Spinal Pseudoathetosis in a patient with Multiple Sclerosis

Georg Kägi, Oezguer Yaldizli & Barbara Tettenborn

Introduction: Lesions associated with dystonia/athetosis are usually located in the basal ganglia including the striatum, globus pallidus and its connections. If dystonia or athetosis occurs along with proprioceptive loss, the term “pseudoathetosis” has been introduced. The causing lesion can be at all levels of the sensory pathways (i.e. peripheral nerve, root, posterior columns, thalamus, parietal cortex) and of different origin (stroke, multiple sclerosis [MS], syringomyelia, cord compression, systemic lupus erythematosus). We report a video case of a patient with relapsing remitting multiple sclerosis and spinal pseudoathetosis.

Methods/results: This 41-year-old female patient was diagnosed with relapsing remitting multiple sclerosis in the year 2005 and had three relapses since then under therapy with Interferon Beta 1a. She came to our attention now because of acute involuntary movements of her right arm. Her right arm felt clumsy and numb. She did not have other symptoms and walking was well preserved. During examination she had involuntary dystonic/athetoid postures and movements of her right hand, which were more obvious during voluntary movements and absent at rest. She had a complete loss of proprioception of her right arm with only mildly reduced vibration sense. Power and reflexes were normal. We admitted her for high-dose intravenous steroid treatment with the suspicion of a relapse. The MRI (head and neck) showed a new demyelinating gadolinium-enhancing intrinsic lesion in the posterior part of the cervical cord on level C3 including the right posterior column.

Somatosensory evoked potentials of the median nerve showed good responses at peripheral and spinal level with an absent cortical response on the right side. After 2 weeks she noticed some improvement of her involuntary movements, which went in parallel with an improvement of her proprioception. She has been videotaped at admission and after 6 weeks with nearly complete resolution of her movement disorder and proprioception.

Conclusion: With this illustrative video case of a patient with pseudoathetosis and MS we want to highlight the following points: (1) If limb dystonia/athetosis is due to a proprioceptive loss, the term “pseudoathetosis” is used. (2) The causing lesion can be at all levels of the sensory pathways. (3) In MS pseudoathetosis is the presenting symptom or consequence of a relapse and is likely to be due to a spinal lesion affecting the dorsal columns.
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