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Severe aggravation of blepharospasm in Fisher's syndrome

Sir: Essential blepharospasm has been considered a cranial dystonia caused by a biochemical imbalance of the extrapyramidal system[1 2] with no relevant peripheral nervous system contribution. Fisher's syndrome is characterised by external ophthalmoplegia, ataxia and arreflexia and represents a limited form of acute idiopathic polyneuropathy (Guillain-Barré) syndrome. Both processes coincided in a 67 year old male. At 20 years of age he began to suffer occasional involuntary lid closure, more prominent in the right eye, but without disability. These spasms had increased slightly in recent years, often triggered by bright light. After an episode of acute febrile rhinopharyngitis 15 days earlier, over a week he developed severe progressive ataxia, complete external and internal ophthalmoplegia, the eyes remaining in neutral position, ptotic but without diplopia, and general arreflexia. Consciousness was normal. CSF showed 0 cells, glucose 0·68 g/l and protein 0·63 g/l. In the next few days, transitory breathing and swallowing difficulties developed, as well as mild weakness of the facial musculature. In this situation of complete ocular paralysis, the patient made constant gesticulation due to frequent, occasionally sustained, bilateral blepharospasm attacks. This picture regressed to the previous situation after the ophthalmoplegia resolved some months later.

The severe aggravation of facial spasms in our case was striking, well in excess of what could have been expected from the emotional stress of hospitalisation or appearance of new symptoms. A coincidental relation to an improbable midbrain lesion is purely speculative. A lesion located in the midbrain tegmentum was discovered in only one case of Fisher's syndrome[3] and had not been confirmed in other necropsy cases. On the other hand, in only one case of blepharospasm was a well-localised upper brain stem lesion found.[4] In our patient, the futility of efforts to counter ocular paralysis and palpebral weakness (m. elevator palpebrae) may have accentuated the actions of antagonist muscles (m. orbicularis oculi). The excess of frustrated central excitation and lack of reciprocal inhibition is considered the EMG pattern of dystonia[5] and could explain our case.

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Orthostatic tremor: diagnostic entity or variant of essential tremor?

Sir: Heilman[1] described three patients with orthostatic tremor, that is, tremor of the legs and trunk which commenced shortly after standing but disappeared when walking, leaning against a support, sitting or lying. Heilman considered orthostatic tremor to be a distinct neurological entity related to the maintenance of static posture.

Certain features distinguish orthostatic tremor from classical essential tremor. The oscillation frequency of orthostatic leg tremor has been reported to be between 14 and 18 Hz,[2–4] far higher than the frequency range of classical essential tremor.[5] Furthermore, it has been reported that propranolol, the drug of choice in essential tremor, is ineffective in orthostatic tremor.[1 6] Clonazepam (2–4 mg/day) has been found to be beneficial in orthostatic tremor[1 4 6] but to be of little benefit in essential tremor.[7]

There is, however, some overlap in the phenomenology of orthostatic tremor and essential tremor. One of Heilman's orthostatic tremor patients had a concurrent postural tremor of the hands and a family history of essential tremor.[1] Wee *et al.*[6] described a family in which some members had a 7–8 Hz tremor of the hands which was responsive to propranolol, and others had a 6–7 Hz tremor of the legs on standing which was responsive to clonazepam but not to beta-blockers.

We describe a patient with a diagnosis of essential tremor of the hands and legs. Leg tremor, but not hand tremor was successfully treated with clonazepam.

A 53 year old women had a 15 year history of trembling of the legs when standing unsupported. The tremor disappeared on walking or when leaning against a support. There was no tremor at rest or when seated with the legs held outstretched against gravity. For the last 3 years a postural tremor of the hands had been also present. On examination, there were no general or neurological abnormalities other than tremor (see below). In particular there were no cerebellar or Parkinsonian signs. Her father had a 6 year history of hand tremor. Objective (accelerometric) measures showed a 7·0 Hz tremor of the distal muscles of the upper limbs when held outstretched in pronated posture. A 6·4 Hz tremor was present in the proximal muscles of the lower limbs when standing but was absent during sitting and walking. Diazepam had been tried without success. Propranolol (30 mg/day) was ineffective but higher doses were not tried. Primidone initially produced a marked

improvement in both hand and leg tremor, but the beneficial effect was only sustained for about 3 months. Clonazepam was started at a dose of 2 mg/day and increased to 4 mg/day over a 2-month period. Amplitude and frequency of hand and leg tremor was measured objectively (see ref 8 for method) throughout incremental dosing and again 6 months after reaching the optimal dose. Leg tremor showed a marked dose-related decrease in amplitude on clonazepam by objective measures (fig) and by the patient's own reports. Hand tremor was unchanged, objectively and subjectively, by clonazepam.

Involvement of the legs is not uncommon in essential tremor. In a survey of 185 consecutive essential tremor patients we found leg tremor to be present in 29 (15·7%) although isolated leg tremor (that is, in the absence of hand tremor) was found in only 4 (2·2%) (unpublished data). Essential tremor of the legs is generally present during any voluntary muscle activity but is often exacerbated on standing.

In a single case study, Thompson *et al*[2] noted that 16 Hz orthostatic tremor of the legs was not present during all types of voluntary muscle activity thus tremor occurred when standing or pressing the feet against the floor as if preparing to stand, but was absent when the patient was seated and extending the leg horizontally against gravity. The authors concluded that orthostatic tremor arose from an abnormality in the organisation of the motor program for standing. Deuschl *et al*,[3] however, described a patient with a similar, 16 Hz leg tremor which was present during all kinds of muscle activation in sitting, lying or standing positions.

The pathophysiology of essential tremor and orthostatic tremor is not known. Inter-patient variability in the clinical appearance of essential tremor and in its responsiveness to drugs suggests that essential tremor is not a homogenous disorder[9] although, as yet, there are no definitive criteria for the classification of sub-types.

Some studies have shown differences in pharmacological responsiveness of essential tremor of different body parts. Essential tremor of the head or voice has been reported to be more resistant to propranolol treatment.[10,11] Primidone was found to be effective in hand tremor but ineffective in head tremor in the same patients.[12]

Furthermore, clonazepam, reported to be of little benefit in classical essential tremor[7] was found to be effective in a "kinetic-predominant" variant of essential tremor (that is, minimal tremor on sustained posture which was exacerbated by voluntary movement).[13]

The patient we have described was diagnosed, on the basis of clinical presentation, spectral analysis of tremor and family history as having essential tremor of the hands and legs. Leg tremor was only evident when standing, disappeared on walking and was not present when the patient was seated, holding the legs outstretched against gravity. On incremental doses of clonazepam, objective measures showed no effect on hand tremor but a dose-related decrease in leg tremor amplitude (up to 80% reduction on 4 mg/day).

This study indicates that response to clonazepam is not unique to high frequency orthostatic tremor. Orthostatic tremor (defined by the behavioural situation in which it occurs rather than frequency characteristics) may be a variant of essential tremor showing a different pharmacological responsiveness to that of classical hand tremor.

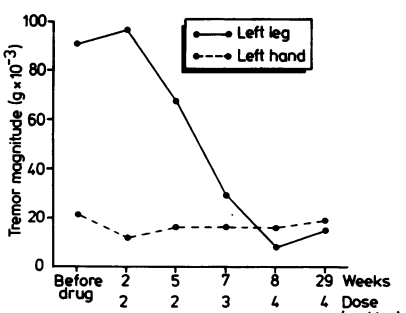

Fig *Magnitude of hand and leg tremor (units of acceleration, g = 981 ms^{-2}) measured during incremental dosing with clonazepam and at 29 weeks follow up.*

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Serum vitamin E concentrations in adult-onset spinocerebellar degeneration.

Sir: Deficiency of vitamin E is now recognised as a cause of certain spinocerebellar syndromes,[1,2] including those associated with abetalipoproteinaemia and other conditions in which there is chronic malabsorption of fat. More recently, vitamin E deficiency was described in an ataxic patient without evidence of generalised fat malabsorption.[3]

The principal neurological features of vitamin E deficiency are limb and gait ataxia, areflexia and loss of proprioception and vibration sense. Patients presenting in this way are often diagnosed as having spinocerebellar degeneration for which there is no specific treatment. The possibility of occult vitamin E deficiency raises the hope of cure for some of these patients. With this question in mind, we measured vitamin E concentrations in an unselected group of adult Chinese patients with spinocerebellar degeneration.

Fourteen patients (9 male, 5 female) diagnosed as having spinocerebellar degeneration were studied. All had ataxia with long