



INTRODUCTION

- Herpes zoster is characterized by painful vesicular skin lesions typically in a dermatomal pattern and occurs due to re-activation of latent varicella-zoster virus (VZV) within the dorsal root ganglia (DRG).
- Although it predominantly affects sensory nerves, motor nerve involvement may occur in rare cases and is thought to occur due to spread of VZV from the DRG to the anterior horn of the spinal cord.^{1,5}
- In even rarer cases, VZV may spread to the brachial plexus resulting in brachial plexopathy.²
- In this case report, we present a patient with electrodiagnostic findings of brachial plexopathy following an episode of herpes zoster.

CASE DESCRIPTION

- A 72-year-old right-handed male with history significant for shingles presents with a chief complaint of right arm weakness for two months.
- Weakness first began 1-2 weeks after a vesicular eruption along the ventral aspect of his right hand, forearm, upper arm, and chest as well as swelling and stiffness in the digits of his right hand.
- Associated symptoms included loss of sensation in all digits of his right hand and medial forearm, pain in the anterior shoulder with overhead lifting, and reduced range of motion in the right shoulder.
- Physical examination was notable for swelling throughout his right hand and digits, winging of his right medial scapula, limited range of motion throughout his right shoulder and wrist, areflexia throughout his right upper extremity, “tingling” sensation to touch throughout right hand/digits and medial aspect of right forearm, negative Spurling’s, and severe weakness in the right finger abductors and flexors with mild weakness in more proximal muscle groups.
- Given sensorimotor deficits in multiple nerve root and peripheral nerve distributions with absent right upper extremity reflexes, electrodiagnostic testing was performed to evaluate for possible brachial plexopathy.
- Nerve conduction study revealed abnormalities in the right median and ulnar motor studies as well as in the right median, ulnar, radial, and medial antebrachial cutaneous sensory studies.
- Needle electromyography revealed fibrillations and positive sharp waves in the right triceps, pronator teres, first dorsal interossei, and abductor pollicis brevis muscles.
- Electrodiagnostic findings were consistent with incomplete right brachial plexopathy predominantly affecting the middle and lower trunks possibly due to herpes zoster.
- Patient was referred to occupational therapy and isotoner glove was provided for right hand swelling.

- At 2-month follow-up, patient was noted to have improved right upper extremity strength with improved pain and decreased swelling of his right hand.

DISCUSSION

- The incidence of brachial plexopathy is often attributed to an inciting event that triggers an immune response, such as immunization.
- Herpes zoster infection is a rarer cause of brachial plexopathy. It is theorized that viral spread from the dorsal root ganglia may lead to inflammatory demyelination involving the brachial plexus.^{2,5}
- Although extremely rare, prior case reports have demonstrated an onset of sensory and motor deficits 1 week following a shingles outbreak.^{2,3,4} Similar to the case presented, these patients were also found to have electrodiagnostic evidence of brachial plexopathy.

CONCLUSION

- Clinicians should be aware of the potential association between herpes zoster and brachial plexopathy.
- The physiatrist should have a low threshold to perform electrodiagnostic studies to assist with diagnosis.
- Although rare, more studies are required to fully characterize the presentation of herpes zoster-associated brachial plexopathy.

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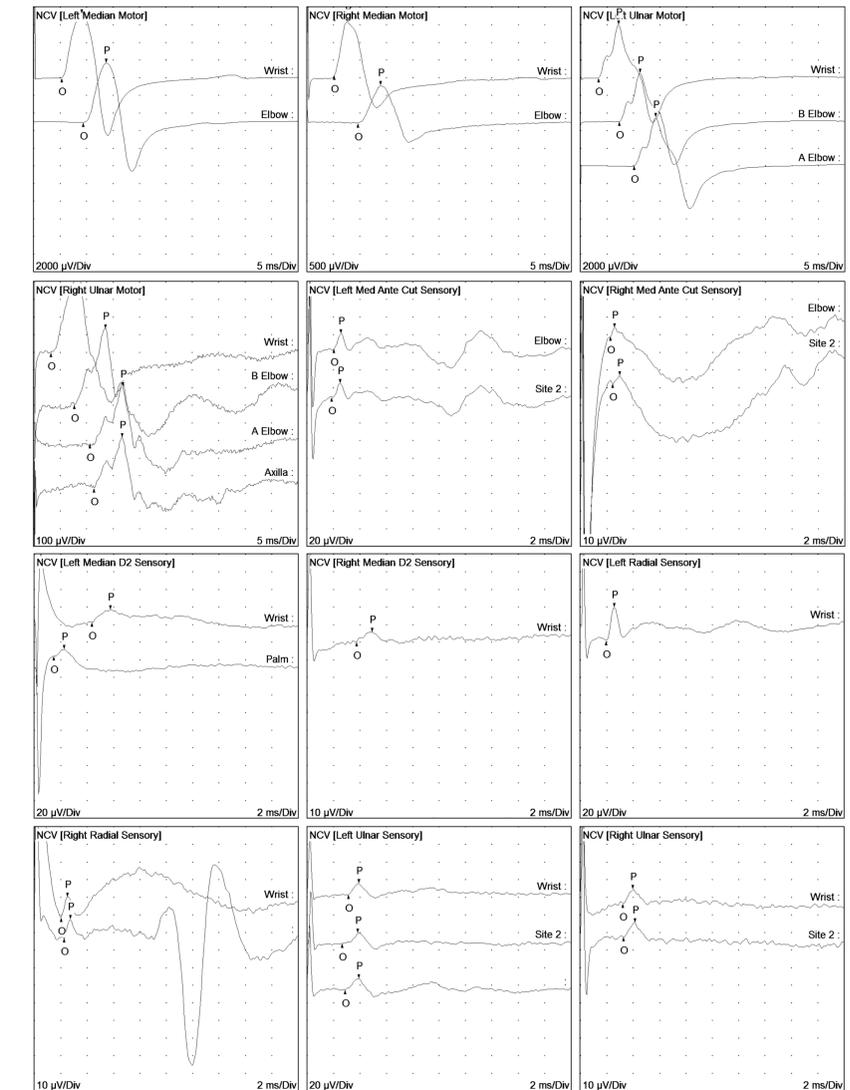


Figure 1: nerve conduction study waveforms

Side	Muscle	Nerve	Root	Ins Act	Fibs	Psw	MUAP	Recrt
Right	Deltoid	Axillary	C5-6	Nml	Nml	Nml	Poly	Nml
Right	Biceps	Musculocut	C5-6	Nml	Nml	Nml	Nml	Nml
Right	Triceps	Radial	C6-7-8	Incr	2+	2+	Nml	Nml
Right	Pronator Teres	Median	C6-7	Incr	2+	2+	Nml	Nml
Right	1stDorInt	Ulnar	C8-T1	Incr	3+	3+	Nml	Reduced
Right	Abd Poll Brev	Median	C8-T1	Incr	3+	3+	Poly	Reduced

Table 1: needle EMG findings