A 56 year old man with hypertension and hypercholesterolaemia had a sudden attack of coffee cup vertigo and other characteristic features of vertigo were not present. There were no other alterations on neurological examination. Two weeks later the patient was asymptomatic. Brain CT and MRI showed ischaemic lesions in the right hemisphere, suggesting an ischaemic infarction (figure). No brainstem or cerebellar lesions were found.

Visual tilt illusion has been described in unilateral peripheral vestibular lesions; in brainstem injuries, typically in the Wallenberg syndrome, in other medullary and mesencephalic lesions, and in thalamic and parietoinsular cortical disorders. The most frequent conditions associated with visual tilt illusion are vascular lesions.1 As far as we know, there are no reports on documented isolated cerebellar injuries associated with the illusion.
possible involvement of dopaminergic striatal receptors in dystonia, we measured the availability of striatal D2 receptors in patients with writer’s cramp using [(123I)IBZM SPECT].

Ten consecutive right-handed patients (eight male and two female) were classified into three groups: c (head) and six had dystonic writer’s cramp depending on whether or not the symptoms appeared only during writing. None of the patients had been treated with neuroleptic, dopaminergic, or anticholinergic drugs or botulinum toxin. Hypokinesia, rigidity, and tremor testing tremor were present in all patients. Bradykinesia of the hands was assessed with a pegboard test, measuring the time (s) required to invert eight pegs. Pegboard performance of patients was compared with that of 46 age matched controls. Results from [123I]IBZM SPECT were compared with 12 other age matched controls from an earlier study.5

A brain dedicated SPECT system, the Strichman Medical Equipment 810X, was used. Two hours after intravenous injection of approximately 185 MBq [(123I)IBZM (Cygne BV, Technical University, Eindhoven), tomographic SPECT studies were performed. A maximum of 12 slices was made, starting at the orbitomeatal line and proceeding parallel to it (300 s/lecture; inter slice distance 6 mm). For analysis of specific striatal [(123I)IBZM binding, two slices with the highest striatal activity were summed and a template with fixed regions of interest for the striatum and occipital cortex was placed bilaterally on the summed image. The ratio of the striatal binding volume to the occipital binding volumes specific binding.

The mean ages (table) did not differ among the three groups (t tests). Left and right [(123I)IBZM striatal: occipital ratios were significantly lower in patients than in controls (t tests). There was no significant asymmetry between [(123I)IBZM ratios for the hemispheres in patients or controls (repeated measures multivariate analysis of variance (MANOVA) tests involving side, group, and group by side: P > 0.05). The pegboard test did not differ between patients with writer’s cramp and controls in either hand (t tests), showing that the patients with writer’s cramp did not have bradykinesia. There was no correlation between age or duration of disease and [(123I)IBZM ratios (Pearson’s correlation coefficients). None of the variables differed between patients with simple and dystonic writer’s cramp.

Our results suggest that the striatal dopaminergic system is involved in writer’s cramp given that patients with writer’s cramp had lower striatal [(123I)IBZM binding than controls. Unfortunately, lack of an accurate measure of the severity of writer’s cramp itself prevented us from studying the relation between severity of dystonia and [(123I)IBZM. We did not find a correlation between [(123I)IBZM ratios and duration of disease or age. This probably means that the decline in striatal D2 receptors is not linearly progressive but remains stable over many years, which accords with our clinical impression. However, because the preclinical [(123I)IBZM ratios of the individual patients were not known, it is hazardous to assess rates of decline in a small cross sectional sample.

The results raise some questions. Firstly, there was bilateral reduction of available striatal D2 receptors, whereas the symptoms were unilateral and there was no asymmetry between the hemispheres. Bilateral abnormal movements in the brain, absent in patients with writer’s cramp, has also been found by others. This bilaterality probably only means that the abnormalities found are related to particular motor dysfunctions which pass undetected if not properly challenged, as shown by the fact that many patients develop writer’s cramp on the left side, if they change to writing with the left hand. Accordingly, it is also not uncommon to find involvement of the left, or fingering hand, in musicians playing keyboards, guitars, or other stringed instruments. A second question is why the reduced availability of D2 receptors to cholinergic transmission, as assessed by [(123I)IBZM binding, two slices with the highest striatal activity were summed and a template with fixed regions of interest for the striatum and occipital cortex was placed bilaterally on the summed image. The ratio of the striatal binding volume to the occipital binding volumes specific binding.

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