CASE REPORT

Low-dose aripiprazole resolved complex hallucinations in the left visual field after right occipital infarction (Charles Bonnet syndrome)

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Abstract

We reported a patient who suffered from complex visual hallucinations with left homonymous hemianopsia. Brain imaging showed an acute haemorrhage infarct at the right occipital lobe. Charles Bonnet syndrome (CBS) was suspected and aripiprazole was prescribed at 5 mg daily. After 3 weeks, the symptoms of hallucinations and anxiety were relieved. Although some CBS patients might be self-limited without discomfort, low-dose aripiprazole can be considered as a safe medication for significantly anxious patients with CBS.

INTRODUCTION

Charles Bonnet syndrome (CBS) is a clinical syndrome characterized by visual hallucinations in the absence of consciousness or cognition change. The causes of CBS are heterogeneous, including central and peripheral nervous system lesions and ophthalmological disorders.^{1,2} Herein we report a female patient with CBS after a sudden visual infarct at the right occipital lobe; aripiprazole resolved her anxiety and visual hallucinations in a short time. Although some CBS patients might be self-limited without discomfort, low-dose aripiprazole can be considered as a safe medication for significantly anxious patients with CBS.

CASE REPORT

Mrs A was a 70-year-old woman who received treatment for hypertension regularly. She had had no diabetes, cerebrovascular disease or visual problems before. She had a sudden onset of visual hallucinations, with colourful images of snakes and dwarves rushing over her left visual field. When she tried to focus on them, these images turned back and then disappeared temporarily. The hallucinations were persistent all day long. She knew these images were not real, but still felt extremely frightened and disturbed. She came to our clinic 7 days later, asking for immediate relief. On examination, Mrs A's consciousness was clear. Left homonymous hemianopsia was noted on confrontation test. No significant cognitive, sensory or motor impairments were noted. Her Mini-Mental State Examination had a score of 30/30. An electroencephalogram showed intermittent diffuse theta waves at 6–8 Hz without epileptic discharge. Brain computed tomography showed recent haemorrhagic infarct at the right occipital lobe, sparing the primary visual cortex, as shown in Figure 1.

We prescribed quetiapine 12.5 mg/day to alleviate her visual hallucinations, but she complained of intolerable dizziness. Therefore, we shifted to aripiprazole 5 mg/day in the second week. Her anxious preoccupation was relieved immediately, and the visual hallucinations began to decrease within 14 days. Three weeks after complete remission of visual hallucinations, aripiprazole was discontinued, and she was free from the hallucinations thereafter.



Figure 1 Brain computed tomography showed recent haemorrhagic infarct at the right occipital lobe.

DISCUSSION

The present patient showed the characteristics of CBS including: (i) recurrent, formed, complex, visual hallucinations of people and animals; (ii) having insight that the images were not real; (iii) an absence of delusional ideation; and (iv) no cognitive impairment.³ In the present case, the visual hallucinations occurred only at the left visual field with homonymous hemianopsia, and occurred immediately after the right occipital infarction. Most patients with CBS have experienced hallucinations after acute visual loss, the visual hallucinations are derived from de-afferentation along the visual pathway in this acute period. Then, the neurons of visual association cortices, which are located in the occipital and inferior-lateral temporal lobe, attempt to adapt by supersensitivity to incoming stimuli, which might trigger visual hallucinations.⁴ The SPECT study by Adachi et al. showed hyperperfusion in the lateral temporal cortex, striatum and thalamus.⁵ The dynamic adaptation of the neural network might explain why visual hallucinations often occur after the visual loss, and why the hallucinations in some patients might decrease gradually.⁶ To our knowledge, this is the first report that aripiprazole might achieve prompt alleviation of visual hallucinations experienced in CBS. As the literature shows, patients without significant sufferings might not need pharmacological treatment. Visual hallucinations might disappear if the cause of vision is resolved, such as removal of a cataract.^{2,6} Education of their benian nature is often sufficient. However, for patients who are deeply disturbed by vivid hallucinations, neuroleptic prescription might be justified to promptly reduce hallucinations and associated anxious irritability.³ Antipsychotics including risperidone, olanzapine and haloperidol have been reported to reduce the hallucinations. Anticonvulsants and some antidepressants have also been given with some improvement.^{2,3} Aripiprazole reduced the anxiety in our patient immediately. whereas the hallucinations were attenuated progressively within 4 weeks. As a modern antipsychotic drug, aripiprazole acts as a dopamine D₂ partial agonist, a partial agonist at the serotonin 5-HT_{1A} receptor, and an antagonist at the 5-HT_{2A} receptor. In a recent study, it was found that the anxiolytic effect of aripiprazole might be linked to the partial agonist on the 5-HT_{1A} receptor.⁷ Compared with other antipsychotics, aripiprazole has a more tolerable sideeffect profile of weight gain, hyperprolactinemia, sedation and metabolic syndromes.^{7,8} Aripiprazole might be a safety option in elderly patients with CBS.

Although CBS has been described since 1760, the syndrome is still under-diagnosed.⁹ The patients might seek psychiatric, neurological or ophthalmological services. Because the symptoms of CBS are often self-limited, some physicians might underestimate the necessity of initiating prompt pharmacological treatment when patients are apparently distressed.^{2,3} Physicians might consider evaluating the patients' subjective suffering, and low-dose aripiprazole might be a reasonable choice to achieve quick symptomatic relief, without undesirable sideeffects. Further investigations regarding the pathogenesis and treatment are necessary to understand this unique clinical syndrome.

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