

Neurosyphilis Related Acute Transverse Myelitis: A Rare Case and Clinical Evaluation

Nörosifilize Bağlı Gelişen Transvers Miyelit: Nadir Gözlenen Bir Olgu Sunumu

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ABSTRACT

Syphilis is a bacterial inflammation of *Treponema pallidum*. Neurosyphilis is a poorly understood complication and might occur any time during the course of infection. Myelitis is an uncommon complication of neurosyphilis and have been infrequently reported in the literature. A 63-year old male patient was admitted to the hospital with the symptoms of upper and lower motor neuron diseases. Serological diagnosing tests were positive in both serume and CSF. His toracal spinal MRI revealed an intramedullary high-signal intensity lesion on T10 and diagnosed as syphilitic myelitis and treated 10 days with ceftriaxone 2g/day. During 6 months of the follow-up his neurological and neuroimaging findings were recovered. If the primary infection is untreated, inflammation of CNS arteries end up with store-mimic manifestations of meningovascular syphilis. Due to sphilitic myelitic cases are frequent in the literature, neurosyphilis should be in mind for the differential diagnosis the reason why it could be treatable.

Key Words: Transverse myelitis; neurosyphilis; treponema pallidum; syphilitic myelitis

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ÖZET

Sifiliz, *Treponema pallidum*'a bağlı ortaya çıkan bakteriyel bir enfeksiyondür. Nörosifiliz ise hastalığın nadir görülen ve henüz net aydınlatılmamış bir komplikasyonu olup herhangi bir evrede ortaya çıkabilir. Miyelit ise nörosifilize ait nadir bir komplikasyon olup literatürde çok az bildirilmiştir. 63 yaşında erkek hasta kliniğimize üst ve alt motor nöron bulguları ile başvurdu. Serum ve BOS'da serolojik testler pozitif saptandı. Torakal MRI'da T10 seviyesinde intrameduller, hiperintens lezyon gözlemlendi ve sifilitik miyelit öntanısı ile 10 gün seftriakson 2mg/gün tedavisi verildi. Tedavi sonrası yapılan 6 aylık takiplerinde hastanın nörolojik ve nöroradyolojik bulgularının düzeldiği gözlemlendi. Eğer sifilizin primer enfeksiyonu tedavi edilmezse SSS arterlerinde inflamasyon gelişip meningovasküler sifilize ait inme-benzeri sendrom bulguları gözlenebilir. Literatürde sifilitik miyelit vakalarının nadiren bildirilmesi ve tedavisinin de mümkün olması nedeniyle nörosifiliz miyelit ayırıcı tanısında akılda bulundurulmalıdır.

Anahtar Sözcükler: Transvers miyelit; nörosifiliz; treponema pallidum; sifilitik miyelit

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INTRODUCTION

Syphilis is a sexually-transmitted inflammation of *Treponema pallidum*. The disease is divided into stages. In primary stage, a typical skin lesion which is commonly diagnosed by many of the clinicians as known as chancre seen. If untreated or not medicated enough multiple reactions occurs on secondary stage. After a period that can only be detected by serological tests called as latent phase, tertiary stage develops which cardiac or gummatous syphilis(1-4). Neurosyphilis is a poorly understood complication and might occur any time during the course of infection(2). It is classified as early with the symptoms of cranial nerve deficits, meningitis, stroke, mental status changes and late neurosyphilis as findings of dementia, tabes dorsalis and syringomyelia(1,3-5). This case is important the reason why myelitis is an uncommon complication and have been infrequently reported in the literature.

CASE REPORT

A 63-year old male patient was admitted to the hospital with the complaints of acute onset low back pain and descending lower extremity numbness for 6 days. He had a history of hypertension and benign prostate hyperplasia, taking indapamide 1,5mg/day and enalapril+nitrendipine 10/20mg/day as medication. He did not had any infectious disease on his medical history recently. On physical examination, he did not have any skin or tongue lesions. On the other hand, on his neurological examination pupil reflexes were normal both eyes directly and indirectly. Muscle strengths were decreased to -4/5 bilaterally on lower limbs, abdominal reflexes were absent under the T10 dermatome area and deep tendon jerks were absent on lower extremities. Plantar responses were equivocal bilaterally. He had sensorial loss under T10 dermatome. Proprioception and vibratory sensation loss were also marked on lower extremities. Romberg test was negative. He had sensorial ataxic gait on walking. Laboratory findings for complete blood cell count, liver enzymes, BUN, creatinine, C-reactive protein, erythrocyte sedimentation rate, vitamin B12 levels and urinalysis were normal. Anti-nuclear antibodies, anti-neutrophilic cytoplasmic antibodies, anti-extractable nuclear antigen antibodies, anti-cardiolipin IgM and IgG, lupus anticoagulant, C3 and C4 levels, anti-SS-A and SS-B, rheumatoid factor, angiotensin converting enzyme, anti-thyroid antibodies were all negative. Serological tests for hepatitis B and C, brucellosis, cytomegalovirus, herpes simplex virus, Epstein-Barr virus, human immunodeficiency virus (HIV) were negative but positive for Venereal Disease Research Laboratory test (VDRL). To confirm VDRL result, reagin plasma response (RPR) was performed and also as positive (1:128). *Treponema pallidum* hemagglutination assay (TPHA) was positive for >1:1256 (<1/80 was negative). Lumbar puncture revealed 50 leukocytes of cerebrospinal fluid (CSF) with the pressure of 220mm H₂O. CSF protein was 68mg/dL, glucose level 45mg/dL as concurrent blood glucose was 127mg/dL, sodium level was 142mEq/L and anti aquaporin-4 (AQP4) antibody was negative. CSF bacterial culture was negative. VDRL in CSF was positive rated as 1:2 and TPHA as 1/10240.

Cranial magnetic resonance imaging (MRI) examination was normal but toracal spinal MRI evaluated expansive intramedullary high-signal intensity lesion at T10 on T2-weighted images and gadolinium enhancement on T1-weighted images as consistent with myelitis.

As the result, the patient was diagnosed as transverse myelitis due to neurosyphilis and treated with intravenous ceftriaxone 2g/day for 10 days due to penicillin was not be able to be provided neither at the hospital nor on the market. After 6 months of the follow-up his neurological and neuroimaging signs were recovered. CSF analyses revealed normal protein levels and VDRL was non-reactive.

DISCUSSION

Neurosyphilis is not a well understood complication to come, may occur any time on duration and with the absence of skin lesions diagnosis might be compelling(2,4). If the primary infection is untreated, inflammation of CNS arteries end up with meningovascular syphilis in the early stage. Its recognition in earlier times provides an opportunity to prevent neurological deficits. In 10 to 25 years, dementia and tabes dorsalis occurs mostly(2). TM caused by *Treponema pallidum* is very rare but well-recognized when seen and prevalence is 3%. It is known to be type of meningovascular syphilis of spinal cord. In differential diagnosing idiopathic TM, spinal cord infarction, acute inflammatory polyradiculoneuropathy and neuromyelitis optica spectrum disorders (NMO-SD) can be counted(1,5).

In our case, the patient's weakness and numbness were descending as they did not reveal findings of polyneuropathy. CSF did not contain erythrocytes and no restricted diffusion area were seen on spinal MRI. On cranial area there was not any demyelinating lesions on neuroimaging, ophthalmological examination was normal and AQP-4 IgG was negative on CSF so NMO-SD was ruled out. Based on the serological tests of CSF, diagnosis was consistent with neurosyphilis. Since there was not any skin lesions seen and serological tests were found positive, the patient was thought to be in the early period of the disease.

Lumbar puncture and a combination of CSF analyses are the only recommended methods to diagnose. Elevated lymphocyte count, protein and reactive VDRL is sufficient and is highly specific(2,6). In all stages, first choice of treatment is iv aqueous crystalline penicillin G that is administered as 3-4 million units iv every 4 hours for 10 – 14 days according to the "Sexually Transmitted Disease Treatment Guideline, 2015". Another approved regimen is ceftriaxone 2g for 10 - 14days. Doxycycline has been studied and found effective on 200 mg oral twice a day for 21-28 days. After the treatment, the CSF should be repeated in every 6 months until it is in normal ranges and VDRL is negative(4,7).

In conclusion this case points out that even though its percentage is very rare, Neurosyphilis should be in differential diagnosis of TM the reason why clinical and neuroimaging findings are non-specific for the infection and could be treatable. Even in a clinical suspicion, the serological tests should be run.

Conflict of interest

No conflict of interest was declared by the authors.

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