



A Case Report of Spinal Multiple Sclerosis

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Abstract

Spinal MS refers to the presence of lesions in the spinal cord in a patient diagnosed with MS. Here we present a case of 44 yr old female presenting with asymmetric upper motor neuron type paraparesis with sensory, autonomic disturbance and radiological evidence suggestive of exclusive spinal multiple sclerosis.

Introduction

Virtually everyone with multiple sclerosis (MS) has signs of lesions in the brain, as shown by magnetic resonance imaging (MRI) scans. In fact about 95 percent of people with MS show brain lesions at the time of their diagnosis.

But the brain isn't the only area where lesions can develop — MS can also attack the spinal cord. Because finding these lesions involves more-elaborate imaging tests, spinal cord lesions in MS are studied less often, and many people with MS aren't aware of the role these lesions may play in the disease process

Case Report

44yr old female working as a nursing assistant with no significant personal past or family history presented with backache for past 3 months which was aggravated during exertion relieved with analgesics.

Since 1month she had shooting type of sensation across the back of thigh while bending forwards .These complaints were continuing till two week back, when she had felt weakness of left lower limb including proximal and distal muscles associated with urinary incontinence and paraesthesia. But she was able to appreciate all the normal sensations. She also felt band like sensation over the level of umbilicus.

General examination including her vitals were normal. There was no neurocutaneous markers. On neurological examination higher mental function and all cranial nerves including fundus was normal. On motor examination, bulk was normal bilaterally. Tone was increased in both lower limb with decreased power in left more than right. All deep tendon reflexes were exaggerated bilaterally with absent abdominal reflex and extensor plantar. Gait was spastic type. There was no coordination abnormality. Also found to have

hyperesthesia below the level of xiphisternum and whole of left side of lower limb. Skull and spine seems normal. All other system examination revealed normal findings.

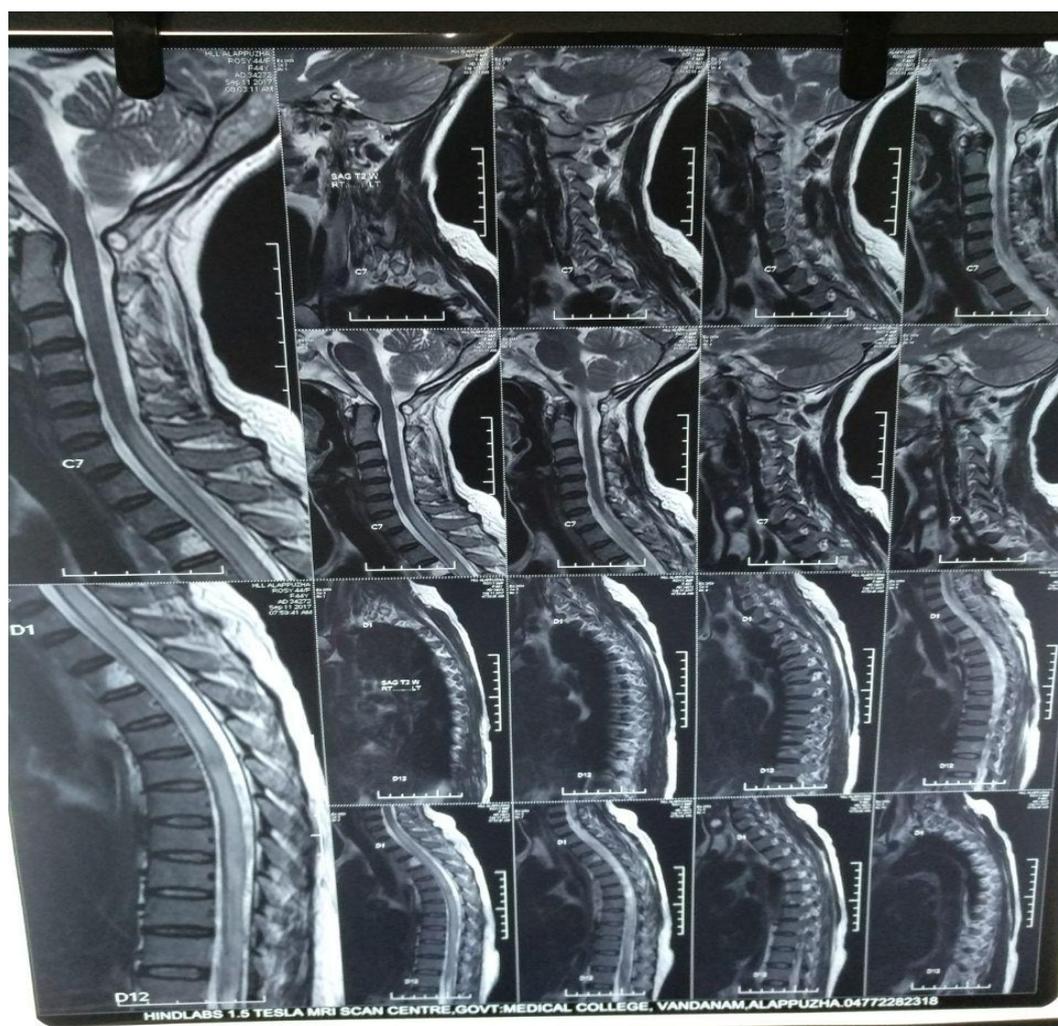
On Investigations routine blood investigation, CRP and viral markers were normal. Mantoux was negative. Chest x ray, USG abdomen, ECHO Cardiology, Head and MRI brain reveals no pathological changes.

MRI spine done found to have thick ring enhancing lesions with irregular margins involving the thoracic spinal cord at t6, t8, t9 and t11 levels isointense on t2w. Diffuse intramedullary t2 hyper intensity of the spinal cord noted extending from c6- c7 to lower end of the conus suggestive of oedema and provisional diagnoses was spinal cord metastasis. After routine screening we couldn't find any primary, So CSF study was done. Cytology showed

negative for inflammatory or neoplastic cells. Incidentally CSF protein was elevated. But oligoclonal bands was negative. Patient gradually improved after 1 month with steroids in view of demyelinating disease.

Repeat MRI was taken which showed the ring enhancing lesions of previous scan were resolved and suggestive of demyelination. ANA (anti nuclear antibody) profile, APLA (antiphospholipid antibody), Anti aquaporin 4 antibody all were negative. ACE (angiotensin converting enzyme) level was normal. Visual evoked potential were normal.

Possible Clinical diagnosis of Spinal ms -subacute cord compression type was made. It was confirmed when patient developed left side upper limb weakness with MRI showing similar lesions in c5 c6 level after 5 months of the previous lesions.



Pre-Treatment T2 Image



Pre-Treatment T1 Contrast



Post-Treatment T2

Discussion

The lesions caused by multiple sclerosis can occur anywhere within the central nervous system which includes the brain, the spinal cord, and the optic nerves. Approximately 55-75 percent of patients with MS will have spinal cord lesions at some time during the course of their disease. If a patient does have lesions in the spinal cord, he/she may be said to have Spinal MS. A smaller number of MS patients, approximately 20%, may have only spinal lesions and not brain lesions. Our patient came to be in this isolated spinal MS.

Spinal MS occurs more commonly with lesions in the cervical spine (the neck area) in approximately 67% of cases. Lesions in this area often affect the corticospinal tract. Neurological signs which indicate lesions in the corticospinal tract include the Babinski Sign and the Hoffmann Sign. Additional indicators of lesions in the upper spine include the 1^o Hermittes phenomenon and the Romberg Sign.

Motor weakness commonly occurs in people with spinal cord lesions in MS, causing weakness bilaterally, which mostly affects the legs. Deep tendon reflexes are increased, causing spasticity, a painful increase in muscle tone. Hemiplegia, paralysis on one side of the body, can occur from lesions in the cervical spinal cord. Paraplegia, paralysis below the waist, or quadriplegia, loss of sensation and paralysis below the neck, may also affect people with spinal cord lesions. A person with spinal cord lesions may have difficulty maintaining balance, or may have a stiff-legged gait. Ataxia, or the inability to walk a straight line, may also occur.

Paresthesia, or numbness and tingling sensations, may occur in people with spinal cord lesions in MS, and may be localized to just one area, such as the hands or legs. Sensation may be lost over the shoulder and upper arms in a cape-like pattern. A loss of sensation in a band-shaped pattern around the middle of the abdomen may cause paraplegia. Burning or shock-like sensations may occur spontaneously or if the spinal cord is touched.

Flexing the neck may elicit Lhermitte's sign, an electric shock down the spine or into the legs.

Spinal cord lesions in MS can cause a number of genito-urinary difficulties, including impotence, fertility issues, or loss of sensation in the genitals or problems with vaginal lubrication in women. Urinary retention, urgency, hesitation or incontinence may affect patients.

Constipation commonly affects people with spinal cord lesions in MS, but complete loss of bowel control occurs only rarely.

It is "not uncommon to discover multiple silent brain lesions" on MRI scans in a patient who is affected primarily with problems related to the spinal cord. These symptomatic spinal cord lesions are [often] more difficult to identify on [MRI] scans than some clinically quiet brain lesions.

There are three main patterns of clinical presentation of cord lesions in multiple sclerosis. In order of ascending severity these are the neuropathic type, subacute compression type and acute transverse myelitis

In neuropathic type sensory symptoms predominate and consists of finetinging peripheral paraesthesia. These may be spontaneous or provoked by touch. They are similar to the symptoms occurring at the onset of a peripheral neuropathy. But in MS the reflexes are not only preserved but are almost invariably extremely brisk, the abdominal reflexes may be absent and the plantar responses may well be extensor, even in those patients without definitive motor symptoms. This type of presentation is frequently associated with Lhermittes phenomenon. Neuropathic type of spinal multiple sclerosis occurs in the 18—30 age group, and often heralds the onset of the disease, but many patients never develop any other manifestations.

In sub acute cord compression type the mode of onset is very similar to progressive cervical myelopathy and is highly likely that some cases of this condition are actually a variant of multiple sclerosis, occurring in an older age group. Some patients with history of previous attacks of the

disease and clear evidence of multiple sclerosis in other areas of the central nervous system develop a slowly progressive spastic paraparesis, manifest as stiffness affecting one or both legs over a period of months or years. There may be no new sensory symptoms and the picture becomes essentially an asymmetrical progressive spastic paraparesis.

Transverse myelitis is an inflammation of both sides of one section of the spinal cord. Patient will have bilateral UMN motor signs and symptoms, sensory and autonomic disturbance. Transverse myelitis can occur at any age. A peak in incidence rates appears to occur between 10 and 19 years and 30 and 39 years. Symptoms typically develop over the course of hours or days and may progress after weeks.

Conclusion

If you read the phrase “spinal MS,” know that it simply refers to the presence of lesions in the spinal cord in a patient diagnosed with MS. These lesions may cause various types of sensory and motor dysfunction below the level of the spinal cord involvement.

In our patients most of the above mentioned motor, sensory and autonomic symptoms was there with radiological evidence suggestive of demyelination in spinal levels with normal MRI brain and with no features suggestive of optic neuritis. Criteria for multiple sclerosis was satisfied. so possible diagnosis of spinal multiple sclerosis was made probably of sub acute cord compression type.