Moving fingers moving toes: A heterogeneous entity

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INTRODUCTION:

Painful legs and moving toes (PLMT) is a rare disorder first described in 1971. It is characterized by semi-rhythmic spontaneous and continuous contractions of the toe flexors, extensors, adductors, and abductors to the extent that some degree of discomfort or disability was noted. In patients described as having PLMT, the lower limbs are involved, with semi-rhythmic movements of toes and fingers. The movements are present at rest and during sleep, and are accentuated by attempted voluntary movements. Patients usually report continuous, involuntary movements of the toes and fingers, often with aching, or burning sensation. The movements are often associated with pain, tingling, or burning sensation in the involved muscles.

METHODS:

Case one:

A 47-year-old woman presented with a ten-year history of gradual progression of abduction and adduction movements of the left index finger. The movement was constant, including sleep. There was no pain. She was able to suppress the movement voluntarily for only 2-3 seconds. She did not report any history of trauma, weakness or sensory abnormalities in the affected limb. Three years prior to office presentation she developed involuntary flexion and extension of the second through fourth toes in the right foot. The movements were also continuous, painless and persistent during sleep. Her past medical history did not include any neurological problem, such as peripheral neuropathy. On physical examination: Normal cranial nerves. Motor exam revealed normal tone, bulk and power in all four limbs. Sensory exam revealed normal sensation. Gait and coordination were intact. Laboratory tests: Complete blood count and chemistry profiles were within normal limits. Magnetic resonance imaging (MRI) scans of the cervical and lumbosacral spines were normal. Sensory evoked potentials (SSEP) were normal except for absent bilateral H-reflex responses. Electromyography (EMG) showed insertional irritability of the left middle and lower cervical and right lumbosacral paraspinal muscles. EMG of the left first dorsal interosseous muscle was normal. EMG study of the left extensor digitorum brevis and abductor hallucis revealed myokymic discharges in multiplets, triplets and multipeak complexes. The discharge frequency was 3.4 Hz with intraburst frequency ranging between 40-80 Hz. The amplitudes ranged between 20-60 μV. The patient was treated with baclofen and antiepileptic drugs such as carbamazepine and sodium valproate, with partial response. The movements persisted despite medication changes. EMG studies were repeated every 6 months and showed persistent myokymic discharges. The movements were persistent during sleep and were not abolished by muscle relaxants. The movements were continuous, painless and persistent during sleep. The patient did not respond to a trial of carbamazepine and declined further therapy.

Case two:

A 60-year-old woman presented with a ten-year history of involuntary and continuous movements of her left toes. It began in the second through fourth toes and eventually involved all five toes. She denies sensory abnormalities, pain, tingling or burning sensation in the involved muscles. In addition, she complained of a "dancing over my left foot that is not gone". Her past medical history was unremarkable for trauma or any significant neurological problem. On physical examination: Normal cranial nerves. Motor exam revealed normal tone, bulk and power in all four limbs. Sensory exam revealed normal sensation. Gait and coordination were intact. Laboratory tests: Complete blood count and chemistry profiles were within normal limits. Magnetic resonance imaging (MRI) scans of the cervical and lumbosacral spines were normal. Sensory evoked potentials (SSEP) were normal except for absent bilateral H-reflex responses. Electromyography (EMG) showed insertional irritability of the left middle and lower cervical and right lumbosacral paraspinal muscles. EMG of the left first dorsal interosseous muscle was normal. EMG study of the left extensor digitorum brevis, left abductor hallucis and left flexor hallucis brevis revealed myokymic discharges in multiplets, triplets and multipeak complexes. The discharge frequency was 3.4 Hz with intraburst frequency ranging between 40-80 Hz. The amplitudes ranged between 20-60 μV. The patient was treated with baclofen and antiepileptic drugs such as carbamazepine and sodium valproate, with partial response. The movements persisted despite medication changes. EMG studies were repeated every 6 months and showed persistent myokymic discharges. The movements were persistent during sleep and were not abolished by muscle relaxants. The movements were continuous, painless and persistent during sleep. The patient did not respond to a trial of carbamazepine and declined further therapy.

CONCLUSION:

1. The common features shared in the syndromes of painful legs and moving toes, painless legs and moving toes and our patients are continuous movements of toes and fingers and similar rhythmic movements in the involved muscles in the EMG studies. These common features could be summarized as continuous focal muscle fiber activity.

2. Continuous movements of toes and fingers in the absence of known pathology associated or not with pain may be a presentation of focal nervous system disorder.

3. Since possible autoimmune mechanism is suggested for neuromyotonia immune-modulating therapy may be useful in focal neuromyotonia, especially associated with pain.

REFERENCES: