Sir,

Herpes zoster (HZ) is a viral disease that causes vesicular skin lesions and pain in dermatomal distributions. The varicella-zoster virus that causes the disease remains latent in the dorsal root ganglion for years. The reactivated virus, especially in the sixth decade and immunosuppressed individuals, causes symptoms.

The disease generally presents with sensory symptoms; however, motor weakness may be observed in 3% of patients. Previously, HZ-caused segmental or mononeural paresis has been reported in a few cases. We report a case with a foot drop caused by herpes radiculitis approved electrophysiologically.

A 63-year-old woman with severe pain in her left leg was admitted to an orthopedic clinic. Topical analgesic medication was initiated. After using the drugs, the patient experienced vesicular rashes on her leg. She discontinued the drug because she considered these rashes to be side effects. Lumbar magnetic resonance imaging (MRI) was performed because of increasing pain and motor weakness. MRI showed disc protrusion in three consecutive segments; however, there was no significant canal stenosis or root compression. Therefore, the patient was referred to us on the 20th day of symptom onset.

During the first neurological examination of the patient, a steppage gait was observed. Hyperalgesia and vesicular rashes were observed in L4 and L5 dermatomes. There was severe motor paresis in foot dorsiflexion and inversion. However, muscle strength was normal during plantar flexion and eversion. She also had a medical history of diabetes mellitus that has been under control for 15 years.

In nerve conduction studies (NCS), sensory nerve action potentials were reduced in the bilateral median and sural nerves, but the velocities were normal. The left peroneal nerve compound muscle action potential (CMAP) was significantly lower than that of the right. The other motor NCS were normal. The sensory findings were consistent for axonal polyneuropathy caused by diabetes. Needle electromyography (EMG) studies demonstrated positive sharp waves and fibrillation potentials on the left tibialis anterior, tibialis posterior, glutaeus medius, and lumbar paraspinal muscles. Polyphasic motor unit action potentials (MUAPs) were obtained from the left paraspinal and glutaeus medius muscles. However, MUAPs obtained from distal muscles were normal, and reinnervation was not started yet. The other muscles in the lower extremities were normal. Acute denervation was observed only in the muscles with L5 myotomes. Vesicular eruptions in the compatible dermatome and the absence of nerve root damage in the MRI slices confirmed infectious radiculopathy. The needle EMG results are summarized in Table 2.

Symptomatic treatment (analgesic and topical anesthetic) and physical therapy were initiated. The pain resolved immediately after the start of treatment initiation. The patient’s neurological examination improved gradually and was almost completely normal after 6 months.

As we mentioned above, motor symptoms due to HZ are rare. The cases with motor symptoms caused by the HZ virus in previous studies are generally peripheral neuropathy, and the patients were immunosuppressed. A 57-year-old patient presenting with bilateral peroneal neuropathy due to zoster has been previously described. During the follow-up, the patient was diagnosed with myeloid leukemia. In another 79-year-old patient with eosinophilic fasciitis, common peroneal nerve palsy due to zoster was reported. The immunosuppressive background that led to zoster reactivation was demonstrated in both cases. However, our patient did not have a significant immunosuppressive disorder other than diabetes. In addition, unlike the above-mentioned cases, motor symptoms were...
related to the L5 myotome in our case. Peripheral nerves were normal except for mild sensory axonal polyneuropathy associated with diabetes.

Three patients with motor paresis due to HZ radiculitis have been reported before; however, only their NCS have been demonstrated. Needle EMG studies were not performed. In another case, L4-L5-S1 radiculopathy associated with HZ was observed. Electrophysiological tests were not performed in this study also. The patient was followed for 1 year, and almost complete improvement was observed in the neurological examination.

Table 1: Motor nerve conduction studies

| Site          | Latency (ms) | Amplitude (mV) | Velocity (m/s) |
|---------------|--------------|----------------|----------------|
| Median left   | 3.48 ms      | 9.85 mV        | 59.7           |
| Median right  | 3.32 ms      | 7.23 mV        | 54.5           |
| Ulnar left    | 2.66 ms      | 6.34 mV        | 65.9           |
| Tibial left   | 5.20 ms      | 4.82 mV        |                |
| Tibial right  | 4.90 ms      | 5.35 mV        |                |
| Peroneal left | 5.00 ms      | 1.72 mV        |                |
| Peroneal right| 4.30 ms      | 4.57 mV        |                |
| Popliteal     | 16.3 ms      | 3.75 mV        | 36             |
| Popliteal     | 15.05 ms     | 4.87 mV        | 39.4           |
| Popliteal     | 12.8 ms      | 1.87 mV        | 46.1           |
| Popliteal     | 11.45 ms     | 3.95 mV        | 50.3           |

Table 2: Needle EMG examinations

| Muscle         | Fib/PSW | MUAP    | Recruitment |
|----------------|---------|---------|-------------|
| Tibialis anterior | Left    | +++/+   | Normal      | Reduced   |
| Tibialis posterior | Right   | Normal  | Normal      | Normal    |
| Gastrocnemius  | Left    | Normal  | Normal      | Normal    |
| Peroneus longus | Right   | Normal  | Normal      | Normal    |
| Gluteus medius | Left    | Polyphasic | Normal | Reduced   |
| Vastus lateralis | Right     | Normal | Normal      | Normal    |
| Lumbar paraspinale | Left     | Polyphasic | Normal | Reduced   |
|                 | Right   | Normal  | Normal      | Normal    |

Fib: fibrillation, PSW: positive sharp waves, MUAP: motor unit action potential

In conclusion, motor symptoms associated with HZ are rare. Most of these are caused by peripheral nerve involvement of the HZ. However, as seen in our case, HZ may also present with a motor deficit in the L5 myotome, mimicking mechanical radiculopathy both on examination and electrophysiologically. However, this process is temporary and expected complete recovery.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Submitted: 14-Apr-2022   Revised: 23-Jun-2022   Accepted: 03-Aug-2022
Published: 31-Oct-2022

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DOI: 10.4103/aiian.aiian_344_22