

## **FIRST EPISODE PSYCHOSIS: WHAT CAN WE LEARN FROM A CASE OF NEUROSYPHILIS?**

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**Keywords:** neurosyphilis, neuropsychiatric symptoms, first episode psychosis

## CASE PRESENTATION:

M. 43 years old, nurse, previously healthy, with no history of mental disorder, was admitted to the Psychiatry service in January/2023 due to reported changes in behavior. Upon clinical examination, the patient was mechanically restrained on a stretcher, alert, perplexed, without interacting with the interviewer. Then she became agitated, shouting unintelligible words. When collecting an objective history, the patient's companion reported that six months ago M. had been fired from her job, progressing with social isolation and crying spells. After 3 months, she noticed that the patient "seemed to forget words." As an aggravating factor, on the day of admission to the hospital, she presented psychomotor agitation, difficulty walking, inability to recognize family members and involuntary release of the urinary sphincter. Additional tests performed upon admission revealed anemia (hemoglobin 11.2 g/dL); leukocytosis without shift (14,500 cells/mL); VDRL: 1/256; cerebrospinal fluid: cellularity 86 leukocytes/mm<sup>3</sup> (polymorphonuclear 93%), proteins 70 mg/dL, glucose 56 mg/dL, VDRL 1/64, culture without growth; CT scan of the skull revealed a process of mild tissue involution. Given the diagnosis of neurosyphilis, she was transferred to the Medical Clinic sector where she had a convulsive episode and underwent treatment with crystalline penicillin for 14 days. She was discharged 25 days after admission, showing partial remission of neuropsychiatric symptoms, with a prescription for phenytoin 100 mg/day and quetiapine 75 mg/day. She was referred for outpatient follow-up with a general practitioner, infectious disease specialist and psychiatrist.

## DISCUSSION:

In the face of the first psychotic episode, it is mandatory to investigate, through adequate history taking, physical and psychological examinations, in addition to laboratory and neuroimaging tests, underlying clinical changes that may cause neuropsychiatric symptoms. Therefore, it is necessary to have a high level of suspicion for diseases such as syphilis, for example, an infection caused by *Treponema pallidum* which, when reaching the central nervous system (neurosyphilis), can cause symptoms that mimic different disorders such as depression, mania, psychosis, dementia and personality changes.<sup>1,3</sup>

Syphilis is a bacterial infection caused by the bacteria *Treponema pallidum*. Although it is a well-known sexually transmitted disease, it is often forgotten that syphilis can also have neuropsychiatric manifestations, including neurosyphilis. Careful investigation of syphilis and neurosyphilis in psychotic conditions is extremely important to make an adequate differential diagnosis between an organic condition and a primarily psychiatric condition.<sup>1-3</sup>

Syphilis is known as "the great imitator" due to its wide range of clinical manifestations and its ability to mimic several other diseases. In cases of latent or inadequately treated syphilis, the bacteria can affect the central nervous system, resulting in neurosyphilis. This condition can present in several forms, including meningitis, meningovascular, generalized paresis, and tabes dorsalis. Importantly, neurosyphilis can mimic primary psychiatric disorders such as schizophrenia, bipolar disorder, and delusional disorder.<sup>2,3</sup>

The differential diagnosis between an organic condition, such as neurosyphilis, and a primarily psychiatric condition is essential to ensure that patients receive adequate treatment. The use of antipsychotic medications in cases of neurosyphilis can be

ineffective and even harmful, as they do not treat the underlying cause of the disease. Furthermore, early diagnosis and treatment of syphilis and neurosyphilis are crucial to avoid neurological complications and improve the patient's prognosis.<sup>3</sup>

The investigation of syphilis and neurosyphilis in psychotic conditions must involve a comprehensive approach. This may include a detailed medical history, thorough physical examination, laboratory tests, and imaging studies. Serological tests, such as VDRL (Venereal Disease Research Laboratory) and FTA-ABS (Fluorescent Treponemal Antibody Absorption), are widely used to detect the presence of antibodies against the bacteria: *Treponema pallidum* in the organism. Furthermore, lumbar puncture for analysis of cerebrospinal fluid may reveal changes characteristic of neurosyphilis.<sup>1,3</sup>

It is important to highlight that the investigation of syphilis and neurosyphilis must not be restricted to patients with psychotic conditions. Syphilis can have different clinical manifestations at different

stages of the disease and affect several body systems. Therefore, it is crucial to consider syphilis as part of the diagnostic evaluation in patients with unexplained neuropsychiatric symptoms.<sup>3</sup>

In conclusion, careful investigation of syphilis and neurosyphilis in psychotic conditions is extremely important to make an adequate differential diagnosis between an organic condition and a primarily psychiatric condition. Syphilis can mimic primary psychiatric disorders, and appropriate treatment of the infection is essential to ensure better outcomes for patients. Healthcare professionals must be aware of warning signs and perform appropriate tests to identify the presence of syphilis and neurosyphilis, thus providing the best possible care for patients.<sup>1-3</sup>

### COMMENTS:

Based on the case analyzed, the importance of investigating differential diagnoses in cases of first psychotic episode is highlighted. Thus, it is possible to institute adequate treatment to restore the health of affected individuals.

### REFERENCES:

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