

Case report

Mirror movements or functional tremor masking organic tremor

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ABSTRACT

Background: Functional tremors can be diagnosed based on clinical and physiologic criteria such as entrainment, suggestibility, distractibility, variable nature with the associated clinical history of psychosomatic co-morbidities. The current case report highlights the underrecognized utility of neurophysiology in the correct diagnosis of tremors, providing useful clinical and neurophysiologic insights into clinical and physiological assessment of tremors.

Case report: A 62-year-old woman with a past medical history of polio was referred by a movement disorders neurologist for evaluation of tremor with concerns of a likely functional etiology. On first assessment there were findings notable for a possible organic etiology, but upon subsequent evaluation the tremor was noted to be variable and entrainable, suggestive of a functional etiology. Neurophysiological tremor study could identify an underlying organic tremor (likely of multi-factorial etiology). Tremor entrainment with contralateral hand tapping could be mirror movements or functional movements, as the underlying organic tremor was not entrained. The amplitude of mirrored movement was commensurate with the tapping amplitude.

Discussion: Functional tremors may mask an underlying organic tremor. Additionally, motor overflow which may happen especially with large amplitude movements may masquerade as mirror movements, which can be difficult to differentiate from an entrained functional tremor. Objective physiology and refinement of the current clinical and physiologic tremor evaluation techniques may help identify an underlying organic etiology.

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1. Introduction

Functional tremors are the most common type of functional movement disorders, but the etiopathogenesis is poorly understood (Edwards and Bhatia, 2012; Edwards et al., 2014). Clinical and physiologic diagnostic criteria have been proposed for these disorders which can be difficult to diagnose (Hallett, 2016, 2018; Schwingenschuh et al., 2011, 2016; Fahn and Williams, 1988). Clinical characteristics such as entrainment, suggestibility, distractibility, variable nature, presence of co-contraction sign taken together with the history of psychosomatic co-morbidities and response to treatment, aid in the diagnostic certainty (Shill and Gerber, 2006). Clinical neurophysiology can further aid in the diagnosis; however, its utility in identifying an underlying organic tremor in a diagnosed case of functional tremor is not well recognized.

2. Case report

We report a 62-year-old woman who was referred to us by a movement disorders neurologist for evaluation of bilateral upper extremity tremors with concerns for a likely functional etiology. She presented with a history of bilateral upper extremity and voice tremor notably worse over the last 2–3 years, which waxes and wanes based on her mood. She endorsed a dissociative psychiatric disorder, PTSD with concomitant depression, reported her tremor being worse when she feels ‘not quite like herself’, and acknowledged that her mood disorder led to bouts of worsening tremor. Of note, she reported a history of polio, contracted at the age of 10 months with worse affliction of her right arm and left leg. Her relevant neuropsychiatric medications included Modafinil and Fluoxetine for alertness and mood disorder, respectively. She was also taking Clonazepam 0.5 mg at bedtime for insomnia. She had undergone extensive diagnostic evaluation for tremor; relevant positive findings included presence of motor neuron disease per EMG/NCS (evidence for motor polyneuropathy consistent with patient’s known history of poliomyelitis affecting primarily the

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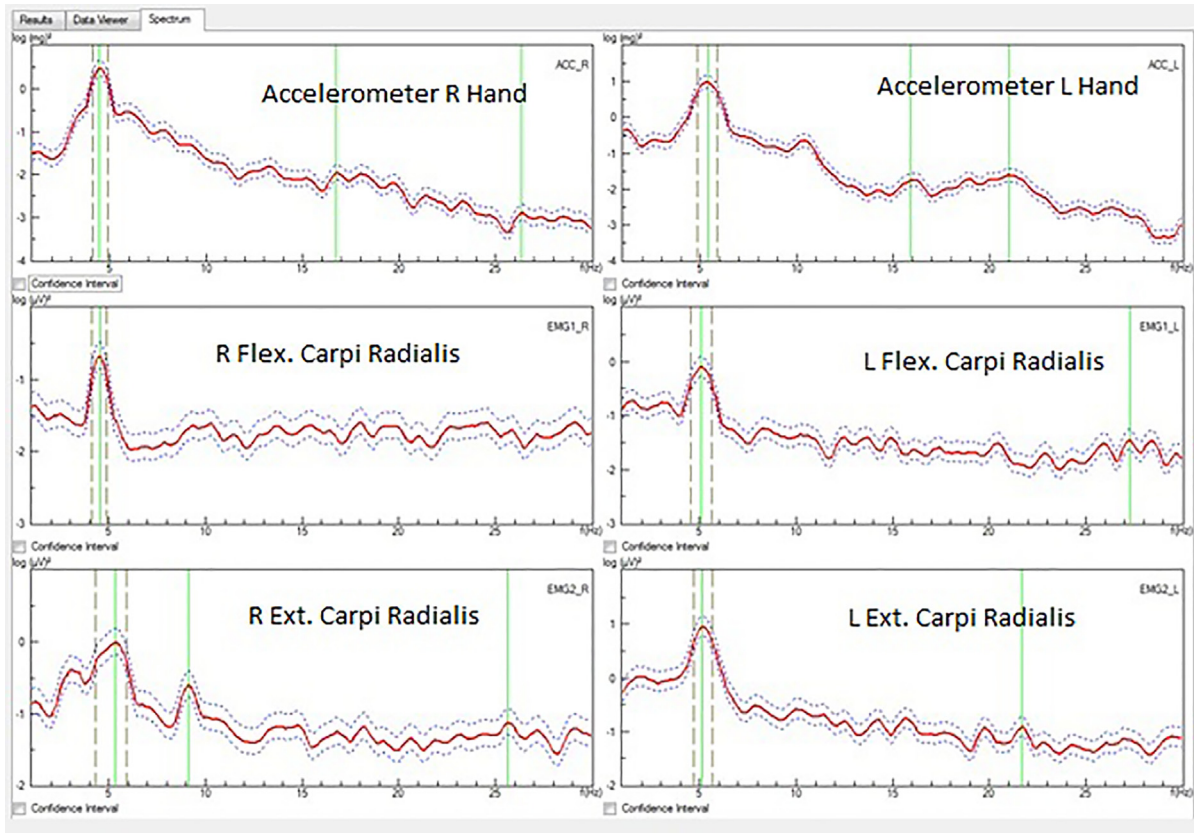


Fig. 1. Frequency spectrum of rest tremor in both hands with the spectral power on the y axis in a log scale.

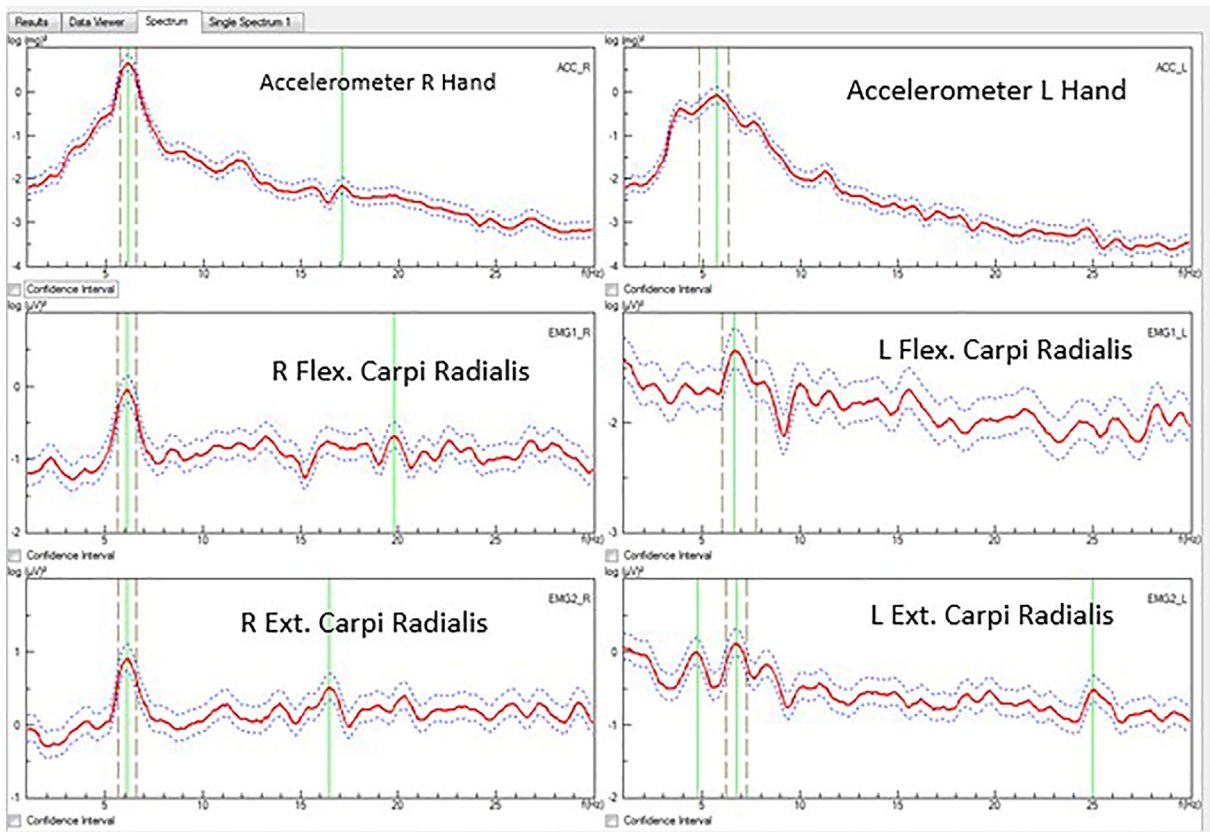


Fig. 2. Frequency spectrum of postural tremor in both hands with the spectral power noted on the y axis in a log scale.

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