month's treatment with imipramine which was increased till at least a minimum daily dose of 350 mg. All 3 patients showed a dramatic improvement which began within 3 to 6 days of the addition of lithium carbonate 300 mg t.d.s. Thus it is unlikely that the apparent antidepressant effect of the addition of lithium was merely a spontaneous remission or a late response to the imipramine. In all 3 patients the improvement was sustained, the patients were discharged and follow-up revealed that they were well and had obtained employment.

All 3 patients had a different type of recurrent affective disorder—1 unipolar, 1 bipolar, and 1 bipolar-II. All 3 had depressive episodes of different severity (Hamilton scores ranged from 17 to 35). One was a DST non-suppressor and 2 suppressed normally. One had a family history of affective disorder but 2 did not. Future research will attempt to identify clinical and biochemical features of the subgroup of treatment refractory depressed patients who may respond to lithium potentiation.

ALEC ROY
DAVID PICKAR
Clinical Neuroscience Branch, NIMH, Bethesda, Maryland 20205

References

DEMONTIGNY, C., COWINOYER, G., MORISSETTE, R., LANGLOIS, R. & CAILLE, G. (1983) Lithium carbonate addition in tricyclic antidepressant-resistant unipolar depression: correlations with the neurobiologic actions of tricyclic antidepressant drugs and lithium ion on the serotonin system. *Archives of General Psychiatry*, **40**, 1327–1334.

——, GRUNBERG, F., MAYER, A. & DESCHENES, J.-P. (1981) Lithium induced rapid relief of depression in tricyclic antidepressant drug non-responders. *British Journal of Psychiatry*, **138**, 252–256.

HENINGER, G. R., CHARNEY, D. S. & STERNBERG, D. E. (1983) Lithium carbonate augmentation of antidepressant treatment: an effective prescription for treatment-refractory depression. *Archives of General Psychiatry*, **40**, 1335–1342.

LOUIE, A. & MELTZER, M. (1984) Lithium potentiation of antidepressant treatment. *Journal of Clinical Psychopharmacology*, **4**, 316–321.

NELSON, J. C. & BYCK, R. (1982) Rapid response to lithium in phenelzine non-responders. *British Journal of Psychiatry*, **141**, 85–86.

PRICE, L. H., CONWELL, Y. & NELSON, J. C. (1983) Lithium augmentation of combined neuroleptic-tricyclic treatment in delusional depression. *American Journal of Psychiatry*, **140**, 318–322.

Huntington's Chorea without Dementia

DEAR SIR,

Following the recent account of a 54-year old man with probable Huntington's chorea presenting without evidence of dementia (Turner, *Journal*, May 1985, **146**, 548–550), we should like to draw your readers' attention to a similar case which came to post mortem.

The patient was a 68-year old man who first presented at his local health centre in a condition felt to reflect marked deterioration in his physical and mental state. He was referred to MOPD where choreiform movements of his hands and head were noted. Although his mental state was considered odd by the physician, he described him as being "well-preserved" mentally, though he felt that the man might have Huntington's chorea. A further referral for neurological opinion added little—he was found to have symmetrical choreiform movements, but otherwise no abnormal signs, was "probably not demented" and was considered to have insight into his deteriorated state.

A further review appointment at MOPD found him well oriented in time and place but very unkempt. Two months later he appeared at the health centre saying he could not cope and that he would throw himself out of the window if forced to go home. He was admitted to this hospital for psychiatric assessment, where he stayed until his death some sixteen months later. During this time the details of his past history emerged.

Born in a small village in Eastern Poland, his family had mostly perished in the concentration camps during the 2nd World War. Escaping from a POW camp, he came to Scotland in 1942, married a Scottish woman, but had separated from her some 25 years previously. For over twenty years he had had very little to do with either wife or children though the family continued living in the same area. As a result of living like a recluse it was difficult to document the history of the choreiform movements and self neglect, though both had been present for some years before he had been referred to MOPD.

On admission to the hospital he appeared intellectually "reasonably" preserved and was fairly well oriented. Psychometric testing was carried out during the first month of his stay. He scored 21 on the Coloured Progressive Matrices (IQ 95), and 42 on the Wechsler Memory Scale (MQ 92), both within the limits of a normal performance for a man of his age. On the CAPE cognitive and behavioural assessment scales he obtained 'B' grades, indicating mild impairment and low level of dependency. He was continent, able to dress, wash and feed himself. Six weeks after his first assessment he was given a repeat psychometric examination. His scores on the CPM rose to 24 and his WMS score to 46 (still within the normal range). Almost one year after his admission he was interviewed after a request to have his

money transferred from the hospital account to a nearby bank. He was considered to show a good grasp of financial matters and was given the go-ahead to do so. He continued to play chess and snooker with the staff. His chest condition gradually worsened and he died of bronchopneumonia some sixteen months after admission.

Neuropathological examination of the brain indicated an absence of observable atrophy of either cortex or the basal ganglia. The basal arteries were virtually free of atheroma, and cortical sections failed to reveal any significant abnormalities. Noticeable neuronal depletion and astrocytic gliosis were, however, recorded in the putamen and caudate nucleus leading the neuropathologist to comment: "The histological changes are so characteristic that the diagnosis must be accepted . . ."

Following post mortem confirmation of the diagnosis one of the patient's sons was referred for psychiatric consultation, presenting with depression and observably abnormal involuntary movements. It seems probable that this man has inherited the disease. Even more recently the daughter-in-law has reported hearing that the patient's surviving brother in Germany has developed tremors and jerky movements, though it has not proved possible to confirm this.

Apart from the absence of either clinical, behavioural or psychometric evidence of dementia, and the late age of presentation, other clinical manifestations were quite typical—the personality abnormalities, the emotional impulsivity, progressive self neglect and choreiform movements. These findings raise several interesting and important questions, namely the extent to which any 'sub-cortical dementia' can exist independently of cortical involvement (Albert *et al*, 1974), and the limitations in identifying 'early' psychometric patterns of the disease (Josiassen *et al*, 1982). As Dr. Turner also points out, it raises the interesting possibility of separting the movement disorder from the cognitive impairment in Huntington's disease. Certainly we feel that our case adds substantially to the literature in documenting the possibility of a diagnosis of Huntington's chorea being made in the absence of dementia and indicates caution against viewing dementia as a "constant" feature of the disease (Cummings & Benson, p. 74). Whether or not Huntington's chorea patients without dementia are indeed rare is not clear. For example the last patient dying in this hospital with a positive history for the disease evinced few signs of intellectual deterioration throughout the seven years of his stay.

J. L. WADDELL

Herdmanflat Hospital, Haddington, East Lothian

C. J. GILLARD

University of Edinburgh

References

ALBERT, M. L., FELDMAN, R. G. & WILLIS, A. L. (1974) The sub-cortical dementia of progressive supranuclear palsy. *Journal of Neurology, Neurosurgery and Psychiatry*, **37**, 123–130.

CUMMINGS, J. L. & BENSON, D. F. (1983) *Dementia; A Clinical Approach*. Boston: Butterworths.

JOSIASSEN, R. C., CURRY, L., ROEMER, R. A. & DEBEASE, C. (1982) Patterns of intellectual deficit in Huntington's disease. *Journal of Clinical Neuropsychology*, **4**, 173–183.

Tourette Syndrome and Drug Addiction

DEAR SIR,

I read with interest Bleich *et al's* account of coexisting Tourette syndrome (TS) and mania (*Journal*, June 1985, **146**, 664–665). Although this syndrome is often thought to involve mainly motor and vocal manifestations, Bliss *et al* (1980) described some of the sensory experiences of patients with TS. In some patients the tic manifestation is characteristically preceded by a brief irritative sensation which seems to act as a stimulus for relief by a tic-like motor activity. The motor manifestation can often be voluntarily inhibited for a time, but at the cost of a subjectively-perceived progressive build-up of tension, leading ultimately to some form of motor expression. "What is basic to the TS overt actions... is the (almost) intolerable need to produce a sharp punctuation that will at one and the same time gratify and terminate an almost intolerable urge" (Bliss *et al*, 1980). It appears, then, as if the TS sufferer must endure a continual succession of sensory-motor craving-and-relief cycles.

Another type of patient we see whose life is dominated by cycles of craving and relief is the opiate addict. Research has implicated the locus coeruleus (LC), a noradrenergic brainstem region, as being a prime site of exogenous opiate-endorphin-catecholamine interaction. It has been hypothesised that an effect of chronic opiate administration may be to cause a decrease in endogenous opiate release and synthesis, or otherwise derange the endorphin system's functional activity. Since one of the activities of the endorphin system is to regulate norepinephrine production, a consequence of this derangement is a noradrenergic rebound when the exogenous opiate drug is no longer forthcoming, producing the unpleasant symptoms of withdrawal (Gold & Dackis, 1984). In fact, the LC may be involved in other, naturally occurring physical and psycho-