CASE OF COTARD SYNDROME AND NEUROSYPHILIS

Meher Irani MD, Melanie Orr BSc, Sachidanand Peteru MD, Matthew Green BSc, Emmanuel Kathehis MD
Department of Psychiatry, Jamaica Hospital Medical Center, Queens, NY

MEHERIRANIMD

Background

Cotard Syndrome is a rare neuropsychiatric condition in which individuals have delusions of being deceased or losing their organs. Cotard Syndrome is often seen in the context of severe depression and is associated with other psychopathologies such as Capgras delusion, lycanothropy and catatonia (Basu, A. et al., 2013; Grover, S. et al., 2014). Neurosyphilis is a severe sequelae of untreated Treponema Pallidum infection and its paretic form is commonly associated with psychiatric presentations (Rundell, J. et al., 1985). The most common presenting neuropsychiatric symptoms in Neurosyphilis include personality changes and hallucinations. Additionally, a significant number of patients exhibiting these symptoms have comorbid dementia, especially with temporoparietal lobe involvement. (Sarkar, S., et al. 2019). We present a rare case of Cotard Syndrome in a patient with Neurosyphilis with successful treatment.

Objectives and Methods

- To understand Cotard Syndrome and associated neuropsychiatric conditions.
- To diagnose and manage psychiatric symptoms in a patient with Neurosyphilis.
- Review of a case using electronic medical records and relevant literature. Key terms searched: cotard syndrome, neurosyphilis, COVID-19 infection using Medscape and GoogleScholar.

Case History

We present a 49 year old Korean speaking male with a history of alcohol use disorder, depression (medication noncompliant) and history of COVID-19, which at its presentation 6 months prior was asymptomatic. The patient presented to the Emergency Department for recent changes in behavior. He complained of insomnia, confusion and poor appetite. The patient's family was concerned that he was a danger to others as he was seen at his mother's bedside with a sharp object in hand and had destroyed property within the home. In the Emergency Department, he was agitated, threatening and required chemical and physical restraint on admission. Evaluation was notable for illogical thought processes with somatic delusions. He repeatedly stated "I am already dead, my organs have died" and "I know I am dying, my body is decaying". He also had episodes of catatonia where he would fall to the ground suddenly, which improved following administration of Lorazepam.

Labs

RPR titer was found to be 1:64. Lumbar puncture revealed positive VDRL titer 1:4. Brain MRI was significant for prominent ventricles without acute abnormalities. EEG was unremarkable for seizure activity. Blood Alcohol Content was <10. All additional workup, including urine toxicology and COVID-19 were negative.

Lab Tests

Treponema	Reactive
RPR	Reactive (A)
RPR Titer	**1:64 (A)**

Lumbar Puncture Results

Syphilis VDRL Quantitative CSF	**Reactive 1:4 (A)**
Appearance	clear
Color	clear
Xanthochromia	Negative
WBC	0
RBC	5
Glucose CSF	49.6 mg/dL
Protein CSF	56 mg/dL
CSF Chloride	129 mg/dL

Diagnosis and Treatment

Neurology and Infectious Disease were consulted and recommended lumbar puncture, MRI Brain and EEG. MRI Brain and EEG were unremarkable for any acute neurological abnormalities. Once Lumbar puncture resulted, Infectious Disease recommended Crystalline Penicillin 4 million units IVPB Q4H for 14 days followed by 3 injections of Benzathine Bicillin 2-4 million units weekly.

Patient was diagnosed with:

- Neurosyphilis
- MDD with Psychotic Features and Cotard Syndrome

Initially, he was tried on Aripiprazole 10 mg daily, haloperidol 5 mg BID and Depakote 500 mg BID.

Patient was treated with IV penicillin and was discharged on Mirtazapine 30 mg PO QHS, Olanzapine 20 mg PO QHS, Donepezil 5 mg PO daily, thiamine and folate.

Discussion

Cotard Syndrome is most often documented within the literature in the context of Depression with Psychotic Features (Grover, S. et al., 2014). Studies show a gender predilection for males with a median age of 52 (Sahoo, A. et al., 2017). Neurosyphilis can present psychiatric symptoms including depression, anxiety, psychosis and dementia. This is a unique case of Neurosyphilis with features of Cotard Syndrome in a patient with a history of Depression with treatment noncompliance. Studies show that that high doses of Quetiapine at 1200 mg per day and Risperidone improve symptoms of psychosis in Neurosyphilis (Taycan, O. et al., 2006). Additional studies show that Cotard Syndrome with underlying Depression can be treated with Quetiapine and Venlafaxine (Chan, J. et al., 2009). In this case, Neurosyphilis was successfully treated with IV antibiotics. Psychosis was treated with Olanzapine and Depression was treated with Mirtazapine. Our differential diagnosis also included COVID-19 delirium with Cotard Syndrome, which was ruled out due to a negative COVID-19 test on this admission. However, there is evidence to support the use of Olanzapine in the treatment of COVID-19 psychosis as well. Alcohol induced psychosis was ruled out due to blood alcohol level of less than 10 on admission and persistent psychosis after being treated with Lorazepam as needed. We present this case to inform clinicians of rare manifestations of Neurosyphilis in patients with comorbid psychiatric illness and to advance research into treatment options for psychosis and Cotard Syndrome in Neurosyphilis.

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