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A case report of possible misdiagnosis of late onset multiple sclerosis with resurfacing of symptoms in her early eighties

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Abstract---Background: Late onset multiple sclerosis is relatively unusual and there are limited reports regarding the symptoms, progression and treatment. Case presentation: In this case study, we discuss a patient in her early eighties, with late onset multiple sclerosis presumably misdiagnosed of a transient ischemic attack presenting with numbness of her right hand and face that lasted for three months before they spontaneously regressed remaining dormant for almost 30 years. In 2018, a gradual, but progressive difficulty in walking surfaced. An MRI of the spinal cord was performed in 2019 and described without any pathological findings. On admission in our department, radiological examination revealed multiple lesions in the brain and the spinal cord suggesting a demyelinating condition and corresponded with the MRI of the spinal cord performed in 2019. The cerebrospinal fluid analysis revealed oligoclonal bands suggestive of multiple sclerosis. The patient received a three-day course of high dose prednisolone intravenously. On hospital discharge, the patient reported subjective improvement of the symptoms. Improvement of the symptoms was described by the patient at the 1-month follow-up, though no objective improvement was found on neurological

examination. Taking into consideration the age and symptom progression no disease modifying treatment was initiated.

Keywords---late onset multiple sclerosis, multiple sclerosis, misdiagnosis, neuroimmunology.

Introduction

Multiple sclerosis (MS) is a common chronic inflammatory demyelinating condition, predominantly occurring between 20 and 49 years of age ^(1, 2). However, the symptom onset of MS after the age of 50 years has been reported, albeit rare, and is termed as late onset MS (LOMS) ⁽³⁾. LOMS accounts for 1.4% to 9.9% of the MS population across the world ^(4, 5). Previous studies have reported the involvement of the spinal cord in cases of MS after the age of 50 years ⁽⁶⁾. Such cases have been unique, probably as a result of shortcomings in diagnosing the condition per se due to various concurrent diseases more common in the elderly such as vascular diseases, spondylosis neuropathy, peripheral neuropathy and rheumatoid arthritis. Though LOMS has been associated with poor prognosis with a primary progressive course, it is not always necessarily implicated with the worst outcome ⁽⁷⁾. In this case report, we discuss a patient with LOMS, diagnosed with multiple sclerosis at the age of 82 years, with a possible symptom debut misinterpreted for a transient ischemic attack at 52 years of age. The symptoms remained dormant until the age of 81 years before resurfacing.

Case Report

An 82-year-old woman presenting with a gradual, progressive walking disability since 2018, was admitted in our department. The patient had a history of hypertension and hypothyreosis. As for prior hospital admissions, the patient was admitted in 1991 after experiencing numbness of the right hand and face and diagnosed with a probable transient ischemic attack. The symptoms, as per the patient, subsided after a couple of months. No relevant family history was obtained. She had not experienced any kind of neurological dysfunction or gait disturbances before 2018. Since 2018, the patient experienced difficulty in walking as well as gait dysfunctionalities leading to use of assistance such as walking sticks. In 2019, as a follow up of the symptoms, an MRI of the spinal cord was performed and described as normal. No further investigations were initiated at that time. The symptoms gradually worsened since, with rapid deterioration from spring 2020 where the patient had multiple falls due to gait instability and muscle weakness of the lower extremities. In addition, the patient experienced constant numbness of the right hand without any muscle weakness and no hindrance to her daily activities. The patient could knit and use the computer with no difficulties whatsoever.

Neurological Examination

A neurological examination performed at admission to our department showed normal cognition and normal function of the cranial nerves. There was neither dysarthria nor dysphagia. Tandem gait was impossible with reduced stride of both

the lower extremities and speed. The patient used a walking stick to maintain balance. The patient was unable to rise from a chair without help. She complained of pain of the lower extremities which according to her was not a dominating concern. The patient also complained of bilateral paresthesia and pricking sensation of the lower extremities at the L2-3 myotome. Hyperactive bladder function and incontinence was reported while the bowel function was reported normal.

On examination, there was a bilateral reduction of muscle power in flexion of the hips, significant on the left side where she was unable to lift the leg in the absence of resistance. She was able to lift the right leg against resistance (grading of muscle power: 3/5 in the left and 4/5 in the right hip, otherwise 4/5 for the rest of the muscle groups of the lower limbs). Fine motor skills were normal. Significant numbness and loss of sensation at the C5-7 dermatomes of the right hand was observed with the absence of loss of muscle power. Deep tendon reflexes were reduced at the left patella and absent on the right. The Achilles reflex were also absent on both the lower extremities while the plantar reflex was normal. Romberg's test was negative.

Magnetic Resonance Imaging (MRI) findings

An MRI of the brain and spinal cord performed the day after admission in January 2021 revealed an area of high signal intensity supratentorial lesions in the white substance on Multiple T2 weighted/ FLAIR, some of them affecting the corpus callosum or out from the wall of the side ventricles. Two small sized lesions were present on the pons. There was no sign of acute or earlier stroke or small vessel disease. In the spinal cord, four focal lesions were present with high signal intensity on STIR sequences in the spinal cord at the level of C1, C2/3 both to the right and C7/TH12 to the left. No signs of spinal stenosis, prolapse or malignancy were observed. Further, the MRI of the spinal cord from 2019 performed at a different venue was called in for comparison of the findings, as the former was described without any prominent pathological findings. On reinterpretation, the MRI of the spinal cord performed in 2019 showed similar findings, and there were no new lesions from 2019 to 2020.

Magnetic resonance imaging of the caput and spinal cord revealing the lesions

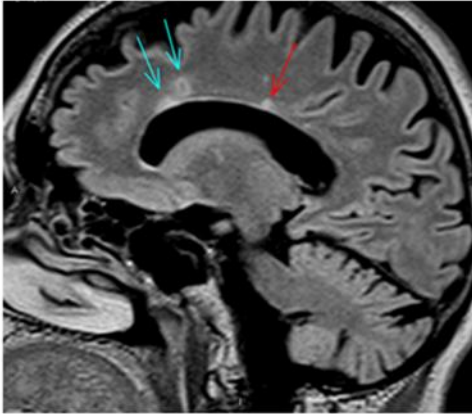


Figure A.

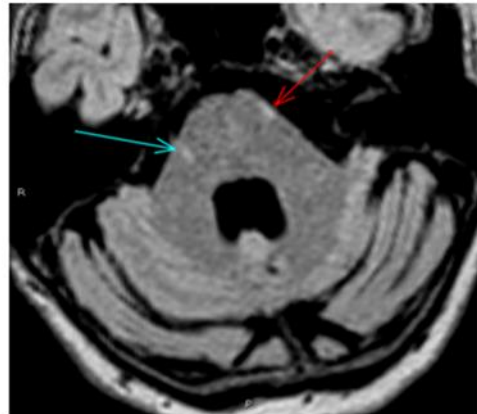


Figure B

Figure A. Multiple FLAIR hyperintense lesions found supratentorial and affecting the corpus callosum. Figure B: Small sized FLAIR lesions present on the pons.



Figure C



Figure D

Figure C: Focal lesions present with high signal intensity on STIR sequences in the spinal cord at the level of C7 on the left and Figure D: Th1 on the right.

Laboratory Data

The cerebrospinal fluid (CSF) analysis revealed elevated immunoglobulin G concentrations and index at 44 mg/dL and 0.70, respectively with normal total protein and glucose levels. Increase in oligoclonal bands (>10) were observed in the cerebrospinal fluid with the absence in the serum indicating intrathecal production of unspecific immunoglobulins. CSF was negative to herpes simplex, varicella zoster and borrelia burgdorferi IgG and IgM.

Discussion

Multiple sclerosis diagnosed at the age of 80 years is rare. The patient in this case study may have had the symptom debut in her early fifties and the symptoms were misinterpreted for a transient ischemic attack (TIA). However, the progress and character of her symptoms since then may not fit the usual TIA symptom criteria. The misinterpretation of the symptoms thirty years ago, and thereafter, misreading of pathological findings on the MRI performed in 2019 excluded MS as a less likely diagnosis in the initial work up of the case. Diagnosing MS may be difficult at times due to the heterogeneity of clinical symptoms overlapping with that of other conditions. Therefore, incorrect assessment of MS diagnosis is not unusual in medical practice. Several studies have shown that 30-67% of MS referrals were determined to not have MS ⁽⁸⁾. Interestingly, very few studies have been done regarding the misinterpretation of MS for another condition. The lack of using MRI as a diagnostic tool in the nineties may be a reasonable answer to the misinterpretation of the early symptoms in this patient. MRI became a vital diagnostic tool after its introduction in the International panel criteria for diagnosing MS in 2001 ⁽⁹⁾. Though devoid of symptoms, a gradual progression of the symptoms has been reported by the patient since 2019. Clinical features of late-onset MS are different from those of early-onset MS. Gradual deterioration of motor function is more prominent and frequent in late-onset MS patients as compared to early onset MS ⁽¹⁰⁾. It has also been suggested that the condition can remain clinically silent for years before resurfacing as observed in this case study ^(11, 12). The lesions demonstrated in the MRI in this case study were crucial and suggested a condition of demyelinating character even though it is uncommon in this age group. Furthermore, no new lesions or alterations in lesions were observed when the MRI's obtained two years apart were compared. The site of predominant involvement in late onset MS has been reported as the spinal cord in older patients ⁽¹³⁾.

Chronic and rapid symptom progression with absence of relapsing-remitting variety are also characteristics of late onset MS ⁽¹⁴⁾. Moreover, patients with late-onset disease were more likely to have a progressive course from onset resulting in a more serious prognosis. The patient in this case study showcases a gradual and progressive course of the disease. Interestingly, the motor function of her upper extremities remains intact as compared to the lower extremities, though sensory irregularities are observed both in the upper and lower extremities. Though asymptomatic for years, the relapse of symptoms in this patient shows a secondary progressive course. In this case report, we emphasise the need to suspect MS in the elderly, taking into consideration the unusual progressive course of the symptoms and homogeneity with other conditions, which may lead to misdiagnosis.

Conclusion

In this case study we emphasize considering multiple sclerosis as a differential diagnosis in the elderly though the homogeneity of the clinical symptoms of multiple sclerosis overlaps with that of other more common conditions present in the elderly.

References

1. Reich DS, Lucchinetti CF, Calabresi PA. Multiple Sclerosis. *The New England journal of medicine*. 2018;378(2):169-80.
2. Thompson AJ, Baranzini SE, Geurts J, Hemmer B, Ciccarelli O. Multiple sclerosis. *Lancet* (London, England). 2018;391(10130):1622-36.
3. Lotti CBdC, Oliveira ASB, Bichueti DB, Castro Id, Oliveira EML. Late onset multiple sclerosis: concerns in aging patients. *Arquivos de Neuro-Psiquiatria*. 2017;75:451-6.
4. Tremlett H, Devonshire V. Is late-onset multiple sclerosis associated with a worse outcome? *Neurology*. 2006;67(6):954-9.
5. Delalande S, De Seze J, Ferriby D, Stojkovic T, Vermersch P. [Late onset multiple sclerosis]. *Rev Neurol* (Paris). 2002;158(11):1082-7.
6. Abe M, Tsuchiya K, Kurosa Y, Nakai O, Shinomiya K. Multiple Sclerosis with Very Late Onset: A Report of a Case with Onset at Age 82 Years and Review of the Literature. *Clinical Spine Surgery*. 2000;13(6):545-9.
7. Guillemin F, Baumann C, Epstein J, Kerschen P, Garot T, Mathey G, et al. Older Age at Multiple Sclerosis Onset Is an Independent Factor of Poor Prognosis: A Population-Based Cohort Study. *Neuroepidemiology*. 2017;48(3-4):179-87.
8. Solomon AJ, Bourdette DN, Cross AH, Applebee A, Skidd PM, Howard DB, et al. The contemporary spectrum of multiple sclerosis misdiagnosis: A multicenter study. *Neurology*. 2016;87(13):1393-9.
9. Polman CH, Reingold SC, Edan G, Filippi M, Hartung HP, Kappos L, et al. Diagnostic criteria for multiple sclerosis: 2005 revisions to the "McDonald Criteria". *Ann Neurol*. 2005;58(6):840-6.
10. Lyon-Caen O, Izquierdo G, Marteau R, Lhermitte F, Castaigne P, Hauw JJ. Late onset multiple sclerosis. A clinical study of 16 pathologically proven cases. *Acta Neurol Scand*. 1985;72(1):56-60.
11. Ghatak NR, Hirano A, Lijtmaer H, Zimmerman HM. Asymptomatic Demyelinated Plaque. *Archives of Neurology*. 1974;30(6):484-6.
12. Gilbert JJ, Sadler M. Unsuspected Multiple Sclerosis. *Archives of Neurology*. 1983;40(9):533-6.
13. Noseworthy J, Paty D, Wonnacott T, Feasby T, Ebers G. Multiple sclerosis after age 50. *Neurology*. 1983;33(12):1537-.
14. White AD, Swingler RJ, Compston DAS. Features of Multiple Sclerosis in Older Patients in South Wales. *Gerontology*. 1990;36(3):159-64.
15. Suryasa, W., Sudipa, I. N., Puspani, I. A. M., & Netra, I. (2019). Towards a Change of Emotion in Translation of Kṛṣṇa Text. *Journal of Advanced Research in Dynamical and Control Systems*, 11(2), 1221-1231.
16. Suwija, N., Suarta, M., Suparsa, N., Alit Geria, A.A.G., Suryasa, W. (2019). Balinese speech system towards speaker social behavior. *Humanities & Social Sciences Reviews*, 7(5), 32-40. <https://doi.org/10.18510/hssr.2019.754>
17. Gandamay, I. B. M., Antari, N. W. S., & Strisanti, I. A. S. (2022). The level of community compliance in implementing health protocols to prevent the spread of COVID-19. *International Journal of Health & Medical Sciences*, 5(2), 177-182. <https://doi.org/10.21744/ijhms.v5n2.1897>