Painful Foot Drop Secondary To Herpes Zoster Infection
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Background:
The typical presentation of herpes zoster is a self-limiting vesicular rash that is often associated with sensory nerve damage and accompanied by post-herpetic neuralgia. Herpes zoster can give rise to other complications that have unusual presentations with serious consequences like motor neuropathy with severe pain that leads to serious disability.

Case:
A 68 year old man with hypertension, diabetes mellitus, and chronic kidney disease presented to the emergency room with a 5 day history of progressively worsening of left lower extremity pain accompanied by a vesicular rash (Figure 1 & 2). The pain was described by the patient as 10/10 on a numerical rating scale with a sharp and shooting quality most prominent on the dorsum of the left foot and extended proximal to the distal anterior femur. The pain had limited the ability of the patient to ambulate and restricted him to a rolling walker for household distances during the week preceding admission.

On initial encounter the patient had a vesicular rash with a clear exudate over the dorsum of the left foot extending up to the proximal tibia on the anterior lower leg. The right lower extremity was unremarkable. Manual muscle testing of the lower extremities was grossly 4/5 bilateral and symmetric limited by pain. Deep tendon reflexes were unobtainable.

The patient had decreased sensation to pinprick and light touch in the left lower extremity on the dorsum of the foot up to the proximal anterior tibia. Sensation was preserved in the posterior left leg. The range of motion was within functional limits in all limbs. On day 10 of admission, the patient developed progressive weakness of left ankle dorsiflexor with strength of 2/5, and 0/5 on day 11. Plantar flexors of left lower extremity were 3/5, left foot eveters 0/5, dorsiflexors 0/5, knee extensors 4/5, knee flexors 4/5, hip flexors 4/5, and hip abductors 4/5. The right lower extremity had strength of 5/5 throughout.

Results:
Cultures of the exudate were positive for Zoster (VZV) shown in figure 3, and all imaging tests were negative. Although he received a 1-week course of valacyclovir 1000mg every 8 hours, his pain persisted. The patient’s pain was treated initially with lyrica 50mg q12, and fentanyl patches 25mcg q72 hours. Despite the addition of cymbalta 80mg daily, and lidocaine 1% topical patches to the pain regimen, the patient still complained of severe pain that interfered with his mobility. He underwent a left peroneal nerve block with 10 milliliters (ml) of 0.25% bupivacaine with immediate and complete relief from 10/10 to 0/10 on numerical rating scale for a total of 3 days with gradual return of pain symptoms by day 7. The patient subsequently underwent a sciatic nerve block with 20 ml of 0.25% bupivacaine and 1% lidocaine mixture, and on 1-month follow-up his pain had subsided to a 4/10.

Discussion:
Varicella-zoster virus is a neurotrophic virus that predominantly affects sensory neurons. Reactivation of the virus in the dorsal root ganglion and its progression to the terminal nerves causes the cutaneous rash and neuralgia. Motor neuron involvement occurs in a small number of cases and is caused by an extension of inflammation from the dorsal root ganglion to the anterior horn and ventral root. A review of the literature shows only few cases reported, with limited attention to pain management, of isolated peripheral motor neuron neuropathy. Involvement of upper limb and facial nerve motor neuropathy has been reported more frequently than lower limb paresis as a result of varicella zoster virus.

Conclusion:
Herpes zoster infection should be considered as a possible cause of peripheral motor neuron neuropathy, post herpetic neuralgia and subsequent disability. A multidimensional treatment modality to pain relief was necessary to alleviate this patient’s pain and promote rehabilitation.

References: