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LETTER TO THE EDITOR

Bilateral sciatic neuropathy misdiagnosed as critical illness neuropathy: a case report

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Dear Editor,

A 55-year-old woman presented with distal paraplegia, paraesthesias/numbness and pain on both feet. Clinical history revealed that the above disorder was caused after hospitalization in the intensive care unit (ICU) for 22 days and subsequent nursing for another 12 days in a neurosurgery unit, due to endocranial hypertension, ischemic stroke, pulmonary embolism and pulmonary infection. The patient was referred to our hospital with the diagnosis of critical illness polyneuropathy (CIP).

Physical examination revealed bilaterally pronounced distal weakness of the lower limbs. Knee extension (quadriceps femoris muscle) was normal. Normal was also muscle strength in all muscle groups of upper limbs. Tendon reflexes were bilaterally brisk, except achilles reflexes which were bilaterally absent. Somatosensory function was normal in upper extremities and impaired in both legs and feet (joint position sense was absent on the distal feet joints, vibration sense was also absent distally on both feet and "stocks like" hypoesthesia was present). There were no signs of radiculopathy: Absence of radicular pain and normal Lasegue manoeuvre. Patient's BMI was 26, 6 and a remarkable weight loss was not referred.

Needle electromyogram (EMG) revealed complete denervation of the tibialis anterior, gastrocnemius and biceps femoris bilaterally. The gluteus maximus and quadriceps femoris muscles as well as right extensor digitorum communis and first dorsal interosseous were normal. Nerve conduction studies (NCS) showed absence of compound muscle action potentials (CMAP) from peroneal and tibial nerves and sensory nerve action potentials (SNAPS) from superficial peroneal and sural nerves bilaterally. F-waves could not be elicited from both Peroneal and tibial nerves because of the absence of CMAPS. NCS in both Median and ulnar nerves and F-waves were normal, except a bilateral mild carpal tunnel syndrome.

The electrodiagnostic results were suggestive of bilateral sciatic nerve lesion. High-resolution magnetic resonance neurography (MRN) of the sciatic nerves was performed with a 3 T scanner which revealed T2 hyperintensity and contrast enhancement (suggestive of edema and blood–brain barrier disruption, respectively) of both sciatic nerves, approximately 5 cm distal to the great sciatic foramina (Fig. 1). The posterior thigh muscles showed bilateral and symmetric edema, suggestive of acute/subacute denervation. Based on the history, the above findings were considered compatible with traumatic injury of the sciatic nerves due to chronic compression.

Sciatic neuropathy is a rare mononeuropathy, encountered in about 1 % of the patients referred for electrodiagnosis [1]. The sciatic nerve exits through the sciatic notch, under the piriformis muscle. Subsequently, it courses between the ischial tuberosity and the greater trochanter and lies close to the hip joint. The latter anatomic association renders the nerve vulnerable to iatrogenic injury during total hip arthroplasty, which is one of the most common causes of sciatic neuropathy. Potential causes also include prolonged recumbence, as it happens in the ICU setting, coma from drug overdose, prolonged surgery, trauma, gluteal injection, fibrous bands and muscles [1, 2] and other rare conditions [1, 3–5]. MRN has been increasingly used for the evaluation of patients with possible sciatic neuropathy [5, 6].

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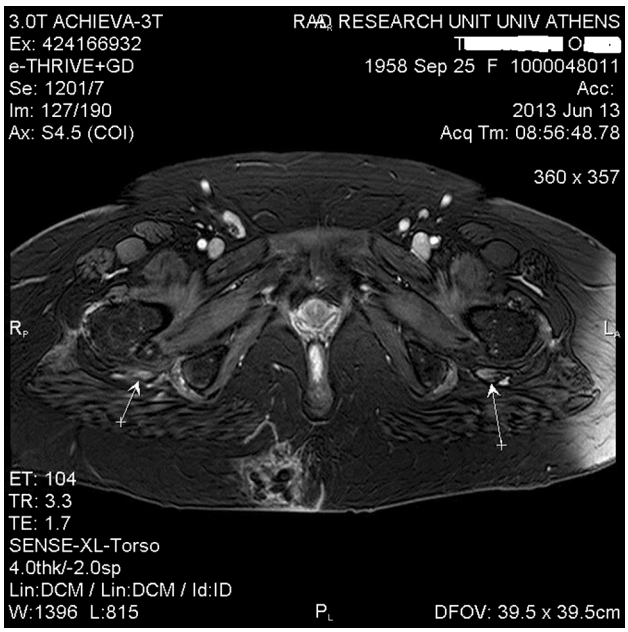

Fig. 1 Axial post-contrast fat-suppressed T1-weighted image at the level of the ischial tuberosities reveals intense enhancement of both sciatic nerves (*arrows*)

The most common neurological complications of ICU hospitalization are CIP, critical illness myopathy (CIM) and encephalopathy [7, 8]. Potential causative factors are considered the type of primary illness or injury, high-dose intravenous corticosteroids, Guillain–Barré syndrome, malnutrition, hypoxia, hyperpyrexia, hyperglycemia, sepsis, multiple organ failure, etc. CIP is an acute onset sensory-motor polyneuropathy characterized by flaccid and symmetrical weakness of the extremities, including respiratory muscles, and sensory symptoms. Involvement of respiratory muscles is often the cause of failed removal of the patients from the ventilator and often coexists with CIM. Our patient did not fulfill the diagnostic criteria which have been used for CIP [7].

Careful clinical examination and electrophysiological study from an experienced electromyographer are crucial for the diagnosis of ICU complications. To avoid neurologic complications, nursing personnel must assist patients avoid abnormal postures and receive adequate training so that early recognition of the aforementioned complications is accomplished.

Conflict of interest The authors declare that they have no conflict of interest.

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