SKULL AND SPINE

ROM: full
Tenderness: no facial or neck
Paravertebral Muscles:normal

MENTAL STATUS

- Orientation: Normal
- Fund of knowledge: Normal
- Attention/concentration: Normal
- Recent/remote memory:Normal
- Language: normal

OPHTHALMOSCOPIC

- Fundus/Optic discs/Posterior segments: Normal

CRANIAL NERVES -dysphonic

- II: Normal
- III, IV, VI: Normal
- V: normal
- VII: Normal
- VIII: Normal
- IX, X: Normal
- XI: Normal
- XII: Normal

MOTOR (Upper and lower extremities)

- Bulk/tone: The left leg with spastic.
  Drift: none
- **STRENGTH**
  Neck Flexion:
  Deltoid: Left 5 and Right 5
  Biceps: Left 5 and Right 5
  Triceps: Left 5 and Right 5
  Wrist extension: Left 5 and Right 5
  Finger extension: Left 5 and Right 5
  Finger flexion: Left 5 and Right 5
  Finger abduction: Left 5 and Right 5
  Thumb abduction: Left 5 and Right 5
  Hip flexion: Left 1 and Right 5
  Hip extension: Left 5 and Right 5
  Quadriceps: Left 5 and Right 5
  Hamstrings: Left 5 and Right 5
  Ankle dorsiflexion: Left 1 and Right 5
  Ankle plantarflexion: Left 1 and Right 5
  Toe extension: Left 1 and Right 5

- **COORDINATION**
  F/N: Normal
  H/S: normal

REFLEXES

Jaw Jerk: normal

- Biceps: Left (+++) and Right (++)
- Triceps: Left (++) and Right (++)
- Brachioradialis: Left (+++) and Right (++)

Finger Flexors:

- Patellar: Left (+++) and Right (++)
- Achilles: Left (+++) and Right (++)

OTHER REFLEXES

- Plantar Response: Left Flexor and Right Flexor

Hoffman Sign:absent

- **SENSATION**

Vibration, proprioception, light touch and pinprick are all normal in the lower extremities.

STUDIES REVIEWED:

HISTORY/EXAMINATION:

He is being evaluated in the EMG laboratory for progressive left leg weakness. Please see my full office note from a concurrent visit her Friday as a separate encounter.

NERVE CONDUCTION/EMG DESCRIPTION:
When abnormal, values reported as percentage of the normal values at the end of this report

The right median, ulnar, radial and right and left sural sensory responses are normal.
The right median, ulnar, right and left peroneal and posterior tibial motor responses are normal.

EMG of selected muscles of the right and left leg, right arm, and paraspinals was performed. Although there were some muscles with small short duration polyphasic motor units and a suggestion of an early full recruitment pattern the most striking feature of this study especially in the very weak left leg while the reduced activation.

SNC

Nerve / Sites	Rec. Site	Onset Lat ms	Peak Lat ms	NP Amp µV	Segments	Dur. ms	Distance mm	Velocity m/s	Temp. °C
R Median - Digit II (Antidromic)									
Wrist	Dig II	2.48	3.44	29.2	Wrist - Dig II	2.04	150	61	32.7
R Ulnar - Digit V (Antidromic)									
Wrist	Dig V	2.10	3.10	33.4	Wrist - Dig V	2.02	110	52	33
R Radial - Anatomical snuff box (Forearm)									
Forearm	Wrist	1.98	2.67	36.6	Forearm - Wrist	1.65	130	66	33
L Sural - Ankle (Calf)									
Calf	Ankle	3.31	4.15	20.6	Calf - Ankle	1.88	130	39	29.3
R Sural - Ankle (Calf)									
Calf	Ankle	2.73	3.65	24.7	Calf - Ankle	1.83	130	48	32.5

MNC

Nerve / Sites	Muscle	Latency ms	Amplitude mV	Segments	Dur. ms	Distance mm	Velocity m/s	Temp. °C
R Median - APB								
Wrist	APB	3.04	15.9	Wrist - APB	6.31	60		33
Elbow	APB	7.38	11.1	Elbow - Wrist	7.92	275	63	33
R Ulnar - ADM								
Wrist	ADM	2.83	14.2	Wrist - ADM	5.94	60		32.4
B.Elbow	ADM	7.21	13.1	B.Elbow - Wrist	6.42	270	62	32.4
A.Elbow	ADM	8.33	12.6	A.Elbow - Wrist	6.48	370	67	32.1
L Peroneal - EDB								

Ankle	EDB	3.90	9.0	Ankle - EDB	5.75	80		30.6
Fib head	EDB	12.08	8.3	Fib head - Ankle	6.21	350	43	30.3
Pop fossa	EDB	14.40	9.7	Pop fossa - Ankle	6.15	450	43	29.9
				Pop fossa - Ankle				29.9
R Peroneal - EDB								
Ankle	EDB	3.42	6.8	Ankle - EDB	6.04	80		31.5
Fib head	EDB	11.15	6.2	Fib head - Ankle	6.21	350	45	31.2
Pop fossa	EDB	12.96	6.2	Pop fossa - Ankle	6.23	450	47	31
				Pop fossa - Ankle				31
R Tibial - AH								
Ankle	AH	3.25	11.6	Ankle - AH	5.65	80		29.4
Pop fossa	AH	13.10	9.9	Pop fossa - Ankle	6.62	435	44	29.3
L Tibial - AH								
Ankle	AH	4.77	11.5	Ankle - AH	6.40	80		30.1
Pop fossa	AH	14.92	8.2	Pop fossa - Ankle	7.79	440	43	30.1

EMG Summary Table										
	Insertional	**Spontaneous**			**MUAP**			**Recruitment**		
Muscle	**Activity**	**Fibs/PSW**	**Fasc**	**Other Spont**	**Dur.**	**Amp**	**Poly**	**Pattern**	**Ratio**	**Activation**
R. Tibialis anterior	Normal	None	None	None	Normal	Normal	Normal	Normal	Normal	Normal
R. Gastrocnemius (Medial head)	Normal	None	None	None	Normal	Normal	Normal	Normal	Normal	Normal
R. Peroneus longus	Normal	None	None	None	Normal	Normal	Normal	Normal	Normal	Normal
R. Rectus femoris	Normal	None	None	None	Normal	Normal	Normal	Normal	Normal	Normal
L. Tibialis anterior	Normal	None	None	None	Normal	Decreased	10-30%	Normal	Normal	Decreased
L. Gastrocnemius (Medial head)	Normal	None	None	None	Normal	Normal	Normal	Single Unit	Normal	Decreased
L. Rectus femoris	Normal	None	None	None	Normal	Normal	Normal	Early Full	Normal	Normal
L. Vastus medialis	Normal	None	None	None	Normal	Normal	Normal	Reduced	Normal	Decreased
R. First dorsal interosseous	Normal	None	None	None	Normal	Normal	Normal	Normal	Normal	Normal
R. Brachioradialis	Normal	None	None	None	Normal	Normal	Normal	Normal	Normal	Normal
R. Biceps brachii	Normal	None	None	None	Normal	Decreased	Normal	Normal	Normal	Normal
R. Deltoid	Normal	None	None	None	Normal-Dec	Normal	10-30%	Early Full	Normal	Normal
R. T6 paraspinal	Normal	None	None	None	Normal	Normal	Normal	Normal	Normal	Normal

R. T10 paraspinal	Normal	None	None	None	Normal	Normal	Normal	Normal	Normal	Normal
R. Tongue	Normal	None	None	None	Normal	Normal	Normal	Normal	Normal	Normal

IMPRESSION:

1. Decreased activation can be seen in patients with an upper motor neuron process and that was making a 4 contraction due to pain or other causes.

2. Possible myopathy.

Please see my full clinical note

[redacted] [redacted] [redacted]

PROBLEM ESTABLISHED TO EXAMINER - worsening, additional w/u planned

PROBLEM/DIAGNOSIS: [redacted] is a 27 y.o. male who returns for follow up with rapidly progressive (starting in springtime 2023) left leg weakness with dysphonia and then exam showing spasticity, profound monoplegia and an EMG without clear

evidence of a lower motor neuron process, but rather it is most striking feature was reduced activation consistent with upper motor neuron dysfunction. The differential diagnosis includes primary progressive demyelinating disease, other primary disorders acting white matter such as sarcoid, or a degenerative such as primary lateral sclerosis.

As discussed with [redacted] and the patient, we will get an MRI of the brain with and without contrast in the cervical spine. He should also have an MRI of the thoracic spine. He is scheduled for a lumbar puncture looking for oligoclonal bands or other abnormalities. He should also have aquaporin 4 and anti MOG antibodies checked from the serum. I will be in contact with him once we have these additional studies.

[redacted]