Commentary

This Journal issue contains a case report on restlessness in the right upper limb as the sole presentation of a restless legs syndrome (RLS).[1] There are few reports on RLS presenting primarily with restlessness of the arm(s), the oldest dating from 1976.[2-6] In many of these reports patients develop the symptom of restless legs in the course of their disease. Normally patients start with the symptom of restless legs and develop a complaint

of restless arms much later.[7,8] Due to the scarceness of the symptom of restless arms, the diagnosis maybe delayed by years.

So far there is only one study with polysomnographic documentation of "restless arms". Chablis *et al.* could demonstrate that 15 out of 22 patients with RLS had periodic arm movement >5/h during wakefulness and only 3 during sleep.[6] A questionnaire-based study by Michaud *et al.* in 230 RLS patients revealed arm restlessness in 48.7% of their patients.

The diagnosis of RLS is assessed by using the criteria of the International RLS Study Group. The essential criteria are based on subjective information: Report of an urge to move the legs (and arms) with or without unpleasant sensations which are enhanced by rest, relieved by movement, and worsened in the evening or at night. Objective information such as excessive periodic leg movements, positive response to dopaminergic medication, family history of RLS or findings of a neurological examination are considered to be supportive for the RLS diagnosis and important for differential diagnosis. Addition of the latter to the subjective criteria adds to the accuracy of the diagnosis.[9] One of the problems of establishing the diagnosis of RLS is the explicit focus of the International Criteria on leg movements. Restless arms get into the focus with "augmentation" which indicates earlier onset of symptoms and spreading of complaints within the limbs, including the arms. This can happen early or at any time during treatment as a response to dopaminergic medication. The prevailing diagnostic criteria and the focus on the legs make it difficult to diagnose "restless arms (RLA)". Before this diagnosis is established a thorough differential diagnosis has to be performed to rule out "RLS mimics", i.e., diagnoses that fulfil the international criteria, but which are not RLS.[10] Differential diagnosis has to rule out leg cramps, neuropathy, radiculopathy, arthritic pain, positional discomfort and many other disorders. RLS as comorbid sleep-related movement disorder (i.e., in narcolepsy and REM sleep behavior disorder) and secondary RLS forms, especially RLS induced by specific medication have to be considered to establish the correct treatment.[3] In the case report of this issue the authors had to consider thoracic outlet syndrome as differential diagnosis.

Only when all the differential diagnoses have been ruled out, and all the criteria of the International RLS Study Group are met, RLA can be diagnosed.

The pathophysiology of RLS is not entirely clear. The diagnosis of RLA as primary symptom of RLS allows to rethink the concept of a peripheral neuropathy. Pereira *et al.*, describe a patient, who, after knee surgery developed RLS in the affected leg and the contralateral wrist and hand.[2] They authors hypothesize that the affection of hand and wrist are a "contamination" of the primarily affected fibular nerve by ephapses. If RLS is caused by irritation of peripheral nerves, any kind of nerve damage could result in isolated RLS, RLA or restlessness of other body parts. This hypothesis and the cause of restless arms as initial symptom of RLS still need further investigation to clarify if RLA is just another phenotype of RLS or a separate entity.

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