A CASE OF PSYCHIATRIC SYMPTOMS DUE TO NEUROSYPHILIS: WHAT IS OLD IS NEW AGAIN

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Background

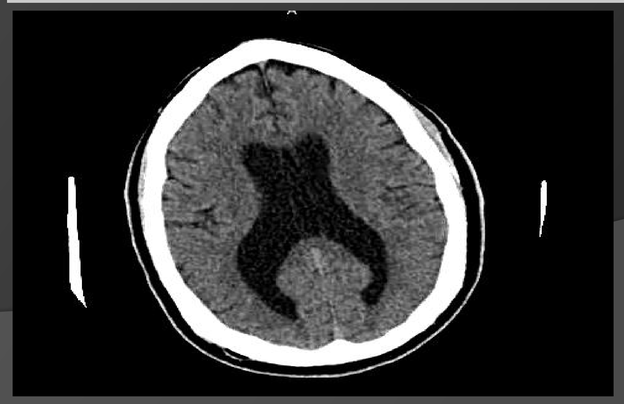
Infection with the Treponema pallidum bacterium (syphilis) can be broken down into primary, secondary, latent, and tertiary clinical stages. CNS involvement can occur at any stage of syphilis, and CSF findings can even be found in primary syphilis, in the absence of clinical symptoms.(5). The signs and symptoms of neurosyphilis are so varied it has been coined “the great imitator” as it can resemble almost any other illness. We present a case of a patient with a history of substance induced psychotic symptoms whose neurosyphilis was missed until neurocognitive deficits were noted.

Case Summary

Mr X. is a 43-year-old African-American male with a past medical history of poly-substance abuse, who presented to the emergency department involuntarily for bizarre behavior. Mr X. had been treated the previous year for cocaine and amphetamine-induced mood disorder, cocaine and amphetamine withdrawal, and cocaine and amphetamine dependence. He was noted at that time to have a positive RPR (rapid plasma regain) , HATTS-reactive (Hemagglutination treponemal test for syphilis), with an RPR titer of 1:16. He was made aware of this finding after discharge and urged to get treatment. Upon presentation a year later, Mr. X was noted to exhibit disorganized thought processes, have tangential speech, and loose associations. Patient was diagnosed with substance induced psychotic disorder and started on Risperdal 1mg BID. However, he continued to display disorganized thinking with increasing agitation, requiring multiple emergency doses of medications. Two days after patient’s admission his lab results showed a positive RPR with a titer of 1:8. Patient developed a significant decline in his cognitive abilities, He was placed in a wheelchair due to his inability to walk and unsteady gait. He also experienced episodes of incontinence. Lumbar puncture was performed, and Mr. X was formally diagnosed with neurosyphilis with a positive VDRL, as well as reactive treponema pallidum antibody. He was then admitted to the medical floor for definitive treatment.

Table 1: Lab results

Blood		1/2017	10/2018
Hemagglutination treponemal test for syphilis (HATTS)		Reactive	Reactive
RPR Titer		Reactive, 1:16	Reactive, 1:8
CSF Fluid	**Ref Range & Units**	**Vial #1**	**Vial #2**
Appearance	Clear	Bloody	Hazy
WBC CSF	0-5mm/3	52 (high)	32 (high)
RBC CSF	0-9mm3	16,875 (high)	2,225 (high)
SEGS CSF	0-6%	30 (high)	10 (high)
LYPMHS CSF	40-80%	59	82 (high)
MONOS CSF	15-45%	9 (low)	8 (low)
EOS CSF	<=1%	2 (high)	
XANTHOCHROMIA CSF	Absent	Absent	Absent (VC,CM)
Tubes received		4	4
Tubes used		1	4
VDRL CSF	Nonreactive	Reactive	NA
Spinal fluid protein	15-45mg/dL	105.3	NA
VDRL Titer	Nonreactive	1:16	NA
TPA, IFA	Nonreactive	Reactive	NA
Volume Fluid	mL	13.0	13.0



Discussion

The distinction between medical causes of psychiatric symptoms, substance induced psychiatric symptoms, or psychiatric symptoms due to an organic etiology are not always clear. Neurosyphilis can be encountered in almost any psychiatric presentation, including dementia, personality changes, mania, depression, psychosis and delirium .(5).

While the discovery of penicillin has resulted in a treatment that often times prevents the development of neurosyphilis, rates for primary and secondary syphilis have increased every year since 2001.(4). In 2017 the CDC also reported a sharp increase in syphilis among newborns.(*1).* Since these rates have continued to increase, it is important for providers to routinely consider screening psychiatric patients for syphilis.

At this time, the US Preventative Services Task Force recommends an initial non-treponemal test (VDRL) or RPR followed by a confirmatory treponemal antibody detection test (FTA-ABS or TPPA).(3). There are limitations to screening for syphilis. Non-treponemal tests, such as the RPR, are reactive in early and latent syphilis, but the sensitivity declines over time, and interpretation is subjective (2). However, this test is cost effective and reliable to perform in low prevalence settings.(2).

In conclusion, neurosyphilis is a treatable disease with a wide range of symptoms. It is important to screen patients and make an early diagnosis to avoid irreversible damage.

References

(1) *Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2017. Atlanta: U.S. Department of Health and Human Services; 2018.*

(2) Dunseth, C. D., Ford, B. A., & Krasowski, M. D. (2017). Traditional versus reverse syphilis algorithms: A comparison at a large academic medical center. *Pract Lab Med, 8*, 52-59. doi:10.1016/j.plabm.2017.04.007

(3) *Final Recommendation Statement: Syphilis Infection in Nonpregnant Adults and Adolescents: Screening* . U.S. Preventive Services Task Force. November 2016. https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/syphilis-infection-in-nonpregnant-adults-and-adolescents. In.

(4) Stone, R. B., Chung, Y., & Ansa, B. E. (2018). Syphilis Trends in the Central Savannah River Area (CSRA) of Georgia and South Carolina, USA. *J Clin Med, 7*(8). doi:10.3390/jcm7080190

(5) Toptan, T., Ozdilek, B., Kenangil, G., Ulker, M., & Domac, F. M. (2015). Neurosyphilis: a case report. *North Clin Istanb, 2*(1), 66-68. doi:10.14744/nci.2015.96268