Title: Beyond the Culture: Diagnosing a Devastating Case of CNS Tuberculosis

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Introduction: Mycobacterium tuberculosis infection is widespread, but Central Nervous System (CNS) tuberculosis is a rare and could lead to severe complication. It often presents with diverse clinical features and can be difficult to diagnose due to potentially negative microbiological tests.

Case Description: A 19-year-old woman with no known medical illness presented with progressive back pain, followed by lower limb weakness, numbness, and needing assistance in walking. She denied chronic cough, night sweats, intermittent fever or constitutional symptoms. She received Bacillus Calmette–Guérin (BCG) vaccine and posed no risk factors for tuberculosis recently. Neurological examination revealed hyperreflexia and progressively reduced muscle power over bilateral lower limbs. Initial laboratory tests including infective markers, electrolytes as well as tumor markers were normal. Cerebrospinal fluid (CSF) analysis showed xanthochromia with elevated protein but negative for tuberculosis. Magnetic resonance imaging of the whole spine showed extensive spinal dural enhancement and computed tomography of the brain revealed lesions suggestive of tuberculous arachnoiditis, myelitis, and tuberculomas. Despite negative CSF cultures for tuberculosis, anti-tuberculous medications were initiated due to positive radiological findings. The case was complicated with hydrocephalus requiring ventriculoperitoneal shunt placement and steroids. Subsequently patient developed spontaneous partial thrombosis of left common iliac vein which requiring rivaroxaban and subcutaneous clexane which later inferior vena cava filter was inserted.

Discussion: This case highlights the challenging presentation of CNS tuberculosis in view of no risk factors for tuberculosis infection. Despite negative CSF cultures, clinical features and radiological findings were highly suggestive. Early diagnosis and treatment are crucial to prevent long-term complications.

Conclusion: CNS tuberculosis can present with a fulminant course and multisystem involvements. A high index of suspicion is necessary for diagnosis, even in the absence of positive microbiological confirmation. Early initiation of anti-tuberculous therapy and management of complications are essential for improving outcomes. This case emphasizes the importance of considering CNS tuberculosis in patients with atypical neurological presentations.

Keywords: tuberculosis, myelitis, central nervous system