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Case report/Kazuistyka

Transient splenial lesion in patient with malignant neuroleptic syndrome

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ABSTRACT

A 23-year-old woman presented with abnormal behavior and hallucinations. She has received continuous treatment for bipolar disorder over the last two years. Within 7 days of the onset of symptoms the patient became catatonic, with hyperthermia up to 41 °C. The brain MRI showed high signal intensity on the T2-weighted and FLAIR sequences in the splenium of the corpus callosum (SCC). A second MRI two weeks later showed a complete resolution of SCC lesion. The patient was given a course of electroconvulsive therapy and recovered completely from her neurological symptoms in two months after the onset of symptoms. Reversible corpus callosum syndrome in patients with catatonia should be considered in differential diagnosis.

Introduction

Reversible MRI lesions of the splenium of the corpus callosum (SCC) are uncommon and have been described in various conditions such as trauma (diffuse axonal injury) [1–7], infectious diseases (malaria, encephalitis [1–7], HIV-encephalopathy [8], meningitis, H1N1 influenza [2, 9], virus-associated encephalitis [2, 4, 5]), hypoglycemia, migraine, seizures, leucodystrophy, after chemotherapy [10], and in case of tumors and intoxication (methyl bromide [11, 12]). Recently, reversible SCC lesions have been reported in auto-immune thyroid disease [10].

One case of SCC lesion in malignant neuroleptic syndrome with benign a course has been reported [13].

The reason for the involvement of the corpus callosum may be attributed to the transient development of intramyelinic edema or cytotoxic edema. However, the true cause of symmetrical corpus callosum involvement remains controversial.

The case of symmetrical reversible corpus callosum involvement in a patient with malignant neuroleptic syndrome with catatonia is presented below.

Case report

A 23-year old Ukrainian woman was admitted to our hospital with an inability to walk or eat, a febrile temperature of approximately 38.5 °C, and severe muscle rigidity.

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She had a two-year history of bipolar disorder. She had been administered Sertindol, Amitriptyline and Phenazepam for the last two years. Two weeks before her admission the patient had refused her medication. Five days before the admission the patient had experienced visual hallucinations (she saw a boy who seemed to be the Antichrist) and delusional ideas. She was admitted to a regional psychiatric hospital, where she received neuroleptic therapy, and on the third day the above-described complaints developed; as a result she was transferred to a regional clinical hospital. Her case history record was complicated, because the patient had taken pills, doses of which were unknown to her family. On admission the neurological examination revealed catatonic stupor, high muscle tones in all skeleton muscles and an absence of reaction to pain. Deep tendon reflexes were normal. There were no meningeal signs. Laboratory tests (CBC, electrolytes, and biochemical analyses) were normal. The patient was HIV negative. CT scan of the head and chest X-ray were normal. Lumbar puncture was also normal. Abdominal ultrasound examination was normal. The brain MRI showed hyperintensity on T2-weighted images (Figs. 1 and 2), hyperintensity on fluid-attenuated inversion recovery (Fig. 3) and diffusion-weighted imaging (Fig. 4). Malignant neuroleptic syndrome was suspected and caffeine in therapeutic doses was administered. In the next seven days the patient suffered malignant hyperthermia as high as 41 °C. She experienced light tremor of the entire body. For several minutes during the day the patient could respond correctly and could perform hand squeezing. The psychiatrist suspected hyperthermic schizophrenia. The patient experienced plasmapheresis. After three weeks the patient stopped reacting to external stimuli. She had contractions in her hands and ankles. ''Bullae'' were observed on the right pinna, the sacral area and heels. The control MRI of the head was normal (at two weeks). According to the vital indications, electroconvulsive therapy was conducted. In one month the patient's condition was satisfactory, and contractions of the extremities completely disappeared. The patient is active, and helps her parents to keep house.

Fig. 2 – Splenial corpus callosum lesion in T2-weighted imaging (sagital projection).

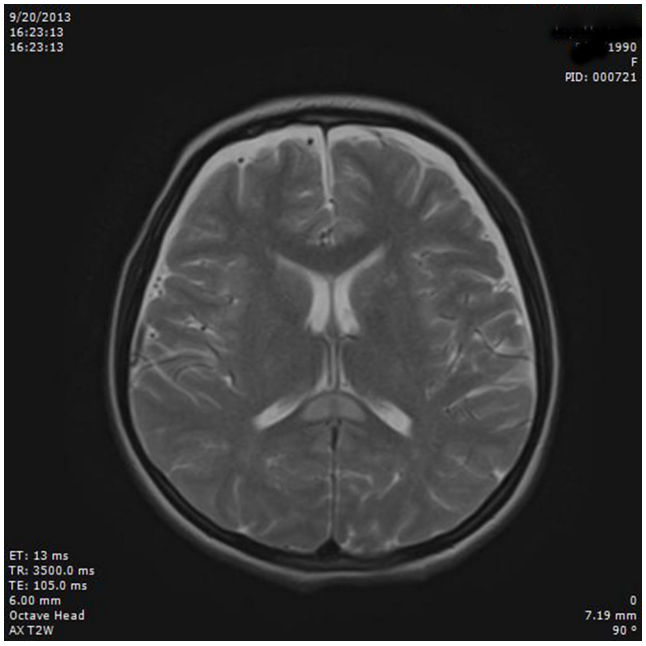

Fig. 1 – Splenial corpus callosum lesion in T2-weighted imaging.

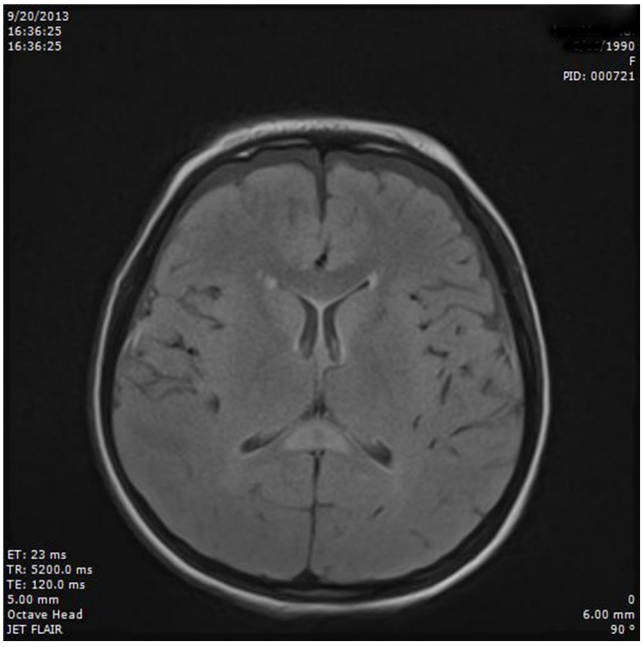

Fig. 3 – Splenial corpus callosum lesion in JET FLAIR imaging.