Atypical Presentation of Cervical Myelopathy Presenting with Tremors
A Case Report

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Introduction

- Degenerative cervical myelopathy (DCM) is the leading cause of spinal cord dysfunction comprising 54% of nontraumatic spinal cord injury despite data that suggest there may be significant under-reporting. [1,2,3]
- Aging global population is expected to increase incidence and economic burden of DCM.[3,5]
- Several studies have demonstrated delays in diagnosis of DCM at a median timeframe of 1-2 year. [3,4,5]
- Delayed diagnosis and treatment is associated with increasing disability, dependence, and unemployment. [3,4,5]
- Insidious, nonspecific symptomatology, distracting comorbidity, and incomplete neurologic history and examination by practitioners contribute to delays in diagnosis. [3,4,5]
- Here we present a case of DCM identified through history and exam which had been undetected by multiple specialists.

Case Description

An 80-year-old female presented to the hospital with a 2-week history of progressive diffuse morbilliform rash following outpatient transition from Vimpat to Lamictal. Neurology consultant noted upper extremity action tremors which patient note to be chronic for months, but acutely worsening and previously attributed to anti-epileptic medications. Physiatry, consulted for rehabilitation placement, elicited history of 4 to 6 month progressive functional decline from independent to limited, unstable household ambulation with a rolling walker and multiple recent falls resulting in hospital admissions. Patient also reported progressive loss of ability to write and use her upper extremities, attributing this to her tremors. Examination was remarkable for unilateral Hoffman sign, bilateral ankle sustained ankle clonus, bilateral Babinski sign, slow broad-based gait with subjective instability, patchy hypoesthesia, and upper extremity action tremors.

Workup

- During previous admissions for falls/seizures, patient underwent brain MRI, brain CT, lumbar spine MRI, all being unremarkable for central or lumbar etiology.
- New MRI of the cervical spine identified severe C5/6 central canal stenosis with myelopathy/myelomalacia (Figure 1: A-B).

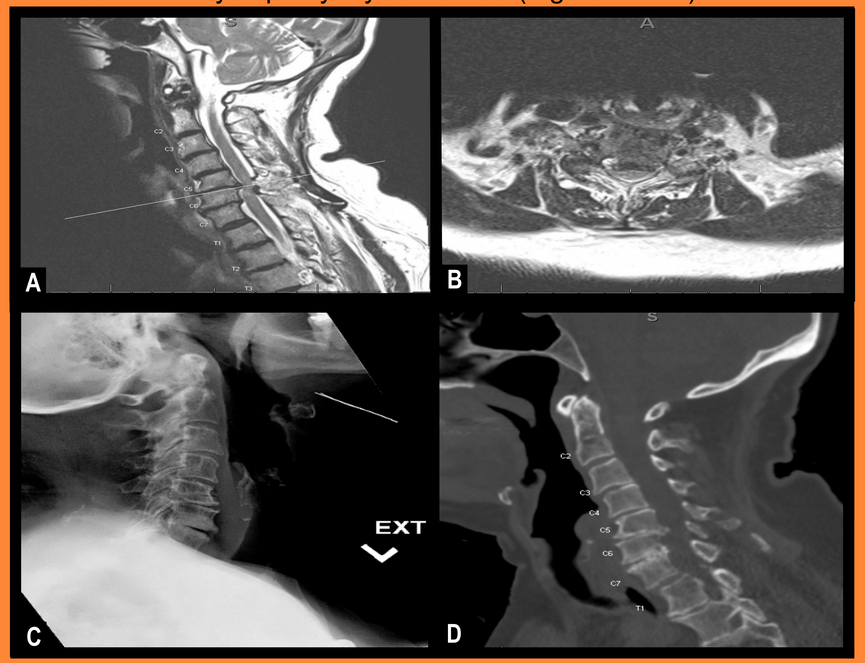
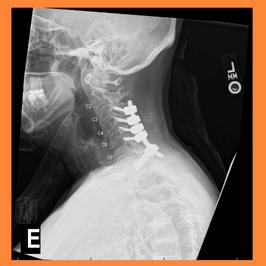


Figure 1: Cervical spine imaging including (A) sagittal T2 MRI and (B) coronal T2 MRI demonstrating myelopathy and myelomalacia C) extension Xray with 2mm C5/C6 mobility, and (D) CT scan with osseous spinal stenosis with C5/C6 retrolisthesis.

Management

- Neurosurgery consulted prompted posterior C5-C7 laminectomy with C3-T1 fusion due to cord compression.



Results and Discussion

Post-operatively, the patient notably had resolution of ankle clonus and Babinski, and improvement in, but not resolution of, her upper extremity tremor. She was admitted for acute inpatient rehabilitation where she progressed from minimal/moderate assist to modified Independent and was discharged home alone utilizing a rolling walker.

While it is rare, several cases of tremor have been identified as presenting complaint of cervical myelopathy and may be considered action induced clonus.[6] Like our patient, patients with tremor from myelopathy are expected to have additional localizing signs which lead to an appropriate workup, diagnosis, and treatment when recognized early.

Conclusion

Given population trends and the personal and economic consequences of delayed diagnosis, clinicians must consider DCM in patients over 50 with neurological complaints, including tremor that aren't adequately explained by alternative diagnosis. Complete medical and functional history, and neurologic exam are all essential in ruling in the diagnosis, and this case underscores their importance even when multiple specialists have already evaluated a patient.

References

1) Badhiwala, J. H., Ahuja, C. S., Akbar, M. A., Witiw, C. D., Nassiri, F., Furlan, J. C., Curt, A., Wilson, J. R., & Fehlings, M. G. (2020). Degenerative cervical myelopathy — update and future directions. *Nature Reviews Neurology*, *16*(2), 108–124. https://doi.org/10.1038/s41582-019-0303-0
2) New, P. W., Cripps, R. A., & Bonne Lee, B. (2014). Errat um: Global maps of non-traumatic spinal cord injury epidemiology: towards a living data repository. *Spinal Cord*, *52*(5), 417. https://doi.org/10.1038/sc.2014.39
3) Nouri, A., Cheng, J. S., Davies, B., Kotter, M., Schaller, K., & Tessitore, E. (2020). Degenerative Cervical Myelopathy: A Brief Review of Past Perspectives, Present Developments, and Future Directions. *Journal of Clinical Medicine*, *9*(2), 535. https://doi.org/10.3390/jcm9020535
4) Pope, D. H., Mowforth, O. D., Davies, B. M., & Kotter, M. R. N. (2020). Diagnostic Delays Lead to Greater Disability in Degenerative Cervical Myelopathy and Represent a Health Inequality. *Spine*, *45*(6), 368–377. https://doi.org/10.1097/BRS.0000000000003305
5) Davies, B. M., Mowforth, O. D., Smith, E. K., & Kotter, M. R. N. (2018). Degenerative cervical myelopathy. *BMJ (Online)*, *360*(February), 8–11. https://doi.org/10.1136/bmj.k186
6) Onder, H., Akkurt, I., Celik, K., & Hamamci, M. (2020). Tremors as an atypical presentation of cervical myelopathy? *Journal of Medical Sciences (Taiwan)*, *40*(3), 145–146. https://doi.org/10.4103/jmedsci.jmedsci_136_19