

## Acute Motor Axonal Neuropathy Combined with Acute Disseminated Encephalomyelitis

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Acute motor axonal neuropathy (AMAN) is a subtype of Guillain-Barre syndrome and characterized by selective involvement of motor fibers. Acute disseminated encephalomyelitis (ADEM) is a demyelinating disease of central nervous system. The coincidence of central and peripheral nervous system involvement has been reported rarely. We described a 37-year-old male patient presented with fever and altered consciousness. The examination of cerebrospinal fluid and brain magnetic resonance imaging was compatible with acute disseminated encephalomyelitis. Several days after admission his mentality was improved but quadriplegia, multiple cranial neuropathies, and areflexia were detected. Electrophysiologic studies suggested axonal form of motor dominant polyneuropathy. We report a case of acute motor axonal neuropathy combined with ADEM. We consider that this case is an example of simultaneous immunologic process to the common pathogenic epitope of central nervous system and peripheral nervous system.

**Key Words:** Encephalomyelitis, Acute disseminated, Acute motor axonal neuropathy

(Acute Disseminated  
Encephalomyelitis, ADEM) Guillain-Barre

가 37 , 3  
,  
3,4 가  
(Acute Motor Axonal Neuropathy,  
AMAN) Guillain-Barre 140/90 mmHg, 108 / ,  
가 ADEM 38 .  
가 , 3 mm ,  
가 9  
37 ADEM 가  
, 가  
(Babinski)  
(ankle clonus)

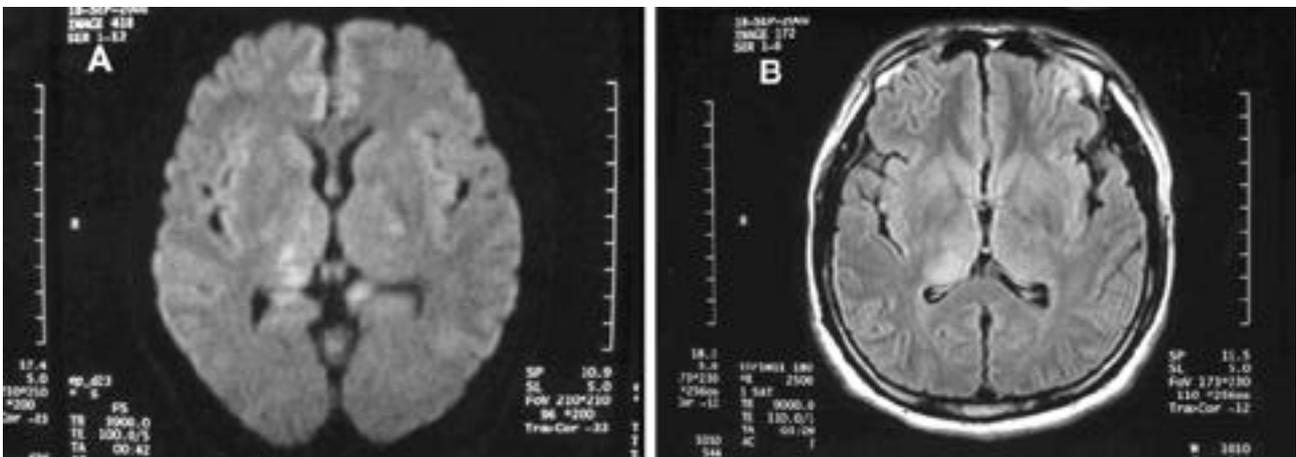
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, VDRL AIDS  
herpes virus cytomegalovirus,  
measles virus, varicella zoster virus IgM  
160 mmHg,  
가 86/mm<sup>3</sup> ( 4%,  
96%), 1/mm<sup>3</sup>, 85.2 mg/dl 가

61 mg/dl, Grade I, Grade I  
 102 mg/dl, Herpes virus PCR, Grade I  
 Tuberculous PCR, Oligoclonal IgG  
 band 가 가 (Myelin Basic  
 Protein) 8.0 ng/ml 가 . widal  
 O 1:160, H 1:320  
 5~6 Hz  
 가  
 T2WI FLAIR, Diffusion  
 Weighted Image (DWI) 가  
 (Table 1).  
 (Fig. 1).  
 3 (1g/day, methylpred-  
 nisolone) X-  
 38  
 F-wave  
 , H-reflex  
 (Table 1).  
 3  
 grade II, grade I, grade IV,  
 grade I  
 Guillain-Barre 가  
 5  
 2 ADEM  
 MRC grading Grade III, (monophasic)



**Figure 1.** Brain MRI. Bilateral. Rt side prominent, thalamic high signal intensity on Diffusion MR imaging (A), and T2-weighted MR imaging (B)

**Table 1.** Nerve conduction study

	Day 14		Day 3 months	
	NCV	Amplitude	NCV	Amplitude
<b>Motor nerve conduction</b>				
Median nerve (Lt)			3.42 ms	
terminal latency	3.0 ms		51.3 m/s	1.95 mV
wrist- elbow	55 m/s	1.229 mV	23.2 ms	
F-wave				
Ulnar nerve (Lt)				
terminal latency	2.6 ms			3.04ms
wrist - B.E	58 m/s	4.018 mV	52.4 m/s	4.96mV
B.E-A.E	67 m/s	4.037 mV	46.5 m/s	4.42mV
F-wave			30.5 ms	
Post tibial nerve (Rt)				
terminal latency	4.5 ms		3.50 ms	
knee-ankle	43 m/s	1.146 mV	45.9 m/s	1.32 mV
F-wave			49.2 ms	
H-reflex			NR	
Peroneal nerve (Rt)				
terminal latency	3.5 ms			NR
knee-ankle	50 m/s	0.602 mV	NR	NR
F-wave				NR
<b>Sensory nerve conduction</b>				
Median nerve (Lt)				
Finger-Wrist	60 m/s	44.38 uV	41.8 m/s	30.8 uV
Ulnar nerve (Lt)				
Finger-Wrist	55 m/s	43.08 uV	39.7 m/s	39.0 uV
Sural nerve (Rt)				
Lat.malleolus-Calf	47 m/s	16.21 uV	35.1 m/s	22.1 uV

NCV: Nerve Conduction Velocity, NR: No Response  
 B.E: Below Elbow, A.E: Above Elbo

가 ADEM , F - wave, 1,5,12  
 ADEM AMAN  
 Campylobacter jejuni GM1 8  
 , MRI T2 , AMAN 7  
 FLAIR, DWI , 가 , 2 , 가 ,  
 가 가가 , oligo- EMG  
 clonal band Ig G band 가 (motor axonal polyneuropathy)  
 steroid 가 GBS  
 1,5 ADEM , , Guillain -Barre  
 6 (AMAN) 1986 Feasby  
 GBS , Mckhan .  
 7 GBS  
 - 가 , , GBS 가

ganglioside (GM1, GD1a, GQ1b)  
 Campylobacter jejuni 가

(Critical illness polyneu-  
 ropathy, CIP) CIP

CIP (cranial nerve)  
 가

가

가

ADEM Guillain-Barre

ADEM Guillain-Barre

1999 Huber 9 1

Huber 3

23 A 3

Huber  
 Campylobacter jejuni  
 가

GBS ADEM

pathogenic epitope가

AMAN (macrophage) Ranvier node epitope가

GM1 GD1a 가 IgG type

ganglioside

11 , GM1 GD1a가  
 node of Ranvier  
 , AMAN Campylobacter

ADEM AMAN  
 epitope가  
 GM1 GD1a  
 GM1, GD1a가  
 Huber  
 가

epitope  
 가

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