Functional tremors in older people: an individualised approach is required

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There is debate as to the most appropriate and accurate description of functional movement disorders (FMDs). In this article, Dr Chalkley and Dr Ruhi discuss the characteristics of FMDs and specifically look at two patients’ tremors that were entirely distractible and variable in direction, amplitude and frequency. They describe similar onset and development of their symptoms: hand tremors starting after a traumatic event, which then progressed to the whole body. Despite this, there were multiple differences between the cases; of note, the effect of emotion, exercise and relaxation were completely opposing. They conclude that a traumatic life event may trigger a cascade of somatic symptoms, how personalised approaches to psychological therapy are of importance and crucially that more high-quality research is needed to make evidence-based decisions on the management of FMDs.

Functional movement disorders (FMDs) are disorders that can be changed by distraction or non-physiological manoeuvres and that are clinically distinct from movement conditions known to be caused by neurological diseases. Although extensively quoted in the literature, the above definition is not universally accepted and there is ongoing debate regarding the most appropriate and accurate description for such disorders. Currently, the terms ‘functional’ and ‘psychogenic’ are used interchangeably. In the ICD-10, FMDs are solely categorised under the section of ‘F44.4: Conversion disorder with motor symptom or deficit’ – a psychiatric diagnosis. Some experts have put forward a case to have FMDs in the neurology section of the upcoming ICD-11.

Functional neurological diagnoses are common – one large study of new referrals to neurology outpatient clinics showed prevalence of 605/3781 (16%). There is also evidence that 1 in 5 FMDs begin after the age of 60 years. Functional tremors (FTs) are the most common forms of FMDs, accounting for around half of such patients. FTs are distinguished from organic disorders using clinical features, key differentiators being: distractibility, fluctuations in severity, and variability of affected body parts. We present two examples of functional tremors to illustrate the heterogeneity of this diagnostic construct and hence the need for an individualised approach to patient management.

**Case 1**

A 79-year-old gentleman who lived alone was admitted to hospital with chest pains. In 2016 but no medical cause was ever found. During this admission he developed a left-handed tremor, which progressed to his right hand and finally to both of his legs. On discharge, his tremors progressively worsened – he was reviewed by a neurologist with an interest in FNDs who suggested the diagnosis of FTs and explained the involuntary nature of FTs and the variable prognosis.

The patient’s medical history included triple heart bypass and reflux disease. He said that all his joints felt painful, he was always fatigued, and it took him an hour to get to sleep every night. He has had anosmia for many years. His tremors become worse if he is relaxed but can improve if he is focussed on a task. The patient is not concerned about his tremors, except for the impact they have on his walking as he can get non-specific sensations of weakness in his legs bilaterally. His exercise tolerance has rapidly declined in the last six months, even though he still manages to play bowls locally. His FTs have started to cause him pain in recent months and occasionally tremors wake him up at night. There was no tremor personification noted.

On examination, he had bilateral Hoover’s sign and tremors that vary in amplitude and are distractible. His tremors also varied in frequency and direction depending on task and attention, including evidence of entrainment. They were mainly visible in his hands and legs, lateralisation varies. There were no cerebellar signs, and no extrapyramidal signs. CT head showed mild cerebral atrophy and small vessel disease in keeping with the patient’s age.

Over the last two years Mr X says he has been generally low as he cannot do the things he used to enjoy due to his physical problems. After he was discharged from hospital in
2016, he said this was the lowest he has ever felt, feeling that everyone was giving up on him.

In terms of management, the patient has had multiple sessions of cognitive behavioural therapy (CBT) and physiotherapy. He has had trials of fluoxetine, venlafaxine and citalopram, none of which he feels made any difference to his mood, which has remained low. He has recently been started on pregabalin. Mr X thinks his tremors will get progressively worse and has little hope for any improvement in the future.

**Case 2**

A 66-year-old lady who lived with her sister reported her FTs began at some stage in the summer of 2016, however, she cannot recall the exact time or character of the onset of symptoms. For the first few months, the tremor was very mild and predominantly in her hands with occasional leg involvement. In early December 2016, her son who suffered from Asperger’s was attacked by a neighbour in front of her and she physically stepped in to break it up, sustaining arm and leg injuries. This event caused a sudden and significantly noticeable exacerbation to her tremors and began to affect her whole body. She was seen by a consultant neurologist soon after this traumatic event and was diagnosed with FTs; no further investigation, such as brain imaging, was deemed necessary.

The patient suffered from multiple chronic medical problems, of note was a 20-year history of COPD, which caused significant dyspnoea and limits her physical activity. She was also being treated for type 2 diabetes and hypertension.

Her tremors can come entirely out of the blue and vary in intensity, duration and site. This said, they often occur during a period of acute stress – eg phone calls from children regarding difficult matters or news. She noted that she can distract herself from the tremors by going for a short walk, which reduced their extent. Although rare, she has been awoken by severe tremor episodes. There was no tremor personification noted. On examination, her bedside neurological examination was normal. There was a mild postural tremor, which was entirely distractible. Her tremors were most notable in the right hand but varied in intensity, amplitude and direction with distraction – evidence of entrainment was not clearly identified. There were no cerebellar signs, and no extrapyramidal signs.

In the last year since the attack on her son, the patient’s tremors have progressively improved, yet are still distressing to her; she recognises the relationship between emotional stress and her tremors worsening. She finds she becomes frustrated with herself during some episodes.

The patient has been taught relaxation/distraction techniques to control her tremors – she finds these useful and effective. She was started on sertraline and was awaiting review by clinical psychologists. She was hopeful that with time her tremors may go away.

**Differential diagnoses**

The examination features elicited from both patients clinically directs towards a functional movement disorder. This said, organic causes of tremor (eg Parkinson’s disease, essential tremor, hyperthyroidism, alcohol/drug withdrawal) were considered yet no conclusive evidence was found to support any of these.

**Treatment**

The evidence regarding treatment of FMDs is lacking. Often, management is decided on an individual case-by-case basis, taking into account any specific events that coincided with the start of their symptoms. Current practice usually includes referral to psychological services, explanation of the diagnosis and provision of information to the patient.

**Discussion**

Being a diagnostic criterion for FMDs, the fact that both patients’ tremors were entirely distractible and variable in direction, amplitude and frequency was not surprising. There are, however, more subtle similarities between the two cases. Both of their tremors began in one hand and rapidly progressed to the entire body. Both patients also noted a disturbance to their gait as a consequence of their tremors and an effect on their sleep. Both patients are engaging well with mental health services and have a closer and supportive relationship with their children. Furthermore, both cases had traumatic life events around the time their symptoms began; in case 1 – a hospital admission, and case 2 – an attack on her son. A recent review found that stressful life events were significantly more common in people with FMDs and may be relevant to the aetiology of the condition for some patients.

Despite the similarities outlined above, there are differences between these two cases. The progression of their FTs were highly different: the patient in case 1 has had deterioration in his symptoms over time, yet in case 2 there was steady improvement. Emotions also affect these two patients’ tremors in contrasting ways; relaxation caused almost full resolution of the second patient’s symptoms but first patient found his tremors were at their worst when he was most relaxed.
Similarly, stress exacerbated tremors for patient 2 but partially resolved the first patient’s. Both patients noted the effect of walking: the first patient found this worsened his tremors but the second patient, quite conversely, started to use walking as a way of alleviating her tremors when they were most severe. The first patient was not hopeful regarding the future and could not see his tremors improving. This was in contrast to the second patient who believed with the correct professional support her tremors could be cured.

Learning points
- For patients with distractible and highly variable tremors, FMDs should be considered
- Thorough explanation of the diagnosis and places to find more information should be provided to patients with FMDs. An example of this would be to direct patients to ‘neurosymptoms.org’, a website written by an expert in the field.
- Patients perceive diagnoses of FTs/FMDs in very different ways – a personalised approach to psychological therapy is likely to be important
- There may be a correlation between a traumatic life event and initiation of FTs; does it trigger an involuntary response leading to a cascade of somatic symptoms?
- More high-quality research is needed to make evidence-based decisions on the management of FMDs

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Declaration of interests
No conflicts of interest were declared.

References