A challenging case of Central Nervous System (CNS) Involvement (i) with Chronic Lymphocytic Leukemia (CLL): A Case report

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INTRODUCTION
Chronic lymphocytic leukemia (CLL) is a mature B cell clone, mainly characterized by a progressive accumulation of mononuclear B lymphocytes. It manifests primarily in the blood (1), infiltration of CLL lymphocytes outside of this site is relatively rare and the right hand side was involved. He (2) These sites include central nervous system (CNS). (3) CNS involvement by CLL (CNSi CLL) is a rare condition. It may occur at any stage of CLL, either as the first manifestation or after several years of treatment, often in the phase of progression or transformation into a more aggressive clinical form. (3) that is why progression seems to be related to CLL characteristics rather than to CNS involvement itself. (4) The standard of care for CNSi CLL by CLL has been involved in only 20% of cases. (2) Symptoms could be due to other etiologies in 80% of cases. (2)

AIM
This case is unique; a neurological manifestation in an immunocompromised patient due to underlying malignancy (CNSi). The first clinical diagnosis was made by the team. The patient was initially treated as post COVID ADEM. He was given high dose methylprednisolone (IV) for a week and then oral prednisolone, Intravenous immunoglobulin (IVIG) and a course of anti biotics. However he continued to deteriorate and the symptoms were not under control. The patient presented with a history of progressive sensorimotor symptoms in lower limbs, so his gait became unsteady. He experienced most of these symptoms while seated. He felt numbness around the face and later the right side was involved. He felt very weak in his legs. He reported visual symptoms. It started as numbness around the face and later the right side was involved. He felt very weak in his legs. He reported visual symptoms.

METHODS
The basic laboratory investigations were within the normal limits. MRI Brain with contrast on presentation revealed abnormal T2 & FLAIR hyperintensity signal in the bilateral middle cerebral peduncles. (4) MRI pelvis revealed multilevel and long segment spinal cord demyelinating lesion extending for more than 3 contiguous segments. 12 scan MRI brain & spine revealed marked improvements. However, the patient showed significant neurological improvement after starting Acalabrutinib. It was able to go to back to his work after 6 months of sick leave. In view of the patient’s clinical improvement, the bone marrow and spine specimens were collected for potential疑难 case and the final diagnosis was confirmed. The patient was started on Acalabrutinib (tyrosine kinase inhibitor) for ADEM.

RESULTS
The patient underwent further thorough investigation to rule out causes of CNS demyelination and other etiologies explaining its clinical and radiological findings. CNSi CLL was on the differential diagnosis (DDx) but it was misdiagnosed due to the initial negative CSF cytology test and Cytospin for Blast (6) of B cell clone. The G-banding was not positive after 1 year of the presentation. Biopsy was needed to distinguish between CLL primary brain tumors, or metastatic malignant (2) it was difficult to differentiate between these diseases as they can occur in non-accessible locations. In the brainstem, cerebellum and the spinal cord. The thinnest part of demyelination was associated between CNSi CLL and acute disseminated encephalomyelitis (ADEM). This case is unique; a neurological manifestation in an immunocompromised patient due to underlying malignancy (CNSi). The first clinical diagnosis was made by the team. The patient presented with a history of progressive sensorimotor symptoms in lower limbs, so his gait became unsteady. He experienced most of these symptoms while seated. He felt numbness around the face and later the right side was involved. He felt very weak in his legs. He reported visual symptoms. It started as numbness around the face and later the right side was involved. He felt very weak in his legs. He reported visual symptoms.

CONCLUSIONS
CNSi CLL is a rare condition and there is usual delay in diagnosis due to its variable manifestations, challenging diagnosis process and possible misdiagnosis with a mimicker condition which delays the treatment. The presence of neurological symptoms should prompt consideration of an active CLL disease. The diagnosis of clinically significant CNSi CLL is based on positive CSF ADEM(2) with or without image evidence of brain tumor and tissue biopsy (when CSF analysis is negative or not performed); (2)(9)(4).

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REFERENCES