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Debilitating symptoms in the patient with steroid-induced myopathy after stoppage of steroids

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HUMC

INTRODUCTION

Prolonged use of prednisone over weeks to years can cause corticosteroid-induced myopathy, an iatrogenic disease process that manifests as weakness in the proximal limb and neck muscles. In some cases, even with an accurate diagnosis, patients may experience delayed recovery or a worsening of their condition if there is an underlying disorder, such as dysphagia. We report a patient with debilitating symptoms of corticosteroid-induced myopathy patient after sudden discontinuation of steroids.

CASE

The patient suddenly stopped taking corticosteroids after being admitted to the department of neurology.
Past medication history of corticosteroid for 6 months due to back pain.

Physical examination

• Laryngoscopy (**Figure 1A**)
Whitish patch-like lesion on the true vocal cord
Left vocal cord bowing

• Brain MRI (**Figure 1B**)
Unremarkable for acute lesion

• Nerve conduction study (**Table 1**)
Right median sensory neuropathy

• Electromyography (**Table 2**)
No denervation potentials
No giant, polyphasic motor unit action potentials
Full interference patterns

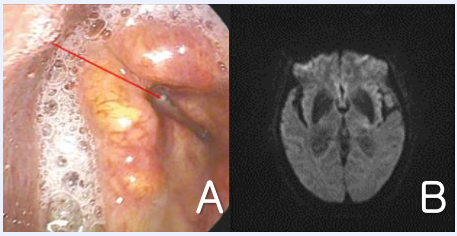

Fig 1A. Laryngoscopy shows whitish patch-like lesion on the true vocal cord (red arrow).
Fig 1B. No definite acute lesion was shown in Brain MRI. Brain Diffusion Weighted Image (5 days after admission).

Initial VFSS (HD 2)

✓ Severe impairment of pharyngeal peristalsis
✓ CPD grade 2
→ Recommended alternative feeding

Course (After discharge)

✓ Became unable to eat
✓ Body weight decreased from 70kg to 54kg over 2 months

2nd VFSS (3 weeks after first admission)

✓ CPD grade 2
✓ (AP view) Bolus was passed well in head right rotation and left tilt with CPD grade 1
→ Insert a Levin tube
→ Admitted to department of rehabilitation medicine

Nerve conduction study						
Motor Nerves	Motor Latency (ms)	cMAP (mV)	CV (m/s)	Sensory Nerves	Sensory Latency (ms)	SNAP (mV)
Rt. Median				**Rt. Median**		
Wrist	5.3	2.0		Finger-Wrist	3.3	8.3
Elbow	9.7	1.9	51.8	Wrist-Elbow	4.1	40.5
Axilla	11.4	1.9	52.4	Elbow-Axilla	1.6	57.4
Rt. Ulnar				**Rt. Ulnar**		
Wrist	2.7	13.4		Finger-Wrist	2.7	25.3
Elbow	6.3	12.5	60.8	Wrist-Elbow	3.7	38.1
Axilla	9.7	10.9	63.6	Elbow-Axilla	3.0	49.8
Lt. Peroneal						
Ankle	5.2	3.9				
Knee	12.1	3.4	44.6			
Lt. Tibial				**Lt. Sural**		
Ankle	4.1	20.5		Ankle	3.0	32.7
Knee	12.7	15.7	43.8			
H-Reflex						
Nerves	H Latency (ms)					
Lt. Tibial-Soleus	30.07					

Table 1. Nerve conduction study shows right median sensory nerve lesion around wrist, with normal latencies, CMAP amplitudes and motor NCVs on tested nerves.

Treatment

Aerobic exercise and antigravity resistance with balance training
Compensation technique for dysphagia
Steroid re-administration (15mg at morning, 5mg at evening)

Course (After treatment)

✓ Functional state : wheelchair → independent gait over 100m
✓ Discharged with the Levin tube removed.

Last VFSS (3 months after first admission)

✓ Improvement of pharyngeal peristalsis and laryngeal elevation
✓ CPD grade 1 (thickener, liquid test)

Electromyography									
Side	Muscle	Ins Act	Fibs	Psw	Amp	Dur	Poly	Recrt	Int Pat
Right	APB	Nml	Nml	Nml	Nml	Nml	0	Nml	Nml
Right	Deltoid	Nml	Nml	Nml	Nml	Nml	0	Nml	Nml
Right	Triceps	Nml	Nml	Nml	Nml	Nml	0	Nml	Nml
Right	FCR	Nml	Nml	Nml	Nml	Nml	0	Nml	Nml
Right	Paraspinalis C5-8	Nml	Nml	Nml					
Right	TA	Nml	Nml	Nml	Nml	Nml	0	Nml	Nml
Right	VL	Nml	Nml	Nml	Nml	Nml	0	Nml	Nml
Right	GCM	Nml	Nml	Nml	Nml	Nml	0	Nml	Nml
Right	Paraspinalis L2-4	Nml	Nml	Nml					

Table 2. Electromyography shows no denervation potentials, no giant/polyphasic MUAPs, and full interference patterns on all the tested muscles.

CONCLUSION

Corticosteroid-induced myopathy can be reversible, but recovery can take several months to a year. In cases of corticosteroid-induced myopathy accompanied by dysphagia, severe dysphagia can persist even after reducing or discontinuing steroids. Therefore, it is crucial to provide follow-up and apply appropriate swallowing treatment and compensation techniques.