

Guillain-Barre Syndrome following Scrub Typhus Infection: Case Report



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Introduction

Guillain-Barré syndrome (GBS) is the most common disorder presenting acute limb paralysis and is clinically characterized by progressive ascending weakness following antecedent infections. Various sources of infection are associated with GBS, and scrub typhus infection has been reported as rare cause. Early immunotherapy is recommended for the management of GBS. In our case, early diagnosis was unsuccessful and immunotherapy was delayed by 1 month.

Case Description

We report the case of a 72-year-old man with underlying diabetes mellitus, diabetic polyneuropathy and cervical 4-5-6 herniated nucleus pulposus with compressive myelopathy, showing both arm proximal weakness and tingling sensation. Two weeks before admission, the patient started to claim general weakness, tingling sensation in all extremities, and became unable to walk. His occupation was farmer and he did a lot of field work at that time. He visited emergency unit and admitted to orthopedic surgery department under suspicion of exacerbated cervical myelopathy. After the admission, the patient was found unconscious with low O₂ saturation, therefore he was moved to intensive care unit with endotracheal intubation and mechanical ventilation. Antibiotics was applied with suspicion of aspiration pneumonia. Since the positive tsutsugamushi antibody was noted, doxycycline was added from hospital day (HD) 3. Magnetic resonance imaging (MRI) of the cervical and lumbar spine has not confirmed aggravation of intervertebral disc prolapse or myelopathy, but partial enhancement of meninges was observed (Fig 1).

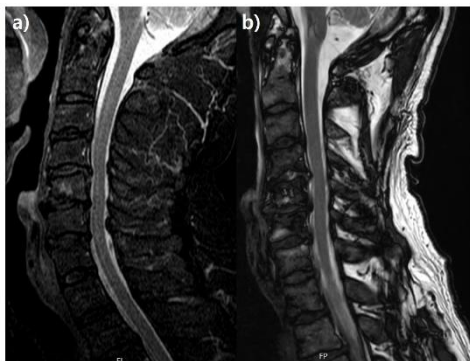


Fig. 1. C-spine MRI of the patient, a) 4 months before admission, b) at HD 4, showed no exacerbated disc protrusion or cord compression.

Cerebrospinal fluid (CSF) examination was done to rule out the possibility of meningoencephalitis on HD 19, 29th day from the onset. There was no evidence of infection, but the protein level was slightly increased. He was diagnosed as GBS from the electromyography, on HD 23, which showed sensorimotor polyneuropathy involving all extremities (Table 1, 2). Intravenous immunoglobulin (IVIG) therapy was applied to the patient from HD 24, 34th day from the symptom onset

Nerve	Stimulation site	Recording site	Amplitude (mV)		Latency (ms)		Conduction velocity (m/s)	
			Rt	Lt	Rt	Lt	Rt	Lt
Median (S)	Wrist	Middle finger	2.3	-	5.73	-	33	-
Ulnar (S)	Wrist	Little finger	8.3	-	6.56	-	36	-
Sural (S)	Calf	Ankle	5.0	5.1	4.17	3.65	55	54
Superficial peroneal (S)	Calf	Ankle	2.3	4.0	4.11	4.22	39	38
Median (M)	Wrist	APB	6.4	-	5.47	-	-	-
	Antecubital fossa	APB	4.5	-	13.33	-	29	-
Ulnar (M)	Wrist	ADM	6.5	-	3.96	-	-	-
	Below elbow	ADM	5.5	-	9.11	-	39	-
	Above elbow	ADM	4.6	-	11.51	-	42	-
Tibial (M)	Ankle	AH	0.1	0.1	5.83	6.25	-	-
	Popliteal fossa	AH	0.1	0.1	19.27	19.95	27	26
Peroneal (M)	Ankle	EDB	NR	NR	NR	NR	-	-
	Fibular head	EDB	NR	NR	NR	NR	NR	NR
	Popliteal fossa	EDB	NR	NR	NR	NR	NR	NR
Peroneal (M)	Fibular head	TA	3.1	2.4	5.78	4.90	-	-
	Popliteal fossa	TA	2.9	2.4	8.28	7.34	32	33

Table 1. Nerve conduction study of the patient at HD 23

Muscle	Spontaneous				MUAP			Interference pattern
	IA	Fib	PSW	Fasc	Amp	Dur	PPP	
Rt. Deltoid	N	1+	2+	None	N	N	N	Reduced
Rt Biceps Brachii	N	None	None	None	N	N	N	Reduced
Rt Flexor Carpi Radialis	N	None	1+	None	N	N	N	Reduced
Rt. Extensor digitorum Communis	N	None	None	None	N	N	N	Reduced
Rt First Dorsal Interossei	N	1+	1+	None	N	N	N	Reduced
Rt Lumbar paraspinialis	N	2+	3+	None	-	-	-	-
Lt Lumbar Paraspinialis	N	2+	2+	None	-	-	-	-
Rt. Gluteus Maximus	N	None	None	None	N	N	N	Reduced
Rt Vastus Medialis	N	1+	1+	None	N	N	N	Reduced
Rt Tibialis Anterior	N	None	1+	None	N	N	N	Reduced
Rt. Medial Gastrocnemius	N	None	2+	None	N	N	N	Reduced

Table 2. Needle electromyography of the patient, at HD 23

Discussion

In this case, the IVIG therapy for GBS was applied at 34th day from the onset of the symptoms. There are several points associated with the late diagnosis of Guillain-Barre syndrome. First, GBS following scrub typhus infection is very rare itself. Second, the patient has underlying history of cervical myelopathy, which can be presented as progressive limb paralysis. Third, right after the admission, the patient became unconscious and was managed in intensive care unit, therefore detailed history taking was limited. We therefore report this case so that GBS could be considered early in future similar cases.