



Psychogenic parkinsonism

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ABSTRACT

Parkinsonism can be psychogenic, and psychogenic parkinsonism is about 10% of psychogenic movement disorder patients. Patients can present with any feature or combination of features of organic Parkinson's disease. There are clinical clues that can lead to the correct diagnosis, and laboratory testing with clinical neurophysiology or DAT (dopamine transporter) scanning can be helpful as well. Patients may have both organic Parkinson's disease and psychogenic parkinsonism, and this might be considered a psychologically induced aggravation of the organic disorder.

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1. Introduction

Psychogenic movement disorders (PMDs) are movement disorders of presumed psychological cause [1–3]. They are a subset of disorders seen in all of medicine, sometimes called “medically unexplained symptoms”. In Neurology, other such disorders include psychogenic non-epileptic seizures, paralysis, sensory loss, visual loss, aphonia and even loss of identity. PMDs are frequently seen in movement disorder clinics, but we actually know little about their pathophysiology, the diagnosis is often difficult to make, the treatment is poor, and there is even difficulty in discussing the problem with the patients. Considerable research is needed in all aspects. The emphasis in this review is on the diagnosis, with a particular attention to psychogenic parkinsonism.

There are several major underlying psychiatric diagnoses with PMDs, conversion disorder, somatization, factitious disorder and malingering. The idea of conversion is basically Freudian, a psychological symptom is unconsciously converted into a somatic symptom in order to deal with the psychological symptom. If the conversion is successful, the psychological symptom is ameliorated or even completely relieved. Somatization disorder is essentially multiple conversions beginning early in life. Factitious disorder is the voluntary production of the symptoms for a psychological need. Malingering is also voluntarily produced, but in this case, the person has no real psychological problem. Instead, the person has a specific goal such as

acquisition of drugs or to avoid going to jail. The separation of the first two from the last two depends on whether the disorder is involuntary or voluntary, and this may be difficult to decide. Unfortunately, we cannot determine this easily. There is no good method to determine whether someone is lying (except perhaps for secret surveillance). When litigation is involved, there may well be an increased incidence of malingering. However, most cases are likely to be involuntary, and this review will focus on conversion.

Psychiatric evaluation often reveals an underlying depression, anxiety or personality disorder. Acute or chronic stress is also frequent. This aspect is important since these psychiatric conditions are generally deemed to be etiologic and the target for therapy. At times there is no apparent psychiatric disorder. It might well be that the patient is not willing to share such symptoms at first, but will eventually if the doctor gains the patient's trust. A Freudian view might be that there really is a psychological factor, but the conversion has been fully successful. In any event, it is worth continuing to probe for such underlying disorders. We do not really understand the biology, and pursuing and treating psychiatric aspects is all that we can do at present.

There can also be a concomitant organic movement disorder, and this is another factor that can make the diagnosis difficult. It is well known that patients with psychogenic nonepileptic seizures sometimes have organic seizures as well, and that patients with multiple sclerosis have frequent psychogenic symptoms. Separating which is which is not easy, and it is a particular problem to identify a mild organic disorder when the psychogenic disorder is flagrant.

There are a number of clinical neurophysiology methods that can be useful to recognize psychogenic myoclonus and psychogenic

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tremor, and there are only less objective methods available for other psychogenic movement types. I have summarized these methods elsewhere, [4] and they are getting to be used more often. Indeed, the identification of psychogenic tremor and myoclonus is some of the best established uses for clinical neurophysiology in movement disorders. There is some early progress in understanding the pathophysiology coming from both the clinical neurophysiology and neuroimaging. There is the idea developing that abnormalities in the limbic system might cause an abnormal driving of a relatively normally functioning motor system [5].

After making the diagnosis, the next task is to inform the patient. This can be rather difficult as patients seem to prefer organic diagnoses. There needs to be an individual approach. Many neurologists now prefer to describe the condition as a “functional” disorder. The structure of the brain is normal (the good news), but the brain is not functioning normally (the bad news). There is a software problem, not a hardware problem, and it is possible to get better. Intensive psychotherapy and physical therapy can be helpful with these patients, but often working with psychiatrists is difficult since they may not recognize the disorder. Good communication with your psychiatric consultant is critical. Prognosis is currently poor for most of these patients. When thinking about prognosis, it is important to consider all the patient's symptoms since these patients may have multiple medically unexplained symptoms. Treating the movement disorder may only be part of the problem. We often refer patients to the website <http://www.neurosymptoms.org> which has some nice explanations and gives the patients a sense that they have an established diagnosis shared by others.

2. Clinical features

Psychogenic movement disorders can present as tremor, myoclonus, dystonia, paroxysmal disorders, parkinsonism, mixed conditions and unclassified conditions. Psychogenic parkinsonism is about 10% of cases of psychogenic movement disorders [6–8]. All aspects of parkinsonism can be present, but there are clues that are suggestive of psychogenicity. There are some general clues common to all psychogenic movement disorders. The manifestations may have a sudden onset and a non-progressive course, may vary over time, may not be consistent and demonstrate many different types of movement, and might disappear with distraction. There might be other psychogenic signs such as give-way weakness or non-organic patterns of sensory loss. Movements may be generated with great “apparent” effort and lead to fatigue. Performance with everyday tasks such as buttoning a shirt might be done better than the standard neurological tests.

Tremor might be present in action as well as rest [9,10]. When transitioning from rest to action, classic rest tremor typically has a brief decrease in amplitude before returning as “re-emergent tremor.” This might be lacking in psychogenic tremor. Finger tremor is unusual in psychogenic tremor. Tremor entrainment is very helpful when present [11,12]. This sign is elicited by asking patients to tap at various frequencies with another limb. A change induced in the tremor, particularly to take up the same frequency and phase as the voluntary tapping is the entrainment. A similar test is to ask for a quick (ballistic) movement of another limb. A pause in the tremor during the movement is seen with psychogenic tremor. The ballistic movement test has to be carefully evaluated; we have seen some patients with organic Parkinson's disease who have had reductions in tremor with this maneuver. Of course, patients with Parkinson's disease can have action tremor as well as rest tremor, so evaluation has to be thoughtful. Quantitative testing of Parkinson's disease tremor shows a slightly different frequency in the two limbs, but this may well be exactly the same, and in phase, with psychogenic tremor [13].

Rigidity can be present, but would have the voluntary oppositional character of “Gegenhalten”. Cogwheeling will not be found.

Bradykinesia may appear with marked slowness and be very effortful. Patients with Parkinson's disease seem to run down, either in speed or amplitude of movement, with successive movements. This is called the sequence effect, [14] and with psychogenic parkinsonism, there is not progressive slowness or hypometria.

Balance testing might show instability with very small perturbation.

The gait disorder may demonstrate better balance than is claimed. Arm swing can be reduced, but the posture of the arm seems in a stiff posture and may not improve with running, as it might do in Parkinson's disease.

Speech abnormalities might be seen, but these have been inconsistent in nature. Baby talk has also been described in these patients.

The patients may be highly suggestible and responsive to placebo, but, unless extreme, this is an uncertain observation since patients with organic Parkinson's disease are also highly placebo responsive. The placebo response in Parkinson's disease is associated with dopamine release, [15] so it is not surprising that it should be effective.

In the first series of psychogenic parkinsonism with 14 patients, all had bradykinesia, 12 had tremor, 12 had difficulties with balance and gait, and 6 had apparent rigidity [6]. In another series of 9 patients, 7 had a predominant tremor form and two had akinetic rigid form, but all had other signs or symptoms beyond what might be expected in Parkinson's disease [16]. This latter point is important; the diagnosis of psychogenicity may well depend in part on the combination of multiple features that do not fit together as well as the characteristics of each feature.

3. Relationship between psychogenic parkinsonism and organic Parkinson's disease

The literature suggests that patients with psychogenic parkinsonism may have a higher percent of underlying organic Parkinson's disease than for other psychogenic movement disorders. In one series of 9 patients, 5 had both and 4 had pure psychogenic disease as their final diagnosis [16]. One patient in this series, originally thought to have both, was recategorized as pure psychogenic after follow-up including repeat imaging. In another series of 5 patients, 2 had both organic and psychogenic disease [17]. Dopamine transporter (DAT) SPECT scanning is a useful test in these patients. It will be abnormal in Parkinson's disease, normal in psychogenic disease, and surprisingly abnormal in psychogenic disease with underlying organic disease [16–18]. If there is both, it might still be worthwhile treating the psychogenic aspect, as this can produce improvement.

Moreover, it appears that psychogenic movement disorders or other somatizations may be an early “pre-motor” manifestation of Parkinson's disease [19]. Somatoform disorders were looked for in the year of diagnosis for a cohort of 942 patients with various neurodegenerative disorders including 412 patients with Parkinson's disease. A somatoform disorder preceded the Parkinson's disease diagnosis by 6 months to 10 years in 28 patients, a rate higher than Alzheimer disease, multiple system atrophy, progressive supranuclear palsy, or frontotemporal dementia. The most common manifestations were multilocalized pain with gastrointestinal symptoms, hypochondriasis, body deformation delusions, and paresis. Other manifestations were seen in only one or two cases, and the only psychogenic movement disorder prior to diagnosis was psychogenic parkinsonism. Psychogenic parkinsonism preceding organic Parkinson's disease was diagnosed in only one patient and might be particularly tricky to diagnose. Note was also made in this study that dementia was more common in the follow-up period for those patients with somatoform disorders than those without.

Similarly, somatizations were frequent prior to Lewy Body Dementia [19]. Perhaps there is something about the pathology

associated with the Lewy Body that predisposes to somatization. It certainly seems likely that there is a fundamental biology, and Lewy Body pathology might be a clue to understanding conversion in general, and psychogenic movement disorders better. Clinically, the lesson might be that somatization is a frequent feature in Parkinson's disease, and that psychogenic parkinsonism may be a psychologically induced aggravation of a preexisting organic disorder.

Conflict of interest

None.

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