Conversative visual tilt illusion associated with a cerebellar infarction

Visual tilt illusion consists of an abnormal perception of the environment, which seems to be rotated at a variable angle without any change in the visual stimuli or the characteristics of the objects. It is sometimes associated with other postural and oculotilt effects. It can be secondary to disturbances in the peripheral or central vestibular pathways.1,2 Previous reports suggest that cerebellar injuries could also cause it, but this has not been documented before. We report a case of visual tilt illusion probably associated with an isolated cerebellar lesion, studied with CT and MRI.

A 56 year old man with hypertension and hypercholesterolaemia had a sudden attack of vertigo and nausea, followed by other characteristic symptoms of a cerebellar lesion, with gait disturbance, ataxia, and dysmetria. He was admitted to hospital at his left by right hemispheric cerebellar lesion, suggesting a disturbance of the visual axes, or ocular torsion.12 Dieterich and Brandt showed that an alteration in the perceived vergence is not just the sensory consequence of the rotation of the eyes, as they can appear separately and are not proportional in degree.13 Furthermore, it is possible that not all the effects of tilt occur in one patient, and the perceptual disorder itself is the most sensitive sign of a vestibular tone imbalance in the frontal plane.14 Patients perceive the surroundings and their environment to be rotated at a variable angle, which seems to correspond to the perception of verticality and self motion.15

The tonic bilateral vestibular input builds up the actual central vestibular tone in the three major planes: horizontal or ‘yaw’, sagittal or ‘pitch’, and frontal or ‘roll’.16 It seems that central pathways that mediate vestibular function in either of the three planes travel independently of each other, so that a specific lesion could cause a disorder restricted to one of them.17 The vestibular tone in the frontal or ‘roll’ plane allows a correct perceptual, oculor, and postural alignment to the ‘gravitational vertical’, an imbalance in this tone causes a lateral tilt with alteration in perception of verticality, head and body posture, misalignment of the visual axes, or ocular torsion.18,19 Patients perceive the surroundings and their body as if they were tilted in the opposite direction to what the CNS erroneously computes as being vertical and try to adjust the visual objects and posture to it. Dieterich and Brandt suggested the hypothesis that an associated medullary ischaemia may be either ipsiversive or contraversive, depending on whether the lesion is supratentorial or infratentorial. A supratentorial disorder is unlikely because there were no other upper brainstem symptoms and MRI was normal at this level. A supratentorial disorder is unlikely because there were no other upper brainstem symptoms and MRI was normal at this level. A supratentorial disorder is unlikely because there were no other upper brainstem symptoms and MRI was normal at this level. A supratentorial disorder is unlikely because there were no other upper brainstem symptoms and MRI was normal at this level.

Physiologically, the vestibular pathways make contact with the oculomotor system, the spinal cord, and the vestibular cortex, contributing to the stabilisation of posture and perception of verticality and self motion.15,16 The tonic bilateral vestibular input builds up the actual central vestibular tone in the three major planes: horizontal or ‘yaw’, sagittal or ‘pitch’, and frontal or ‘roll’.16 It seems that central pathways that mediate vestibular function in either of the three planes travel independently of each other, so that a specific lesion could cause a disorder restricted to one of them.17 The vestibular tone in the frontal or ‘roll’ plane allows a correct perceptual, oculor, and postural alignment to the ‘gravitational vertical’, an imbalance in this tone causes a lateral tilt with alteration in perception of verticality, head and body posture, misalignment of the visual axes, or ocular torsion.18,19 Patients perceive the surroundings and their body as if they were tilted in the opposite direction to what the CNS erroneously computes as being vertical and try to adjust the visual objects and posture to it. Dieterich and Brandt suggested the hypothesis that an associated medullary ischaemia may be either ipsiversive or contraversive, depending on whether the lesion is supratentorial or infratentorial. A supratentorial disorder is unlikely because there were no other upper brainstem symptoms and MRI was normal at this level. A supratentorial disorder is unlikely because there were no other upper brainstem symptoms and MRI was normal at this level. A supratentorial disorder is unlikely because there were no other upper brainstem symptoms and MRI was normal at this level. A supratentorial disorder is unlikely because there were no other upper brainstem symptoms and MRI was normal at this level.
We did not find a correlation between severity of dystonia and \([1\text{I}]{\text{IBZM}}\) ratios. The results raise some questions. Firstly, there was a bilateral reduction of available striatal D2 receptors, whereas the symptoms were unilateral and there was no asymmetry between the hemispheres. Bilateral abnormalities of dopamine receptors in dystonia after perinatal asphyxia and with the well known efficacy of anticholinergic therapy in dystonia.

Letters to the Editor

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Ten consecutive right handed patients (eight male and two female) were classified (t test, < 0.05). There was no significant difference between 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 \([1\text{I}]{\text{IBZM}}\) SPECT were compared with 12 other age matched controls from an earlier study.

A brain dedicated SPECT system, the Strichman Medical Equipment 81OX, was used. Two hours after intravenous injection of a tracer dose of \(185 \text{ MBq} \quad [1\text{I}]{\text{IBZM}}\) (Cyang BV, Technical University, Eindhoven), tomographic SPECT studies were performed. A maximum of 12 slices was made, starting at the orbital plane line and proceeding parallel to it (300 mm slice; inter slice distance 20 mm). For analysis of specific striatal \([1\text{I}]{\text{IBZM}}\) 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 to occipital binding quantities specific binding.

The mean ages (table) did not differ among the three groups (t tests). Left and right \([1\text{I}]{\text{IBZM}}\) striatal : occipital ratios were significantly lower in patients than in controls (t test, < 0.05). There was no significant asymmetry between \([1\text{I}]{\text{IBZM}}\) 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 \([1\text{I}]{\text{IBZM}}\) 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 have reduced striatal \([1\text{I}]{\text{IBZM}}\) 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 \([1\text{I}]{\text{IBZM}}\). We did not find a correlation between \([1\text{I}]{\text{IBZM}}\) 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 \([1\text{I}]{\text{IBZM}}\) ratios of the individual patients were not known, it is hazardous to assess rates of decline from a small cross sectional sample.

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Chronic sensoric ataxia neuropathy and ophthalmoplegia with oculomotor nerve hypertyrophy associated with IgM antibodies against gangliosides containing disialosyl groups

Recent studies have shown that serum anti-ganglioside antibodies may be involved in various immune mediated peripheral neuropathies. We report an investigation of anti-ganglioside antibodies in a patient with chronic sensoric neuropathy and ophthalmoplegia associated with oculomotor nerve hypertyrophy.

A 40 year old man had been in good health when he developed subacute diplopia in 1987. At the age of 45, he developed a moderately unsteady gait after an infection of the upper respiratory tract. The symptom gradually worsened and he was unable to run at the age of 46. At the age of 48, he was admitted to hospital because of progressive numbness in all limbs and difficulty in performing fine motor movements. Treatment...