



A Diagnostic Dilemma: Young Stroke in Neurosyphilis and HIV

Prakash Narayanan*, Lai WS and Limun MF

Department of Medicine, Tawau General Hospital, Malaysia

Abstract

A 36 years old gentleman was reported to have cerebrovascular accident. Patient was found to have positive serology for syphilis and retroviral disease. The case discussed in this report is to ascertain the importance of diagnosing neurosyphilis based on a high index of clinical suspicion including history and imaging and not only based on CSF VDRL test. This case report is also aimed to establish neurosyphilis as an important etiology for young stroke.

Background

Syphilis is systemic illness that have wide spectrum of clinical manifestations starting from chancre (early syphilis) that can results as neurosyphilis (late syphilis) among untreated patients. In HIV patients, neurosyphilis are frequents and which nearly 10% of untreated syphilis patients can develop neurosyphilis [1]. Neurosyphilis have varies manifestation depending on clinical dominant at presentations of diagnosis; neuropsychiatric, meningovascular and myelopathic [2]. However, there are challenges in diagnosing neurosyphilis among HIV patients. Here in we report a case of neurosyphilis with clinical presentation of young stroke in HIV patient.

Case Presentation

A 36-years old gentleman who experienced of multiple sexual partners presented with sudden onset of right sided body weakness and headache for 2 days prior to admission. Clinical evaluations revealed he had normal mental function (MMSE 25/25). His motor examination showed power of right upper limb of 0/5 and power of right lower limb of 1/5 with positive Babinski sign on the right side. There were no cerebellar signs had elicited and cardiovascular examination were normal which no murmurs had been detected. His peripheral examinations revealed no stigmata of infective endocarditis. Clinical diagnosis of young stroke has been made thus thorough laboratory tests were carried out in order looking at causes of young stroke. Routine blood investigations including full blood count and coagulation profiles were normal. Other serological tests were carried out include autoimmune blood tests, retroviral disease, hepatitis and syphilis serology. The syphilis serology reported to be positive with a titer of 1:16. HIV testing returned as positive. Transthoracic echocardiogram showed no vegetations seen. A lumbar puncture was performed and the cerebrospinal fluid was found to be clear in appearance with high protein content of 1.82 g/L lymphocytes count. However, his CSF-VDRL was negative. MRI brain showed multiple odd brain lesions most likely due to subacute and chronic cerebral infarcts or gumma which is consistent with neurosyphilis. CT scan showed ill-defined hypo densities at the left side of midbrain, cerebral peduncle and splenium of corpus callosum which could represent acute infarcts. There were also multiple well-defined hypo densities at the right side of genu of corpus callosum, right occipital lobe and right centrum semiovale which could represent chronic infarcts. Patient was treated with IV crystalline penicillin for 2 weeks durations and antiplatelet was also initiated. Later he was discharged and was scheduled to be seen in outpatient clinic for initiation of Antiretroviral Therapy (HAART).

Discussion

Neuroinvasion by *Treponema pallidum* is slow progressive disease that affecting central nervous system with result as neurosyphilis. It can occur at any stage of syphilis. The neurologic symptoms are result from acute or subacute meningitis, cranial nerve defect and inflammatory vasculitis. Radiological findings of neurosyphilis are varies and inconsistent including syphilitic meningitis, meningovascular syphilis (cerebral infarctions), parenchymatous and gummatous neurosyphilis [3-5]. MRI brain is highly sensitive in detecting cerebral vasculitis affecting small,

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*Correspondence:

Prakash Narayanan, Department of
Medicine, Tawau General Hospital,
Malaysia, Tel: 0177795140;
E-mail: prakashnarayanan1388@gmail.
com

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medium and large vessels [2]. Syphilitic gummas appeared between dura and pia mater of meningeal layers and it can mimicking brain tumor which can arise at similar areas. Syphilitic gummas reveal hypointense to isointense from T1 weighted images and hyperintense mass from T2 weighted image from MRI brain. Furthermore, Diffusion Weighted Imaging (DWI) signal and ADC of MRI brain are also important to exclude brain tumor as differential diagnosis [2,3]. The most prominent of neurosyphilis findings in MRI brain are atrophy, white matter lesions, cerebral infarction and edema. There is no gold standard criteria to diagnose neurosyphilis even though collection of CSF is mandatory. The CSF results showing increase of WBC more than 5 to 10 cells/mm³ and protein levels greater than 40 mg/dL [6]. The negative result of CSF-VDRL does not rule out of neurosyphilis. The specificity of CSF-VDRL is 100% but the sensitivity are low [7,8]. However the negative result from CSF-VDRL also can because of penicillin exposure prior to diagnosis. There is also challenging in diagnosing neurosyphilis among HIV patient solely based on CSF fluid because HIV itself can cause pleocytosis and elevated protein level. Thus there is controversial in making diagnosis of neurosyphilis among asymptomatic HIV patients [7,8]. In our case, the serological plasma of VDRL test is positive with low titer of 1:16 but CSF-VDRL is negative. Radiological imaging and CSF-VDRL are also important in determine the treatment efficacy by looking at serological and radiological response after treatment. Penicillin based therapy is mandatory in treating neurosyphilis. Two weeks durations of intravenous crystalline penicillin 2 to 6 million units every 4 h is required and recommended. In term of treatment of neurosyphilis, there are no differences among HIV positive and non HIV patients. Thus we are following recommendation in treating our patients.

Conclusion

Neurosyphilis should be considered as an important etiology or differential diagnosis for young stroke. Acute stroke maybe the first manifestation of neurosyphilis. Any patients with ischemic stroke should be screened for syphilis.

References

1. Shamin Masrouf KE, Abdennadher M. Stroke as initial manifestation of neurosyphilis in an HIV positive patient. *Pract Neurol*. 2016;32-3.
2. Czarnowska-Cubała MSW, Cubała WJ, Jakuszkowiak-Wojten K, Landowski J, Krysta K. Mr Findings In Neurosyphilis – A literature review with a focus on a practical approach to neuroimaging psychiatry Danubina, a conference paper. 2013;153-7.
3. Yuling Xi ZL, Zhang S, Chu M, Lu Y. MRI of neurosyphilis presenting as brain tumor: A case report. *Radiol Infect Dis*. 2015;2(4):197-200.
4. Yu Mi Jeong HYH, Kim HS. MRI of neurosyphilis presenting as mesiotemporal abnormalities: A case report. *Korean J Radiol*. 2009;10(3):310-12.
5. Peng FHX, Zhong X, Wei Q, Jiang Y, Bao J, Wu A, et al. CT and MR findings in HIV-negative neurosyphilis. *Eur J Radiol*. 2008;66(1):1-6.
6. Musher DM. Neurosyphilis: Diagnosis and response to treatment. *Clin Infect Dis*. 2008;47(7):900-2.
7. Nayak SAB. VDRL test and its interpretation. *Indian J Dermatol*. 2012;57(1):3-8.
8. Emily L, Ho CMM. Treponemal tests for neurosyphilis – less accurate than what we thought? *Sex Transm Dis*. 2012;39(4):298-9.