

ACADEMY OF SPINAL CORD INJURY PROFESSIONALS

RESTLESS LEG SYNDROME INCREASED AFTER SPINAL CORD INJURY (SCI)

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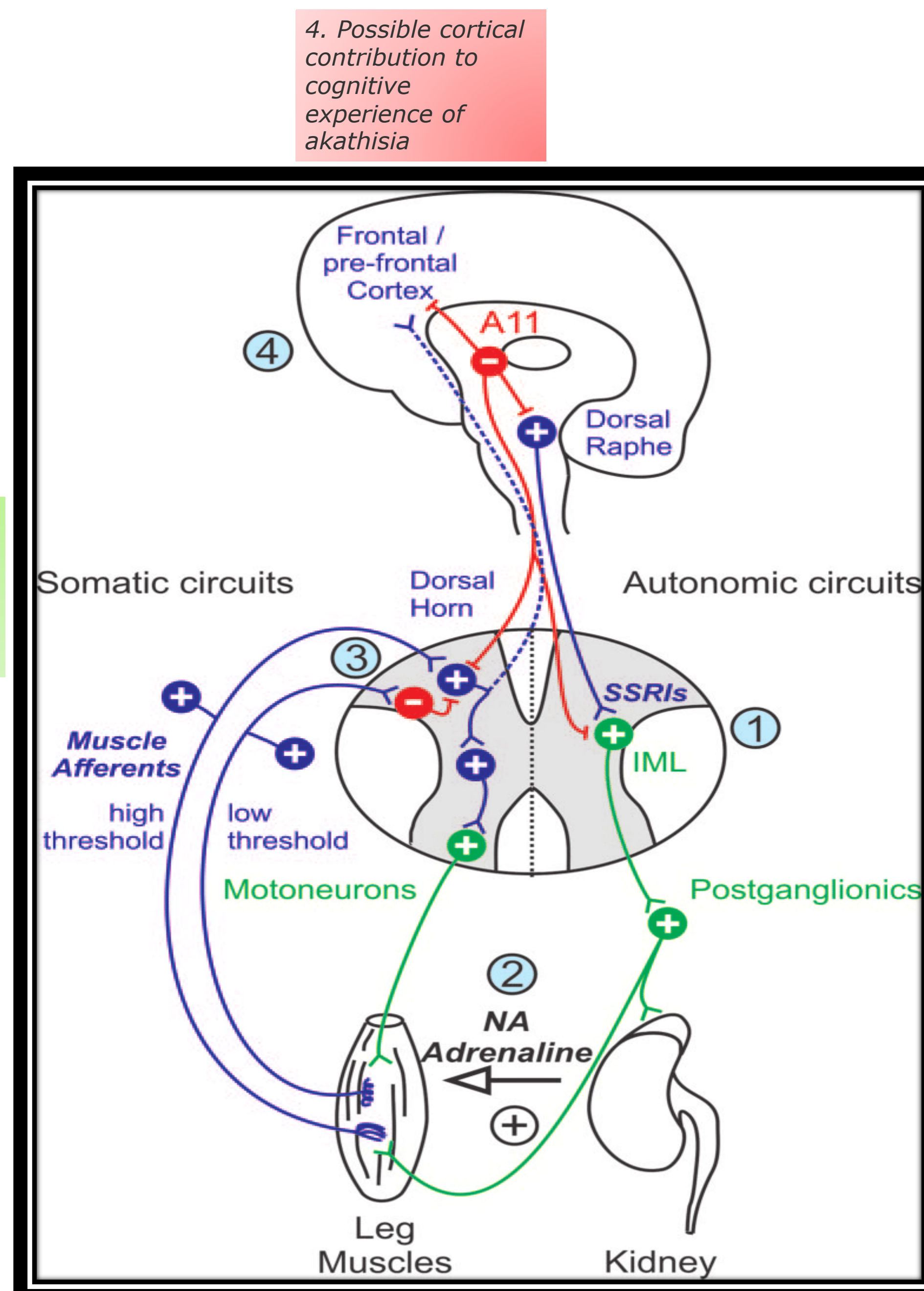
CASE

77-year-old white male with incomplete tetraplegia after motorcycle accident and premorbid Parkinson's Disease and Restless Leg syndrome (RLS). His initial participation in the inpatient rehabilitation program was limited due to changes in mental status. He was initially on high doses of Ropinirole, subsequently it was reduced. Neurologist recommended increasing the patient's Levodopa and maintaining Ropinirole at low doses due to the side effects. Ropinirole is thought to contribute more to confusion and hallucinations than Levodopa. The patient's lower extremity tone was more significant in the afternoons and overnight and oral baclofen doses were maximized. Botulinum injections utilizing motor unit amplification to selected left lower limb muscles were performed without significant improvement as would have been expected. The patient completed his inpatient rehabilitation program as he had reached expected short-term goals. He is independent in direction of his care and supervision with power wheelchair mobility.

International Restless Legs Syndrome Study Group (IRLSSG) consensus diagnostic criteria for restless legs syndrome/Willis-Ekbom disease (RLS/WED).

Essential diagnostic criteria (all must be met):

1. An urge to move the legs usually but not always accompanied by, or felt to be caused by, uncomfortable and unpleasant sensations in the legs.
2. The urge to move the legs and any accompanying unpleasant sensations begin or worsen during periods of rest or inactivity such as lying down or sitting.
3. The urge to move the legs and any accompanying unpleasant sensations are partially or totally relieved by movement, such as walking or stretching, at least as long as the activity continues.
4. The urge to move the legs and any accompanying unpleasant sensations during rest or inactivity only occur or are worse in the evening or night than during the day.
5. The occurrence of the above features is not solely accounted for as symptoms primary to another medical or a behavioral condition (e.g. myalgia, venous stasis, leg edema, arthritis, leg cramps, positional discomfort, habitual foot tapping).



4. Possible cortical contribution to cognitive experience of akathisia

3. Proposed circuitry leading to an increased activation of high-threshold muscle afferents and their control by movement

1. Proposed circuitry leading to increased sympathetic drive

2. Proposed circuitry leading to an aberrant activation of high-threshold muscle afferents (focal akathisia)20

Differential Diagnosis
 Leg cramps
 Peripheral Neuropathy
 Radiculopathy
 Arthritic Pain
 Positional unconscious foot or leg movements (e.g., hypnic jerks, habitual foot tapping, leg shaking, general nervous movements):

DISCUSSION

Spinal cord lesions could allow the expression of RLS symptoms and a spinal leg movement generator by interrupting descending inhibitory spinal pathways as stated by Clemens et al (5). A survey performed in an outpatient clinic for one year by Kumru et al, it represents the first case survey exploring the frequency of RLS in SCI. It was a large SCI population documented a higher prevalence of RLS in SCI patients (17.9%) than it was reported in the general population (3,6). Peter et al confirm the high prevalence of PLM in tetraplegia and the presence of leg movements in NREM and REM sleep along with wakefulness after controlling for OSA (4). After Nilsson et al has studied Chronic SCI cases with challenging spasticity and neuropathic pain treatment failure and intralesional involuntary movements or dysesthesia, the possibility of RLS or PLMs should be considered(1). The diagnosis of RLS in specific clinical population with leg symptoms such as SCI condition, using only the 4 diagnostic features might lead to a higher rate of false positive as Henning et al concluded (8). The revised IRLSSG added the fifth criterion is a new addition for RLS/WED, in order to increase the specificity of the diagnostic criteria (2). There is multiple options for RLS treatment, first line medications are Dopamine agonists such as pramipexole, ropinirole, and rotigotine. These medications were approved for RLS treatment between 2004 and 2009(7).

CONCLUSION

This case highlights how RLS and spasticity in SCI patients can easily be overlapping. It also could be a misdiagnosis for spasticity in those without premorbid RLS. Overall, the presence of both symptoms will impact the functional outcome. The SCI population should be screened and evaluated for RLS on inpatient rehabilitation units and during their annual exams.

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