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Diagnostic challenge of CIDP in a patient with cervical myelopathy and lumbar HIVD

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Introduction

Chronic inflammatory demyelinating polyradiculoneuropathy (CIDP) is an autoimmune disorder that affects peripheral nerves, causing motor weakness, and sensory deficits. Similar clinical symptoms can also be caused by conditions like multilevel herniated intervertebral disc (HIVD) or spondylotic myelopathy, which also affect the nerve roots or spinal cord. Identifying the underlying cause can be challenging. We report a rare case of a patient with CIDP, cervical myelopathy and lumbar HIVD, emphasizing the importance of recognizing and addressing co-existing neurological conditions.

Case

A 70-year-old female with progressive motor weakness and neuropathic pain in her whole limbs was transferred to the Department of Rehabilitation Medicine at a university hospital. Her symptoms initially began 10 months ago, starting in both upper limbs and left lower limb. After the onset of symptoms, she visited the local spine clinic, and magnetic resonance image (MRI) revealed L4-5, L5-S1 HIVD and C5-6 spondylotic myelopathy (Figure 1). She received posterior decompression and instrumentation at L4-5-S1 and anterior interbody fusion at C5-6-7 within 1 month of the onset of symptoms. Despite the surgical operation, her symptoms persisted, and electrodiagnostic studies were first performed 9 months after symptom onset (Table 1). Nerve conduction studies (NCS) revealed a delayed distal motor latency, decreased motor conduction velocity, and delayed or absent F wave latency of both median and ulnar nerves and left peroneal and posterior tibial nerves. The H reflex of the left posterior tibial nerve also showed no response. Electromyography (EMG) revealed denervation potentials and polyphasic motor unit action potentials in the left gastrocnemius muscle and left tibialis anterior muscle. She was diagnosed with CIDP and treated with methylprednisolone 500mg for 1 day (due to high serum glucose level), intravenous immunoglobulin for 5 days, and azathioprine 50mg/day, followed by physical and occupational therapy. At the time of transfer to the Department of Rehabilitation Medicine, she had decreased muscle strength in both upper and lower limbs (Table 2). Light touch and pinprick sensation were decreased in the L5 dermatome. Proprioception was decreased in both lower limbs. Deep tendon reflex showed areflexia in all limbs. She was ambulating using a wheelchair (Berg Balance Scale 5/56). She had suffered lancinating pain in her whole limbs (NRS score: 5/10). After ten days of treatment, her lower limb muscle strength slightly improved (Table 2), and neuropathic pain nearly disappeared (NRS score: 2/10) after taking pregabalin 75mg twice a day.

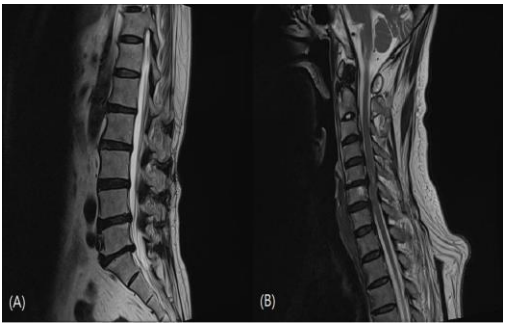

Figure 1. T2-weighted MRI revealed L4-5, L5-S1 HIVD (A) and C5-6 compressive myelopathy (B).

Table 1. Results of Nerve conduction study

Motor nerve conduction study								
	Right				Left			
	Latency(ms)	Amplitude(mv)	Conduction velocity(m/s)	F-wave latency(ms)	Latency(ms)	Amplitude(mv)	Conduction velocity(m/s)	F-wave latency(ms)
Median	6.4*/11.3	7.8/5.3	42.8*	36.2	7.4*/12.0	2.3*/2.4*	46.7*	NR
Ulnar	4.2*/8.9	8.4/7.2	45.7*	33.5	4.7*/9.5	4.7*/1.9*	41.6*	32.7
Peroneal					7.5*/14.5	2.6*/1.8*	41.4*	55.9
Tibial					10.2*/20.4	4.3*/2.7*	34.3*	59.3
Sensory nerve conduction study								
	Right				Left			
	Latency(ms)	Amplitude(uv)	Conduction velocity(m/s)		Latency(ms)	Amplitude(uv)	Conduction velocity(m/s)	
Median	4.2*	22.6	28.5*		3.6*	28.8	36.1*	
Ulnar	3.4*	21.4	30.8*		3.1*	19.2	35.4*	
Sural					NR	NR	NR	

* : Abnormal data, NR : No response

Table 2. Changes in MRC scores in the patient

	10 months after symptom onset (At the time of transfer to the department of rehabilitation medicine)		10 days after treatment (At the time of discharge)	
	Right	Left	Right	Left
Elbow flexor	3	3	3	3
Wrist extensor	3	3	3	3
Elbow extensor	3	2	3	2
Finger flexor	3	3	3	3
Finger abductor	3	3	3	3
Hip flexor	3	2	4	3
Knee extensor	4	3	4	4
Ankle dorsi flexor	4	3	4	4
Great toe dorsi flexor	4	3	4	4
Ankle plantar flexor	4	3	4	4

Conclusion

We report a rare case of CIDP mimicking clinical symptoms of spinal diseases. Clinicians must recognize that patients with a confirmed spinal lesion may have co-existing neurological abnormality. Therefore, we suggest that performing NCS/EMG to rule out any overlapping neurological disorders is necessary.