



CASE REPORT ON A RARE NEUROLOGICAL COMPLICATION OF MYCOBACTERIUM TUBERCULOSIS INFECTION IN HIV PATIENT

General Medicine

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ABSTRACT

LETM is rarely caused by tuberculosis infection. LETM is a contiguous immune-mediated inflammatory lesion of the spinal cord that extends to three or more segments of spinal cord. Here we presenting a case of 55 years old female patient with known HIV infection and no history of tuberculosis infection admitted in the hospital with complains of sudden onset of asymmetrical weakness of lower limbs and urinary incontinence from four days. on evaluation she was underwent some series of investigations, in that finally diagnosed with longitudinally extensive transverse myelitis due to tuberculosis infection. Then patient was treated with ART and ATT with steroids and supportive treatment along with physiotherapy. after some days patient condition was gradually improving with treatment and discharged, advised physiotherapy daily and follow-up on OPD basis. So based on this case report, we recommend that clinicians should suspect mycobacterium tuberculosis infection when patient diagnosed with transverse myelitis.

KEYWORDS

Longitudinally extensive transverse myelitis, Tuberculosis infection, HIV infection.

INTRODUCTION

The most common manifestations of tuberculosis in the central nervous system are tuberculosis meningitis followed by tuberculosis abscess and cerebral tuberculoma.

LETM is rarely caused by tuberculosis infection. LETM is a contiguous immune-mediated inflammatory lesion of the spinal cord that extends to three or more segments of spinal cord(1).

Acute transverse myelitis is described by weakness, disturbances in the sensorium and dysfunction of the bladder and bowels.

LETM is a rare subtype of acute transverse myelitis. it refers to the inflammation of the spinal cord that involves three or more segments of the vertebrae. As the disease progresses it can develop into severe disabilities (2).

In all tuberculosis cases only one percent of people affected with CNS TB, half of which involves the spine.

In patients with HIV infection the incidence of CNS tuberculosis is 10 to 20%. various manifestations of spinal tuberculosis have been discussed in the literature, but intramedullary involvement is extremely rare (3).

Case Presentation:

55 years old female patient with known history of retroviral disease on homeopathy medications with no comorbidities and no history of Tuberculosis and no recent vaccination presented with sudden onset of asymmetrical weakness of lower limbs and urinary incontinence from four days and complaints of numbness and tingling sensation of left lower limb and power 0/5 and right lower limb power 2/5 according to medical research council grade. she had no history of Type 2 DM and Hypertension. After clinical evaluation, routine investigations were sent. after that started on ART and treated with supportive treatment and physiotherapy. MRI spine revealed that spinal meningitis and longitudinally extensive transverse myelitis with subtle leptomeningeal enhancement in lower dorsal spine-with suspicion of tuberculosis infection. MRI brain showed that early small vessel ischemic changes. Then neurology consultation was done, advised for CSF analysis, VEP and aquaporin AF antibodies to rule out demyelinating disorders. CSF cytology showed predominance of lymphocytes and protein content suggestive of most likely tuberculosis. VEP (visual evoked potentials) was normal and aquaporin antibody was negative. So not suggestive of demyelinating disorders. LFT was done and monitored and started on ATT and steroids. Then patient was treated with ART and ATT with steroids and supportive treatment along with physiotherapy. after some days patient condition was gradually improving with treatment. and discharged, advised physiotherapy daily and follow-up on OPD basis.

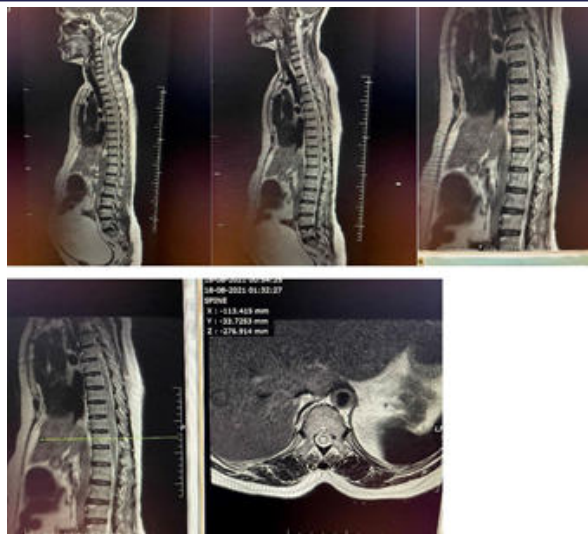


Fig: 1 Mri Spine Showing Longitudinally Extensive Transverse Myelitis.

DISCUSSION:

Neurological TB associated with high morbidity and mortality rate. Tuberculosis myelopathy is one of the rarest form of CNS TB. Involvement of the spinal cord represents like leptomeningitis, intramedullary tuberculoma, extradural TB and exceptionally as transverse myelitis. Transverse myelitis is a rarest form of neurological disease described by spinal cord involvement due to acute inflammation that can lead to spinal ischemia and eventually necrosis. The most common manifestations are paresthesia of lower limbs and bladder symptoms. The diagnosis of transverse myelitis requires MRI and CSF analysis of the spinal cord. CSF analysis typically shows lymphocytes pleocytosis with low glucose and high protein in the cerebrospinal fluid. In the absence of MRI of the spinal cord and CSF analysis of cord, clinical suspicion and initial empirical therapy of tuberculosis is very important and necessary to decreasing the disability(4).

Spinal intramedullary TB is a rarest form of CNS TB and manifest in the form of Myelo-radiculitis, intramedullary tuberculoma and anterior spinal artery thrombosis and transverse myelitis which is rarely fulfilled criteria of a longitudinally extensive transverse myelitis. Extensive inflammation, hyperintense lesions on T2 weighted images on MRI of spinal cord spanning over 3 or more Contiguous vertebral segments and significant neuro deficits are hallmarks of LETM. Several etiologies of LETM have been reported

in recent times including infections, autoimmune diseases, connective tissue diseases, malignancy, metabolic myelopathies etc. and neuromyelitis Optica spectrum disorders(NMOSD)remains the classical causative association. Exact pathogenesis of LETM in TB is yet to be elucidated, however, an immune inflammatory response to the infectious agent or the infection itself has been postulated as a cause in previous literatures(5).

According to the global tuberculosis report 2020 rankings, TB among the top ten causes of death due to and single infectious agent and it is higher than HIV ranking. Tuberculous meningitis is characterized by inflammation of the brain meninges and spinal cord caused by mycobacterium tuberculosis and it is one of the type of extrapulmonary tuberculosis and considered a medical emergency. LETM affects five per million people annually and associated with tuberculous meningitis remains largely unreported. Z Zafar et al, presented a case of 24-year-old male diagnosed with tuberculous meningitis with LETM similar to our case. but in our case report, patient had previous HIV infection (6).

Kumar et al, presented a case of 16 year old boy diagnosed with pulmonary tuberculosis with LETM. but in our case no lung involvement was seen. The current treatment for myelitis association with TB remains early initiation of high dose, short period corticosteroids, immunoglobulins along with Anti tubercular therapy may result in better long-term outcomes in selected patients(7&8).

CONCLUSION:

LETM is a rare, treatable neurological condition associated with high morbidity. She is known HIV patient, not an ART so making them susceptible to opportunistic infections like TB. So possibly because of her very low immunity she has presented with rare manifestations of TB. It is very important to start ART at the earliest possible time for HIV patients and to closely monitor for drug compliance. mycobacterium tuberculosis is a very important and low index suspected cause of transverse myelitis. So based on this case report, we recommend that clinicians should suspect mycobacterium tuberculosis when patient diagnosed with transverse myelitis. early diagnosis and appropriate antitubercular therapy with systemic corticosteroids is beneficial to reduce permanent disability or disease progression.

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