Assessing tremor to rule out psychogenic origin: It's tricky

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Tremors are a rhythmic and oscillatory movement of a body part with a relatively constant frequency.[1] Several subtypes of tremors are classified on the basis of whether they occur during static or kinetic body positioning. Assessing tremors to rule out psychogenic origin is one of the trickiest tasks for a psychiatrist (***Table 1***[2]). Non-organic movement disorders are not rare, and all common organic movement disorders can be mimicked by non-organic presentations.

Diagnostic approach

Start by categorizing the tremor based on its activation condition (at rest, kinetic or intentional, postural or isometric), topographic distribution, and frequency. Observe the patient sitting in a chair with his hands on his lap for resting tremor. Postural or kinetic tremors can be assessed by stretching the arms and performing a finger-to-nose test. A resting tremor can indicate parkinsonism; intention tremor may indicate a cerebellar lesion. A psychogenic tremor can occur at rest or during postural or active movement, and often will occur in all 3 situations (***Table 2, page 26***).[1-3]

Some of the maneuvers listed in ***Table 3, page 26***[2] are helpful to distinguish a psychogenic from an organic cause. The key is to look for variability in direction, amplitude, and frequency. Psychogenic tremor often increases when the limb is examined and reduces upon distraction, and also might be exacerbated with movement of other limbs. Patients with psychogenic tremor often have other "non-organic" neurologic signs, such as give-way weakness, deliberate slowness carrying out requested voluntary movement, and sensory signs that contradict neuroanatomical principles.

Investigation

Proceed as follows:

1. Perform laboratory testing: thyroid function panel and serum copper and ceruloplasmin levels.[2]

continued

Table 1

Psychogenic tremor: Characteristics and patient profile

Tremor	Patient
• Abrupt onset	• Comorbid psychiatric disease
• Lack of other neurologic signs	• High degree of medical knowledge
• Changing tremor characteristics	• History of functional disturbances
• Inconsistent clinical presentation	• Multiple undiagnosed conditions
• Negative laboratory or radiologic investigations	• Presence of other unexplained bodily symptoms
• Positive placebo response	• Presence of secondary gain, including legal issues
• Spontaneous remission	
• Increases with attention, diminishes with distraction	
• Unresponsive to medication	

Source: Reference 2

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Psychogenic tremor often increases when the limb is examined, and reduces upon distraction

Table 2

7 sources of tremor, with characteristics

Type or source of tremor	Appearance and findings
Brain tumor	Tremor is lateralized to one side
Cerebellar tremor	Intention or postural tremor; ipsilateral involvement to lesion; abnormal finger-to-nose test; imbalance; abnormal heel-to-shin test; hypotonia
Drug-induced tremor	Usually postural, with age and polypharmacy (beta-agonists, theophylline, antidepressants, lithium, thyroxine)
Dystonic tremor	Irregular and "jerky" movements of hand and arms
Parkinsonian tremor	Rest tremor; asymmetric; involves distal extremities; decreases with voluntary movement; bradykinesia, postural instability, and rigidity
Psychogenic tremor	Abrupt onset; spontaneous remission; extinction with distraction; changing tremor characteristics
Wilson's disease	Winging tremor, other physical symptoms

Source: References 1-3

Table 3

Physical maneuvers to assess psychogenic tremor

Auscultation	Put a stethoscope on the leg muscles if you suspect orthostatic tremor. You will hear a sound reminiscent of a helicopter, as muscles quiver at a high frequency
Distractibility	Asking the patient to perform a cognitive task (such as saying the months of year backwards or doing serial 7 subtractions) exacerbates an organic tremor (especially the resting tremor of Parkinson's disease) but reduces a psychogenic tremor
Entrainment	Tap a rhythm with your hands and ask the patient to follow it by tapping an unaffected limb. Vary the rate of your tapping and check that the patient's voluntary tapping matches your frequency. Psychogenic tremor tends to become "entrained" to the frequency that you are tapping or stops altogether. The rhythm of organic tremors is less affected by voluntary movement in other limbs
Loading	Pressing down with your hand on the tremulous limb usually diminishes the amplitude of an organic tremor but increases amplitude in a psychogenic disorder

Source: Reference 2

2. Perform surface electromyography to differentiate Parkinson's disease and benign tremor disorders.[2]

3. Obtain a MRI to assess atypical tremor; findings might reveal Wilson's disease (basal ganglia and brainstem involvement) or fragile X-associated tremor/ataxia syndrome (pontocerebellar hypoplasia or cerebral white matter involvement).[3]

4. Consider dopaminergic functional imaging scanning. When positive, the scan can reveal symptoms of parkinsonism; negative findings can help consolidate a diagnosis of psychogenic tremor.[3]

References

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