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Tuberculosis and Quadriparesis: Something other than Pott's

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Abstract

A 23 year-old man treated with anti-tubercular therapy to describe a case of a Guillain-Barré syndrome with pulmonary tuberculosis as an inciting agent. Pulmonary tuberculosis causing Guillain-Barré has very few case reported. However it is one of the few causes of a quadriparesis which can show recovery if managed appropriately. He developed no further complications and his condition improved clinically.

Keywords: Tuberculosis • Guillain-Barre • Quadriparesis • Water

Introduction

Guillain-Barre syndrome is the most frequent cause of acute flaccid paralysis worldwide and constitutes one of the serious emergencies in neurology. Immunopathogenesis of the Guillain-Barre syndrome suggests that the disease actually encompasses a group of peripheral nerve disorders. Subtypes are described based on electrophysiological patterns, the most common being Acute Inflammatory Demyelinating Polyneuropathy (AIDP) and rarer ones being Acute Motor Axonal Neuropathy (AMAN) and acute motor and sensory axonal neuropathy (AMSAN). Many antecedent infections have been identified as a cause of GBS including-Campylobacter jejuni, cytomegalo virus mycoplasma pneumonae, epstein barr virus and influenza virus. Advances in the past century include investigating the immune-mediated pathophysiology of the disease, recognizing the spectrum of presentations, advancing diagnostic modalities, prognostic models, and performing randomized trials of treatments to improve outcome. Given the morbidity that can occur without treatment, all physicians should have a knowledge of this rare disease. A 23 year-old man with a history of pulmonary tuberculosis diagnosed one week back and treated with anti-tubercular therapy presented with weakness of all four limbs. Electrolyte disturbances were ruled out. MRI spine showed no abnormalities. Cerebrospinal fluid analysis showed albumino-cytological dissociation [1]. Nerve conduction studies showed an axonal form of neuropathy. Hence based on the clinical presentation, laboratory investigations and MRI findings a diagnosis of Guillain-Barré syndrome was made and treated appropriately.

Case Presentation

A 23 year-old man presented to the emergency department with complaints of weakness of both the upper and lower limbs for about ten days [2]. The weakness had started from the left lower limb and then progressed to involve the right lower limb and upper limbs. The patient had been symptomatic for pulmonary tuberculosis for about a month after which he was diagnosed and treated with anti-tubercular therapy. At the time of presentation he had completed four days of anti-tubercular therapy [3-5].

Results and Discussion

Patient had no other comorbid conditions. On admission his muscle power was 4/5 in the upper limbs and 2/5 in lower limbs with global hyporeflexia and hypotonia. Sensations were diminished more in the lower limbs in a symmetric distribution and he showed no involuntary movements [6,7]. Hypokalemia and other electrolyte disturbances were ruled out and all other routine blood investigations were within normal limits. MRI and CT of the brain and spinal cords howed no significant abnormalities ruling out the possibility of Pott's spine (Figure 1) [8-10].

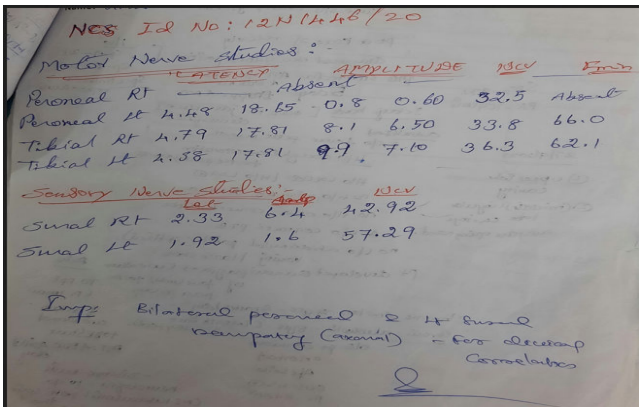

Figure 1. MRI and CT of the brain and spinal cord.

Cerbrospinal fluid analysis showed elevated albumin levels of 100 mg/dl and reduced cell counts consistent with the pattern of albumino-cytological dissociation [11-13]. Nerve conduction studies showed evidence of bilateral peroneal and left sural neuropathy in the axonal form (Figure 2).

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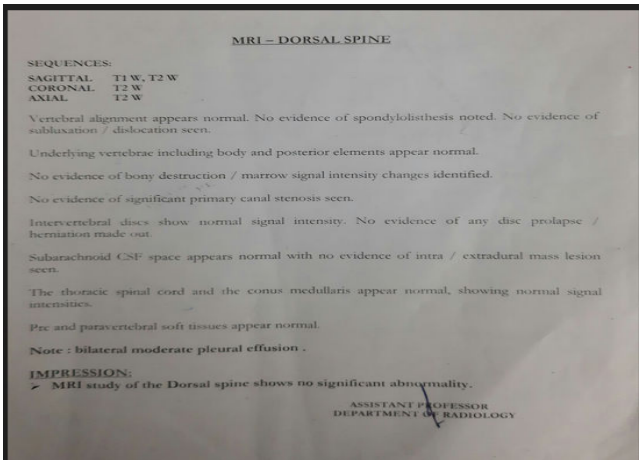
MRI – DORSAL SPINE

SEQUENCES:

SAGITTAL T1 W, T2 W
CORONAL T2 W
AXIAL T2 W

Vertebral alignment appears normal. No evidence of spondylolisthesis noted. No evidence of subluxation / dislocation seen.

Underlying vertebrae including body and posterior elements appear normal.

No evidence of bony destruction / marrow signal intensity changes identified.

No evidence of significant primary canal stenosis seen.

Intervertebral discs show normal signal intensity. No evidence of any disc prolapse / herniation made out.

Subarachnoid CSF space appears normal with no evidence of intra / extradural mass lesion seen.

The thoracic spinal cord and the conus medullaris appear normal, showing normal signal intensities.

Pre and paravertebral soft tissues appear normal.

Note : bilateral moderate pleural effusion .

IMPRESSION:

➢ MRI study of the Dorsal spine shows no significant abnormality.

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Figure 2. Laboratory investigations and MRI findings a diagnosis of Guillain-Barré syndrome.

Based on the clinical presentation, laboratory investigations and MRI indings a diagnosis of Guillain-Barré syndrome was made [14,15]. He was treated with anti in lammatory measures appropriately and his muscle power, tone and re lexes showed improvement. MRI is the criterion gold standard for evaluating disk-space infection and osteomyelitis of the spine and is the most effective for demonstrating the extension of disease into soft tissue and the spread of tuberculous debris under the anterior and posterior longitudinal ligaments. MRI is also called the most effective imaging study for demonstrating neural compression. MRI findings useful to differentiate tuberculosis spondylitis from pyogenic spondylitis include thin and smooth enhancement of the abscess wall and well-defined paraspinal abnormal signal, whereas thick and irregular enhancement of abscess wall and ill-defined paraspinal abnormal signal suggest pyogenic spondylitis. Thus, contrast-enhanced MRI appears to be important in the differentiation of these two types of spondylitis.

Conclusion

The diagnosis of Pott's spine in a patient with tuberculosis is very common and probably the most thought of. But here we present a case of Guillain-Barre syndrome with a reasonable temporal association with the onset of pulmonary tuberculosis suggesting a probable relationship between the two. The pathogenesis of GBS is believed to be immune-mediated. Molecular mimicry leading to autoimmunity and damage to nerves is also a possibility. A diagnosis of Guillain-Barré should always be thought of even though Pott's spine is a more obvious diagnosis because early intervention could help in recovery.

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