

## Somali woman with multiple sclerosis, a case report

Joyce Pauline Joseph, Suganthi Cinnasami, Md Hanip Rafia

Department of Neurology, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

### Abstract

There is variable prevalence of multiple sclerosis, higher in those residing in latitude away from the equator, and among the Caucasian population. Multiple sclerosis has not been reported in some countries, partly related to access to modern medicine. Although multiple sclerosis has been reported among the Somali diaspora, it has not been reported among the residents in Somalia. We report an adult Somali woman who has relapsing remitting multiple sclerosis for 8 years, affecting the optic nerves, cerebellum and spinal cord.

*Key words:* multiple sclerosis, Somalis

### INTRODUCTION

Multiple Sclerosis (MS) is an immune mediated chronic central nervous system disorder. There are estimated to be 2.3 million people with MS in the world<sup>1</sup>, more common in the females and the young. It is of higher prevalence in latitude away from the equator, and among the Caucasian races. There have been few reports of MS among other African continents.<sup>1</sup> Data was not provided for Somalia in a survey done from 92 countries published in 2013.<sup>1</sup>

Somalia is the easternmost country of Africa. Civil war have destroyed Somalia's economy and infrastructure<sup>2</sup> and a United Nations Population Fund published in 2014 showed a population of 12.3 million.<sup>3</sup>

We report here a case of a Somali woman with MS. We hope there will be more reports on MS from African and other countries that till to date has published few data on MS.<sup>1,4-7</sup>

### CASE REPORT

A 21-year-old Somali woman diagnosed as MS was referred to the Department of Neurology, Hospital Kuala Lumpur for further management. She was born and brought up in Somalia and has been in Malaysia for one year. She was the 6th among 7 siblings and there had been no similar history among any of her relatives. There was no history of consanguineous marriage in her family. No significant past medical history or exposure to toxins was reported. The patient lived in the city with her parents and siblings in Somalia. She gave a history of gait imbalance, frequent falls with

poor vision since age 19 years, but she was still able to ambulate independently. Her symptoms worsened few weeks before she first presented to our clinic. Clinical examination revealed bilateral optic atrophy and cerebellar signs both sides. Visual acuity over the right eye was 3/60 and left eye was 6/60. Upper limb examination was normal. Lower limb examination revealed increased tone, weakness with hip abduction of MRC grade 4/5 and adduction 5/5, knee flexion and extension of 3/5 bilaterally, ankle flexion and extension of 4/5 in both legs. The Babinski reflex was extensor both feet. There were no abnormalities in other system. Blood and other systemic investigations including screening for collagen disease such as C3C4, anti-dsDNA, anti-nuclear antibody, thyroid function test were normal. Aquaporin 4 antibody test was negative. In the cerebrospinal fluid examination, oligoclonal Band was positive and visual evoked potential demonstrated abnormal anterior visual pathway abnormalities in both eyes. MRI of brain and spine done showed hyperintense signals in T2 and FLAIR at deep and subcortical white matter at corona radiata, centrum semiovale, corpus callosum, midbrain, left cerebellar peduncle, pons and both cerebellum. Patchy cord lesions were seen at C2, C4.C6, T9, T11 and T12 on T2W1 and FLAIR. There was no enhancing lesions. She was diagnosed as relapsing remitting MS based on the 2005 McDonald criteria. Beta interferon alpha 1a 44 mcg was commenced and continued for 10 months. There were treatment interruption due to financial constraint but recommenced after another year.

She had a relapse with acute transverse myelitis at age 23 years, with lower limb weakness of MRC grade 0/5 bilaterally. There was worsening of bladder dysfunction. She was given methylprednisolone for 5 days and regained muscle strength to 3/5 after a few weeks.

When last seen at age 27 years, she has had a total of 6 relapses over the 8 years of illness. The systems involved were the optic nerve, spinal cord and cerebellum. On last examination, she was fully dependent for all her activities of daily living, was on a wheelchair, had dysarthria, and rarely spoke. There was bilateral optic atrophy with visual acuity of finger counting both eyes. The muscle tone was increased and upper limb power was 4/5 bilaterally and lower limb muscle strength was 0/5 on the right and 1/5 on the left. Deep tendon reflexes were brisk and Babinski's were extensor. Both upper limbs were ataxic.

Beta interferon was discontinued at age 23 years after the acute transverse myelitis. This was partly due to financial constraints, as the treatment was from out of pocket payment. She was not given other immunomodulatory therapy.

## DISCUSSION

We believe this patient has relapsing remitting MS. She has central nervous system disease that is disseminated in space and time, with no evidence of other known disease over 8 years period. She fulfilled the MacDonal criteria 2005 and 2010 for MS.<sup>8-9</sup> Despite the bilateral optic atrophy which are mainly seen in neuromyelitis optica spectrum disease, her AQP4 antibody is negative, CSF oligoclonal band positive, and the MRI brain and spine are more in keeping with the classical MS. (Figure 1, 2)

The United Nations Development Programme estimates that about 14% of Somali populations of more than a million live outside Somalia as a diaspora. Kenya, Ethiopia Djibouti, South Africa, in Africa; Yemen in Middle East; United States and Canada in North America; United Kingdom, Netherlands, Norway, Sweden, Switzerland, Denmark, Germany, and Italy in Europe are some of the countries that Somalis now live.<sup>10</sup> Database search from PubMed, Google Scholar and Scopus, did reveal Somali MS patients from Sweden, Norway and Kuwait among Somali immigrants

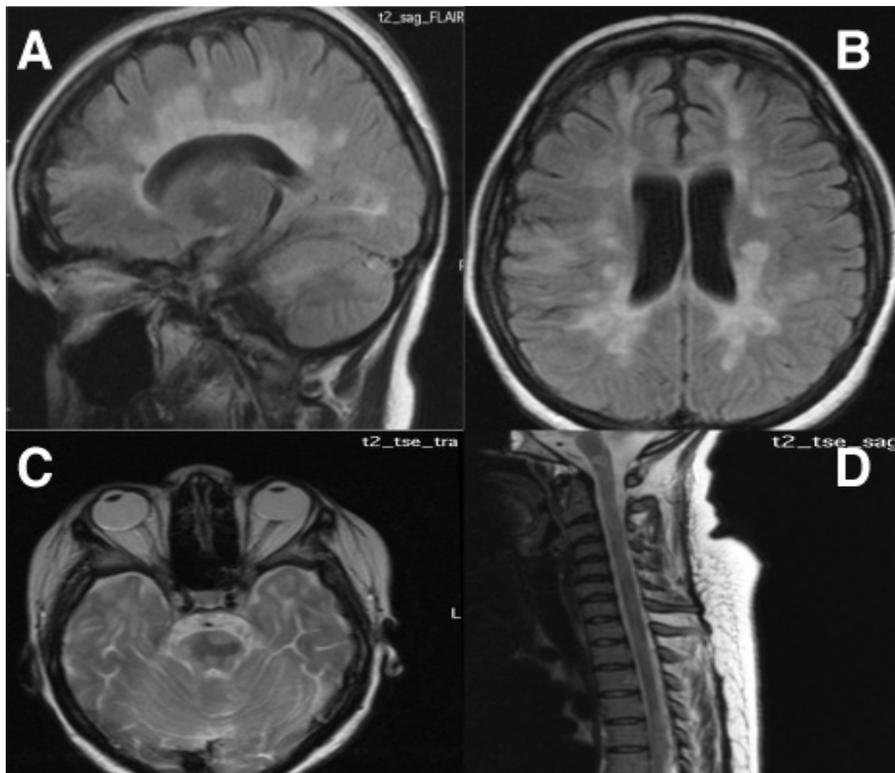


Figure 1. MRI FLAIR images showing periventricular, subcortical and juxtacortical lesions in axial and sagittal views. (A,B, B) Axial MRI brain T2W images showing infratentorial lesions (C). MRI Spine showing patchy short segment lesions (D).

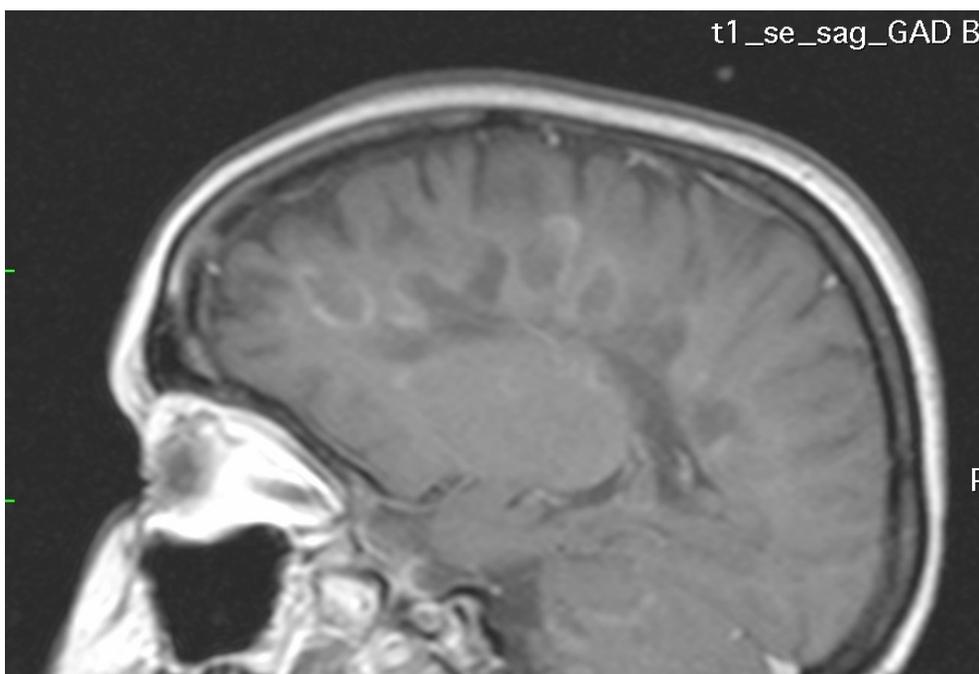


Figure 2. MRI brain T1WI sagittal images showing enhancing and non-enhancing lesions

to these countries.<sup>11-13</sup> However, there has been no previous resident of Somalia reported with the disease. Berg-Hansen *et al.* studied Norwegian immigrant population on prevalence day January 1, 2012. Among the 20,976 first generation Somali immigrants, 5 had MS. The mean duration of residence in Sweden of these patients was 8.2 years. Among the 8,419 Somali second generation immigrants, there were also MS patients found (fewer than 5 patients), and the mean age of these patients were 6 years. Ahlgren *et al.* reported the MS prevalence among the immigrant population in Sweden on prevalence day 31st December in 2008. They found 2 immigrants from Somalia to have MS, both were female. No clinical details were provided in the Swedish and Norwegian reports.<sup>11,12</sup> Al-Din in 1986 reporting the MS epidemiology in Kuwait, also included one Somali male among their patients. There was no clinical detail given for this Somali patient.<sup>14</sup>

Although we could not find any previous report of MS among the residents in Somalia, the Norwegian study of the first generation immigrants would indicate that MS is not uncommon among Somalis, the prevalence of MS may fall in the range of 20/100,000 population. One of the reasons that MS was not well documented in Somalia could be because of poor healthcare system. Somalia is one of the poorest countries in the world in terms of income per capita.<sup>3</sup> The

economic and health status of Somalia has been aggravated by prolonged and ongoing conflict. Life expectancy at birth for male is 51 years and female is 55. The ratio of Physician to patients are 0.3/10 000<sup>3</sup> with poor access to healthcare. There is no neurologist in Somalia.

In conclusion, this is the first reported case of MS in a Somali woman resident in Somalia. The patient presented with relapse remitting MS. She fulfilled the 2005 and 2010 McDonald criteria for MS<sup>8-9</sup> and has positive cerebrospinal fluid oligoclonal band.

## DISCLOSURE

Conflict of interest: None

## REFERENCES

1. Atlas of MS 2013. Mapping multiple sclerosis around the world. Multiple Sclerosis International Federation. 2013. [www.msif.org](http://www.msif.org)
2. Encyclopedia Britannica. [www.britannica.com](http://www.britannica.com). Last Update 29.12.2014
3. Population estimation survey 2014. For the 18 pre-war regions of Somalia. October 2014. United Nations Population Fund, Somalia Country Office.
4. Goldstein B. Two cases of disseminated sclerosis in African natives. *East Afr Med J* 1946; 23:170-3.
5. Dean G. Disseminated sclerosis in South Africa. *BMJ* 1949; 1:842-4.
6. Cosnett JE. Multiple sclerosis and neuromyelitis optica. *S Afr Med J* 1981; 60:249-51.

7. Bhigjee AI. Multiple sclerosis in a black patient. A case report. *S Afr Med J* 1987; 72:873-5.
8. Polman CH, Reingold SC, Edan G, *et al.* Diagnostic criteria for multiple sclerosis: 2005 revisions to the “McDonald Criteria. *Ann Neurol* 2005; 58(6): 840-6.
9. Polman CH, Reingold SC, Banwell B, *et al.* Diagnostic criteria for multiple sclerosis: 2010 Revisions to the McDonald criteria. *J Neurol Neurosurg Psychiatry* 2013; 84(8): 909-14.
10. Sheikh H, Healy S. Somalia’s missing million: The Somali diaspora and its role in development. UNDP Somalia. March 2009.
11. Ahlgren C, Odén A, Lycke J. A nationwide survey of the prevalence of multiple sclerosis in immigrant populations of Sweden. *Mult Scler* 2012; 18 (8): 1099–107.
12. Berg-Hansen P, Moen SM, Sandvik L, *et al.* Prevalence of multiple sclerosis among immigrants in Norway. *Mult Scler* 2015; 21(6):695–702.
13. Al-Din ASN. Multiple sclerosis in Kuwait: clinical and epidemiological study. *J Neurol Neurosurg Psychiatry* 1986; 49:928-31