

Restless Leg Syndrome

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I recently saw a patient with a diagnosis of restless legs syndrome (RLS). The main feature of this condition is a compulsion to move the legs - usually when lying or resting - that often affects sleep, since the symptoms are worse at night. There may be sensory symptoms, such as creeping; crawling; tingling; burning or pain in the lower limbs. Voluntary movement, such as pacing, shaking or rubbing the limbs, will relieve the symptoms temporarily.^{1,2}

Symptoms

The symptoms are brought on with rest (sitting or lying down). The more comfortable the patient becomes, the more likely the symptoms will occur. However, the reverse is also true - the less comfortable the patient is, the less likely he or she will experience symptoms. Thus, some patients may find it easier to sleep on a hard floor than in a comfortable bed.³ Since rest often brings on manifestations of RLS, activities that require prolonged sitting, such as traveling long distances or going to movies, are often avoided.

RLS should not be confused with leg cramps. An RLS patient may describe feeling "cramps," yet, with cramps, there is definite knotting of the muscle. On the other hand, RLS can also include severe local muscle pain. This is considered an underdiagnosed condition, and its symptoms are frequently ascribed to stress and anxiety.²

Case History

Examination of this patient revealed normal office neurological and vascular testing. She had a history of intermittent lower back pain and periodic "sciatica." She stated that her mother had suffered similar symptoms. Spinal adjustments, and treatment directed to restrictions of soft tissue in the lower extremities - both from a muscle and fascial component - were not helpful. This patient did not show any improvement after five visits, and she was discharged from care. (I would appreciate it if any of our readers have experienced any results at all with this difficult condition!)

RLS Pathology

According to the literature, this condition could begin before the age of 10, and may be misdiagnosed as "growing pains," or even attention deficit hyperactivity disorder. In one study, more than 50 percent of the respondents knew of one or more first-degree relatives affected by RLS, and five of 33 patients had RLS initially triggered either by diabetic peripheral neuropathy or lumbosacral radiculopathy.⁴

RLS has been reported to occur in 20 percent of women during pregnancy, and in 20 percent to 62 percent of patients undergoing dialysis.³ The pathophysiology of this condition is unknown. A family history suggestive of an autosomal dominant mode of inheritance is probable. Using high-resolution, functional magnetic resonance imaging, cerebral generators were localized that were associated with sensory leg discomfort and periodic limb movements in 19 patients with RLS.

These findings indicate that cerebellar and thalamic activation may occur because of sensory leg discomfort, and that the red nucleus and brain stem are involved in the generation of periodic limb movements in patients with RLS.⁵

Periodic limb movements in sleep, defined as repetitive flexing of lower limb joints (hip, knee or ankle) and dorsiflexion or fanning of the toes, for periods of 0.5-5 seconds at intervals of 5-90 seconds, are often associated with RLS. Daytime leg movements may also occur in severe RLS; these are also sometimes periodic in nature.⁷ Iron and Other Deficiencies

A percentage of patients with RLS show an iron deficiency that, when corrected, improves or resolves symptoms. In one report, 21 of 22 subjects who had normal serum iron levels had a resolution of symptoms of RLS after high-dose intravenous iron supplementation.⁶ Brain iron deficiency may be a critical factor in the pathology of RLS.⁷ Clinical drug trials provide evidence of an impaired dopaminergic system in RLS. Medically, dopaminergic agents are considered the first line of treatment in idiopathic RLS.

Criteria for RLS

Other conditions (such as sleep apnea; neurodegenerative diseases; spinal cord lesions; stroke; narcolepsy; neuropathy; and just the complaint of leg cramps) may make us think of RLS; however, to confirm this condition, the patient must have an irresistible desire to move the legs that is brought on by rest, relieved by movement, and grows worse in the night or evening.

Editor's note: Another recent article on RLS, elaborating on the nutritional aspects of treatment, can be found at www.chiroweb.com/archives/21/17/01.html.

References

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