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Central Hyperdopaminergism in Peduncular Hallucinosis

SIR: Peduncular hallucinosis produces vivid, nonstereotyped, continuous, gloomy or colorful visual images that are more pronounced in murky environments.[1,2] It is of great interest that the corresponding site for peduncular hallucinosis, substantia nigra pars reticulata (SNpr),[3] has no known role in the visual process and analysis.

Case Report

An elderly man experienced a sudden onset of visual images in the evening when he was watching television at home. He saw three children dressed in dark or yellow colors playing and laughing in front of him. They did not respond when he called to them. He felt strange and knew that this was not real. He did not feel fear. The children disappeared 1 hour later. That night, he complained to his family of two similar episodes. Unfortunately, right side weakness, double vision, and sleepiness developed consequently.

On presentation, his blood pressure was 180/90 mmHg. He was sleepy but could be awakened easily. His eyegrounds showed grade I hypertensive retinopathy. Visual field, acuity, and color perception were preserved. Left oculomotor nerve palsy and right hemiparesis compatible with Weber's syndrome were detected. Magnetic resonance imaging revealed a left midbrain infarct involving the crus cerebri and SNpr. Visual imaginery lasted for 7 days.

His serum thyrotropin, T4, cortisol, corticotrophin, and gonadal hormones were normal in the acute phase of stroke. A normal prolactin and thyrotropin response to protrelin and cortisol response to low dose dexamethasone were obtained. However, serum prolactin level increased only 0.9-fold and 0.89-fold within 3 hours after a 12.5 mg and 25.0 mg chloropromazine injection, respectively, in contrast to 1.3-fold in normal subjects. A decrease of peak level to 50.6 ng/ml (normal: 66.63 [SD = 7.8 ng/ml]) and mean maximal increment to 29.3 ng/ml (normal: 55.17 [SD = 11.30 ng/ml]) were detected 90 minutes after haloperidol infusion. The area under curve was 4,140 ng/ml/min (normal: 7,649 [SD = 1,123] ng/ml/min) which was only 54% of normal. Two months later, his serum prolactin level increased 1.33-fold after a 12.5 mg chloropromazine injection.

His neurohormonal results could not be explained by stroke. A blunted prolactin response to chloropromazine and haloperidol indicates a hyperdopaminergism in the hypothalamus-adenohypophysis axis. A hyperactivity of pituitary D_{2R} is preferred as other neurohormones which are also secreted from arcuate nucleus are normal.

Comment

A similar blunted prolactin response to haloperidol is also seen in schizophrenia patients.[4] We interpret a preconditioned involvement of D_{2R} in multiple locations, rather than being restricted to the mesocorticolimbic system. A preconditioned involvement of D_R out of the SNpr's pathway may contribute to peduncular hallucinosis. The A10 DA neurons innervate the primary visual cortex, particularly the lamina VI, which modulates geniculate activity, and lamina V, which regulates superior colliculus.[5] A disconnection of these structures may reduce visual input to visual cortex or induce cortical excitation to produce visual imaginery without affecting the visual function. Indeed, occipital hypometabolism has been found in peduncular hallucinosis.[2] Additionally, a preconditioned vulnerability of D_{2R} also explains the rarity of peduncular hallucinosis among patients with midbrain lesions.

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Psychiatric Manifestation of SSPE

SIR: Subacute sclerosing panencephalitis (SSPE) is a slowly progressive disorder that is typically seen in children and adolescents and has an invariably fatal outcome.[1] Subacute sclerosing panencephalitis (SSPE) has been reported from all parts of the world, but in the West it is considered a rare disease with fewer than 10 cases per year reported in the United States.[2] Few reports exist of SSPE initially presenting with psychiatric symptoms. We would like to report a child who initially presented to a psychiatry clinic and was later diagnosed with SSPE.

Case Report

A 13-year-old boy with no family history of any psychiatric or neurological illness presented to the neurology outpatient clinic with difficulty in walking. The boy was apparently well about 2 months prior when the parents noticed that the child had become unusually quiet and withdrawn. He began to show less interest in his studies and refused to meet his friends, confining himself to his house most of the day. The usual cheerfulness and naughtiness of the child had disappeared and he showed little inclination for talking to his parents and siblings. On a few occasions his parents found him crying without any particular reason. The patient also started having difficulty in memorizing his schoolwork and finishing his homework began to take longer. A month later the patient would laugh without any particular reason and would start crying when he was questioned. These rapid changes of mood made the parents seek a psychiatric consultation and he was diagnosed with having major depression and was prescribed fluoxetine, 20mg/day, by the psychiatrist. The boy developed difficulty in walking and needed support to walk a week later. The parents noticed sudden jerks of the upper limbs and sought a neurology consultation. The child had not received a mumps, measles, and rumps vaccination and had measles at the age of 5. The physical examination was normal with myoclonic jerks in the upper limbs. A mental state examination revealed labile affect, with no delusions or hallucinations. Initial computed tomography (CT) scan and magnetic resonance imaging scan did not reveal any abnormality. The EEG showed bilaterally symmetrical periodic complexes. The CSF immunological study tested positive for IgG measles antibody in high titers. A diagnosis of SSPE was made and the parents were counseled about the illness and the prognosis. The child's condition rapidly deteriorated and he was completely bedridden.

Comment

SSPE is a unique slow viral disease in which the measles virus has been identified as the pathogen. The usual age of onset is between 5 and 12 years.[1] Psychiatric manifestations of SSPE that have been reported include schizophrenia with delusions and hallucinations and nonspecific psychosis.[3,4] The emotional lability and depressive symptoms in the initial phase of the illness is interesting. Psychiatrists should be aware of the varied presentations of SSPE and should include it in the differential diagnosis of a young child presenting with cognitive decline and depressive symptoms.

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Othello Syndrome Secondary to Right Orbitofrontal Lobe Excision

The Othello syndrome, or delusional jealousy, is a content-specific delusion characterized by the belief that the spouse or sexual partner is unfaithful.[1] The pathophysiological and psychological mechanisms underlying the development of the syndrome in patients with cerebral disorders remain unclear. It has been suggested that cognitive deficit plays an important role, but spe-