Unusual presentation of more common disease/injury

Temporal lobe lesions and psychosis in multiple sclerosis

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Summary

Lesions in the temporal lobe are associated with psychiatric manifestations in multiple sclerosis. The authors describe this case of a young man with multiple sclerosis who presented with first-episode psychosis and had acute lesions in the temporal lobe. He was successfully treated with olanzapine and β -interferon.

BACKGROUND

Occurrence of psychosis in multiple sclerosis is a rare entity. This case lays emphasis on thoroughly investigating a patient with first-episode psychosis and ruling out an organic cause of the psychosis. Also treatment in such cases would not only be symptomatic antipsychotics but also medications to reduce the progression of multiple sclerosis and to improve clinical outcome.

CASE PRESENTATION

Mr C is an 18-year-old single gentleman who was admitted to the psychiatric intensive care unit (PICU) straight from the police cell, with main complaints of violence, physical aggression and paranoia.

Family reported 1-month history of gradual deterioration in Mr C's mental state. He was recently noted to be very suspicious of his family members and friends. He expressed persecutory ideas like, "they are out to get me" and "they are setting me up". He also revealed to his mother that he was secreting knives for the purpose of self-defence. He was paranoid about colours, especially if he saw them in a certain sequence. For example, on one occasion he expressed that when he saw a signboard written in red and then saw another one written in black, he knew that his family was in danger. He also expressed that he was getting codes in his head and that when he watches the television, it gets confirmed. He also complained of seeing rats on the floor when there were none and was reportedly seen jumping from one mat to another in order to avoid these rats. He also expressed that his friends, although they look like his friends, are actually imposters. While in the police cell, Mr C expressed that "The police are not police". He expressed persecutory delusions of people following him on motor-bikes. When in the police cell, Mr C was repeatedly banging his head and punching the wall. He therefore needed to be handcuffed and a helmet was put on his head to prevent any injuries. When brought in to the PICU, Mr C complained of seeing three dead people in the interview room. He looked very frightened and suspicious, and said things like, "you are not a doctor", "my family is in danger", "I need to die to save my family", "I'm getting messages in my head" and "I have eight holes in my head".

This was Mr C's first presentation to the mental health services. He had no history of similar episodes. He suffered

from multiple sclerosis, which was formally diagnosed at the age of 15 years, but family reports that he was symptomatic since he was 9 years of age. His symptoms from multiple sclerosis mainly included episodes of right-sided weakness and drop attacks. He was maintained on β -interferon. While at the PICU, Mr C reported decreased vision in his right eye, which showed gradual improvement during the course of admission.

Mr C had moved out of his family home last year and had dropped out of college few months before his admission. He has a very supportive family and close circle of friends. His biological father suffered from paranoid schizophrenia. Mr C regularly used cannabis (skunk) prior to his index admission and took alcohol occasionally.

Figure 1 MRI head showing organised old lesion in the white matter of the frontal lobe.

Figure 2 MRI head showing bilateral temporal lobe lesions, left>right.

Figure 4 MRI head showing white matter lesions in the left temporal lobe.

Figure 3 MRI head showing white matter lesions in the right temporal lobe.

INVESTIGATIONS

MRI head showed multiple foci of high signal, which were clustered to the periventricular white matter with a typical orientation of multiple sclerosis. A subcortical lesion was present over the left frontal lobe (figure 1). There was high signal within both temporal lobes greater on the left than on the right (figures 2–4). When compared with the previous MRI wherein the subcortical lesion was present in the left

frontal lobe, the current MRI revealed new temporal lobe lesions.

DIFFERENTIAL DIAGNOSIS

While the presence of delusional perception and persecutory delusions and a family history of schizophrenia indicated a diagnosis of schizophrenia, absence of auditory hallucinations, presence of visual hallucinations and Fregoli syndrome-like picture indicated an organic cause of the presentation. Cannabis can also produce a similar picture in toxicity, however, this would not usually occur in clear consciousness. Also in order to label this as psychosis related to cannabis, all other organic causes should be ruled out.

The psychopathology mentioned above, MRI findings of new lesions in the temporal lobe during the acute episode and decreased vision in the right eye during the episode favour the diagnosis of multiple sclerosis.

TREATMENT

Mr C was commenced on olanzapine 20 mg and β -interferon was continued.

OUTCOME AND FOLLOW-UP

A gradual improvement was noted in his mental state. His vision in the right eye improved. Mr C was transferred to an open ward after 19 days of his stay in the PICU.

DISCUSSION

Multiple sclerosis is a chronic inflammatory disease of the central nervous system characterised by progressive demyelination. It is the most common cause of neurologic disability in young and middle-aged adults.¹ Ninety-five per cent

of patients show some form of neuropsychiatric symptoms.² This could be in the form of depression (79%), agitation (40%), anxiety (37%), irritability (35%), apathy (20%), euphoria (13%), disinhibition (13%), hallucinations (10%), aberrant motor behaviour (9%) or delusions (7%).¹ Two to three per cent of patients with multiple sclerosis can present with psychosis.³ Psychosis in multiple sclerosis differs from schizophrenia in that it has an onset at a later age, quicker resolution, fewer relapses, better response to treatment and a better prognosis.¹ Available literature on psychosis in multiple sclerosis suggests an involvement of lesions in temporal areas. In their study, Fricchione *et al*⁴ emphasise the central role of hippocampus, a periventricular medial temporal lobe structure, in secondary organic delusional syndromes. Patients with epilepsy, who have left temporal lobe epileptogenic lesions, are especially prone to schizophrenia-like psychosis.⁵ In his study, Flor-Henry⁶ reports that right temporal lobe lesions are associated with features similar to psychotic depression.

In our case, Mr C had lesions present in both temporal lobes (left more than right). Based on the literature, it can be suggested that while left temporal lobe lesions accounted for his schizophrenia-like psychosis, the right temporal lobe lesions can account for his nihilistic delusions and self-injurious behaviour.

Although the presentation of Mr C can also be explained in terms of schizophrenia, considering a positive family history and use of cannabis, the fact that Mr C not only had decreased vision of his right eye, indicating an exacerbation of his multiple sclerosis, his MRI had confirmed new active lesions in the temporal lobe. The case emphasises the importance of investigating for an organic cause in a first-episode or new onset psychosis. This would not only help us to come to a correct diagnosis, but also to tailor an appropriate treatment plan for an optimum response.

Treatment for psychosis in multiple sclerosis is mainly symptomatic, with atypical antipsychotics preferred over typical antipsychotics because of better tolerability. There have been only few published trials on treating psychosis in multiple sclerosis, but risperidone,⁷ olanzapine⁷ and ziprasidone⁸ have reasonable efficacy. Steroids can also be used to decrease the inflammatory process; however,

steroid-induced psychosis should be kept in mind in such cases. Also medications to reduce the progression of multiple sclerosis and to improve clinical outcome should be continued.

Learning points

- ▶ Two to three per cent of patients with multiple sclerosis can present with psychosis.
- ▶ Psychosis in multiple sclerosis is associated with left temporal lobe lesions.
- ▶ Treatment is mainly symptomatic and involves antipsychotics along with medications to reduce the progression of multiple sclerosis.
- ▶ Steroids can be used to decrease the inflammatory process associated with multiple sclerosis but clinicians should be cautious of steroid-induced psychosis.

Competing interests None.

Patient consent Obtained.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Yadav R, Zigmund AS. Temporal lobe lesions and psychosis in multiple sclerosis. *BMJ Case Reports* 2010;10.1136/bcr.01.2010.2651, date of publication

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