Clinical Aspects of Multiple Sclerosis Patients with Normal Spinal Cord Imaging

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OBJECTIVES
To evaluate the clinical aspects of multiple sclerosis patients with normal spinal cord imaging.

BACKGROUND
Multiple sclerosis (MS) is an autoimmune disorder that affects both the brain and spinal cord in the vast majority of patients. However, approximately 10% of MS patients have no spinal cord involvement at autopsy. The clinical characteristics of this population have not been well studied.

METHODS
We retrospectively reviewed our MS database and selected patients who have had 1.5 Tesla MRIs of brain, cervical and thoracic spine. From this cohort, we selected the patients who have had normal spinal cord imaging over time and studied their demographics, clinical characteristics and outcome (Table 1).

RESULTS
We had 30 patients (13%) without evidence of spinal cord lesions on MRI selected from a total of 225 MS patients. The mean age of those patients was 55.4. There were 28 women and 2 men. Twenty-nine patients had Relapsing Remitting MS (RRMS) and one patient had Clinically Isolated Syndrome. The mean disease duration was 17 years, median was 12.5 years. Twelve patients had unchanged EDSS scores, 8 patients had improved and 10 patients had worsening of their EDSS (Figure 1) over a mean follow-up of 4.6 years. We had an average of 2.6 cervical and 2 thoracic MRIs per patient during their follow-up. Fifteen patients were not on any treatment during this period of time (Figure 2); of these, 11 demonstrated stable or improved EDSS (Figure 3). The other half were on different disease modifying agents, 9 of them with stable or improved EDSS (Figure 4).

CONCLUSIONS
In our center, thirteen percent of the MS patients had normal spinal cord imaging, with exclusive cerebral involvement. These patients were predominantly women with RRMS. They had less physical disability overtime, with 2/3 of them having unchanged or improved EDSS despite lack of a specific treatment in more than half of this group.