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Gabapentin for Painful Legs and Moving Toes Syndrome

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A 73-year-old woman presented with a 5-month history of continuous tingling pain in both feet. She had a past history of laminectomy at the level of the fourth lumbar vertebra due to the damage of lumbar intervertebral disc 7 years ago. Lumbar sympathetic blocks could calm the pain transiently. The patient had not an urge to move the legs or the toes. The symptoms did not change with rest or walking. On neurological examination, there were intermittent and irregular movements of the right toes, mainly of abduction and adduction. The patient could not suppress them voluntarily. There was no muscle atrophy, fasciculations nor myokymia. Muscle strength was normal. Tendon reflexes were normal except for ankle reflexes which were absent. Light touch, pinprick, cold sense and position sense were normal, however, vibration sense was slightly decreased at the distal lower extremities. Peroneal and posterior tibial motor nerve conductions were normal. Sural sensory nerve conduction was slightly decreased. MRI of the lumbar spine revealed no abnormality in the spinal cord or roots. Baclofen, clonazepam, carbamazepine and tricyclic antidepressants have been tried without success. Gabapentin (200 mg 3 times daily) was prescribed, with partial relief of the pain. Then, the pain could be controlled by 700 mg of gabapentin per day, however, movement of toes continued.

Discussion

Painful legs and moving toes syndrome may not be a homogenous entity (2, 3). At least two different physiopathologic mechanisms have been proposed: peripheral and central mechanisms (2, 3). Lesions in the posterior root ganglion, cauda equina, nerve roots, or a peripheral nerve can cause frequent impulses in afferent fibers which activate local circuits of interneuron and motoneurons resulting in local muscle movements. Pain and involuntary movement may also occur together in a central disorder (2, 3), although the precise mechanism is still under investigation.

A variety of medications, such as baclofen, benzodiazepines, tricyclic antidepressant, anticonvulsant, beta-blockers, and corticosteroids, have been tried in painful legs and moving toes syndrome previously, usually with disappointing results. Gabapentin was initially produced as an adjunctive antiepileptic drug, its indications now include diabetic neuropathy, postherpetic neuralgia, trigeminal neuralgia, migraine prophylaxis, bipolar disorder and anxiety disorders.

Gabapentin is structurally related to the neurotransmitter GABA, although it has no direct GABAergic action on GABA receptors. Gabapentin seems to enhance inhibitory input of GABA-mediated pathways. It has an inhibitory effect on voltage-dependent calcium ion channels at the post-synaptic dorsal horns and may interrupt the series of events leading to the neuropathic pain (4). Gabapentin has been clearly demonstrated to be effective for the treatment of neuropathic pain in diabetic neuropathy and postherpetic neuralgia (4). Therefore, gabapentin should be considered an important drug in the management of other neuropathic pain syndromes such as painful legs and moving toes syndrome, although there is only one previously reported case successfully treated with gabapentin (5).

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