

## PEER-REVIEW REPORT

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**Title:** Anti-N-methyl-D-aspartate-receptor antibody encephalitis combined with syphilis:  
A case report

**Reviewer's code:** 01761104

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<b>Scientific quality</b>	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
<b>Language quality</b>	<input checked="" type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
<b>Conclusion</b>	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Peer-reviewer statements</b>	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



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## **SPECIFIC COMMENTS TO AUTHORS**

Anti-N-methyl-D-aspartate receptor (NMDAR) encephalitis is a common type of autoimmune encephalitis characterized by complex clinical signs and variable imaging manifestations. The pathogenesis and causes of the disease are unclear. Syphilis is an infectious disease caused by *Treponema pallidum* that can invade the nervous and immune systems and cause systemic symptoms. There are few reports of anti-NMDAR encephalitis with syphilis, and the association between them is unknown; both diseases are related to immune system damage. Here, a 32-year-old man, with a history of surgery and blood transfusion 10 years prior, was admitted to our hospital with complaints of cognitive decline, diplopia, and walking instability during the previous six months. Three months prior to admission, his gait instability gradually worsened; he developed dysarthria, difficulty swallowing, and involuntary shaking of his head, neck, and limbs during the month prior to presentation. Cranial magnetic resonance imaging showed symmetrical abnormal signals in the pons, midbrain, and bilateral basal ganglia, and inflammatory demyelination was considered. The diagnosis of syphilis was confirmed based on the syphilis diagnosis test and the syphilis rapid test. He was given anti-syphilis treatment, but the above symptoms gradually worsened. Anti-NMDAR antibody was positive in cerebrospinal fluid (CSF) but was negative in serum. Due to the CSF findings, anti-NMDAR encephalitis was a consideration. According to the patient's weight, he was treated with intravenous methylprednisolone 1g Qd for 5 days, with the dose gradually decreased for 6 months, and immunoglobulin 25g Qd for 5 days; his symptoms improved after treatment. This case shows that anti-NMDAR encephalitis can present in combination with syphilis; this possibility should be recognized in order to avoid misdiagnosis and treatment delay. Second, this case demonstrates the unique imaging manifestations of anti-NMDAR encephalitis and the clinical manifestations

caused by involvement of the pons, midbrain, and basal ganglia. The case is of interest. Minor suggestion: In addition to the traditional theory and therapy for anti-NMDAR encephalitis, newer theory or even therapy (for example, the below one) has been proposed. The authors may like to address it for enriching their article. Tzang RF et al. Autism Associated With Anti-NMDAR Encephalitis: Glutamate-Related Therapy. Front Psychiatry 2019