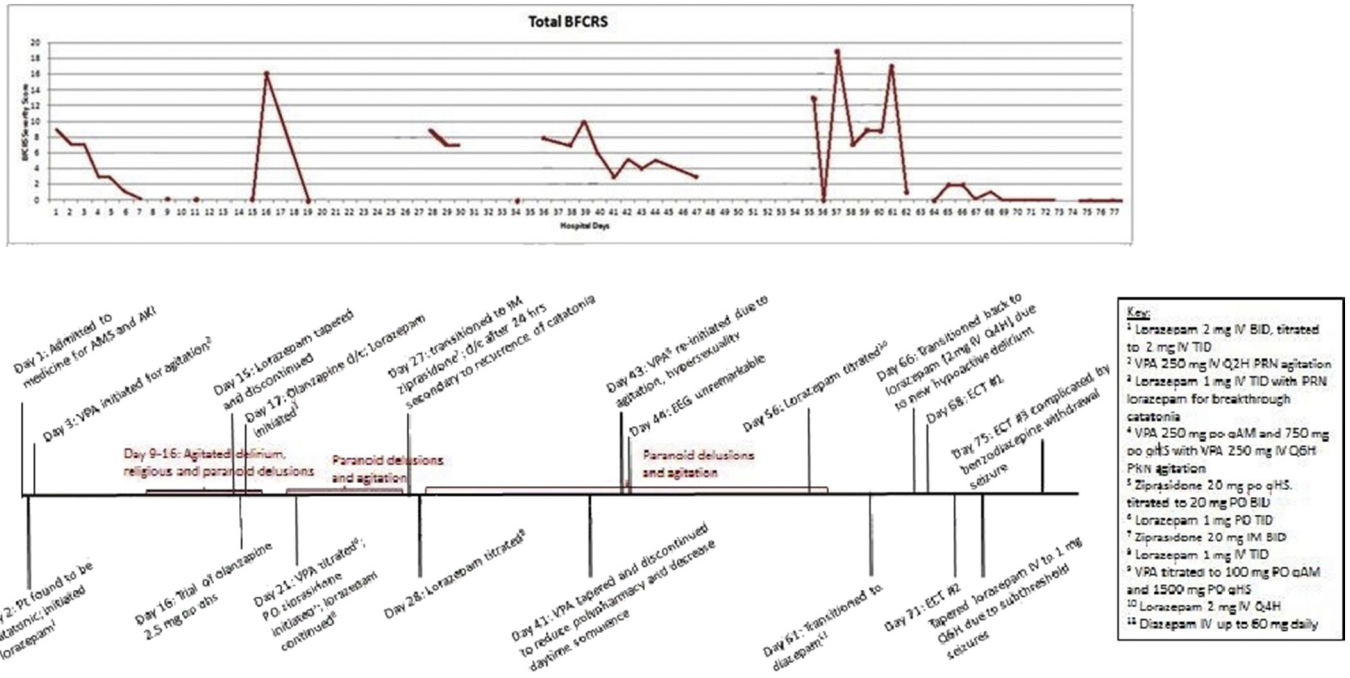

Fig. 1. Total Bush Francis Catatonia Rating Scale scores are depicted in the figure above. Due to cross-coverage on the Consult-Liaison Service, the BFCRS was not measured on every day of the patient's prolonged hospitalization.

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