

Out of Sight, Still in Sight: Charles Bonnet Syndrome Following Traumatic Vision Loss

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ABSTRACT

Charles Bonnet Syndrome (CBS) is a condition characterized by complex visual hallucinations in individuals with visual impairment, occurring in the absence of hallucinations in other sensory modalities or additional psychotic symptoms. Despite maintaining insight into the non-reality of these hallucinations, affected individuals often experience significant distress, fearing they may be developing a psychiatric illness.

This report presents a case of a 22-year-old female university student who developed CBS following total vision loss due to an acid attack by her partner after an argument. Initially, the patient experienced distressing visual hallucinations, which gradually became less troubling as she adapted to them.

This case underscores the importance of differentiating CBS from primary psychotic disorders, the potential role of trauma in its pathogenesis, and the necessity of psychoeducation and supportive interventions for individuals with sudden vision loss to prevent unnecessary psychiatric misdiagnosis and psychological distress.

Keywords

Charles Bonnet Syndrome (CBS); visual hallucination, traumatic vision loss, acid attack

INTRODUCTION

CBS is a rare neurological condition that causes repeated and detailed visual hallucinations in people who have significant loss of vision¹. A key feature of CBS is that affected individuals maintain cognitive integrity and recognize their hallucinations as unreal, distinguishing it from psychotic disorders². CBS was first described by Charles Bonnet in 1760 after he noticed visual hallucinations in his grandfather, who had severe cataracts. The condition is now known to affect about 10–15% of people with major vision loss³. CBS is most frequently associated with progressive eye diseases, such as age-related macular degeneration, glaucoma, diabetic retinopathy, and retinal vascular occlusions⁴. However, CBS arising from sudden, complete blindness due to trauma remains an underreported and poorly understood phenomenon⁵.

The cause of CBS is believed to involve loss of visual input to the brain and increased activity in the visual cortex. When vision is lost, the brain compensates by creating images on its own, which appear as hallucinations⁶. The complexity of these hallucinations ranges from simple shapes and patterns to clear and detailed images of people, animals, or objects⁷. Although the exact process is not fully understood, brain imaging studies show increased blood oxygenation level dependent (BOLD) activation in the visual cortex, particularly in the lateral occipital cortex

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(LOC), plays an important role in producing these visual experiences⁸.

This case report describes a 22-year-old female university student who developed CBS following an acid attack, which resulted in total vision loss. Unlike the gradual vision deterioration seen in most CBS cases, this patient experienced an acute and complete loss of sight, making this presentation particularly unique. Her case highlights the relationship between sudden visual deprivation and CBS onset, as well as her psychological adaptation over time, which provides valuable insight into the natural course and management of CBS. Furthermore, this report underscores the importance of differentiating CBS from psychiatric disorders, such as schizophrenia, psychotic depression, or post-traumatic disorders, to prevent misdiagnosis and unnecessary pharmacological treatment. Given the limited awareness of CBS following traumatic blindness, this case contributes to the growing literature on visual release hallucinations and their implications for neuropsychiatric assessment and intervention.

Case presentation

A 22-year-old female university student with no prior medical or psychiatric history developed complete bilateral vision loss following an acid attack by her female partner, a premeditated act of revenge. The assault resulted in severe facial burns, affecting 9% of her total body surface area (TBSA), with extensive ocular damage leading to permanent visual impairment. She was admitted to the burn unit, where she received appropriate multidisciplinary care.

Within a few days of hospitalization, the patient began experiencing complex visual hallucinations. She described vivid, structured, and recurrent images, including motorcycles lined along the roadside, creating the impression that she was standing in the middle of a street. Subsequently, she reported seeing a clear and persistent image of a staircase from her home. Despite her complete blindness, these hallucinations appeared well-defined and spatially coherent, causing significant distress and confusion. She expressed difficulty differentiating reality from hallucinations, questioning whether she was still in the hospital or outside, contributing to spatial disorientation and heightened anxiety.

Given her symptoms, she was referred to the psychiatry team for evaluation of possible psychotic symptoms.

However, upon comprehensive psychiatric assessment, she exhibited no auditory, tactile, or olfactory hallucinations, and there was no evidence of delusions, thought disorder, or other psychotic symptoms. Her cognition and insight remained intact, and she was able to articulate that, despite their vivid nature, the images she perceived were not real. Based on these findings, a diagnosis of CBS was established.

She was provided with psychoeducation regarding CBS, including reassurance that these hallucinations were a neurological phenomenon rather than a sign of psychosis or mental instability. She was informed that sudden loss of visual input had triggered her brain to generate spontaneous images, a well-documented occurrence in individuals with acquired blindness. She also noted that, at times, the hallucinations diminished when she closed her eyes, further supporting the diagnosis of CBS.

Additionally, the patient reported significant sleep disturbances due to the persistent visual hallucinations, which exacerbated her distress and anxiety. Given her difficulty initiating and maintaining sleep, she was prescribed a sedating antidepressant to aid with sleep and alleviate her anxiety-related symptoms. With reassurance, psychoeducation, and pharmacological support, her sleep quality improved, and her anxiety gradually decreased, allowing her to develop adaptive coping strategies despite the persistence of hallucinations. Over time, she learned to ignore the images, and her distress diminished significantly, demonstrating the natural course of habituation observed in CBS.

DISCUSSION

CBS is often overlooked and misdiagnosed, especially when it develops after sudden vision loss caused by trauma rather than from gradual eye diseases. This case is unique because most reported CBS cases involve progressive visual loss from conditions such as macular degeneration, diabetic retinopathy, or glaucoma⁴. However, this patient developed CBS due to a sudden, total loss of vision following an acid attack. This aligns with the deafferentation hypothesis, which suggests that the brain, deprived of visual input, generates spontaneous activity in the visual cortex, leading to hallucinations⁶.

The patient's hallucinations were recurrent but non-threatening and consisted only of the staircase in her

home, a relatively simple, inanimate structure. This is notable as CBS hallucinations typically involve faces, animals, or elaborate scenes⁹. The absence of moving or dynamic hallucinations in this case may be attributed to the sudden onset of blindness, in contrast to the more elaborate visual images typically observed in progressive vision loss¹⁰.

Her emotional response evolved from initial distress to gradual adaptation, a common feature in CBS cases. This adjustment suggests that the visual cortex becomes less active over time, supporting the idea that reduced brain excitability helps the symptoms improve¹¹. The occurrence of visual hallucinations in CBS often leads to misdiagnosis as a psychotic disorder, such as schizophrenia, especially in younger patients¹². However, CBS is distinguished by the presence of insight, the absence of other psychotic symptoms, and the patient's ability to describe the hallucinations vividly and in detail.

This case emphasizes the importance of clinical awareness to prevent misdiagnosis and unnecessary antipsychotic treatments, which are generally ineffective for CBS. In most cases, the management of CBS does not require medication. The main approach involves educating and reassuring patients that CBS is a harmless condition and not a sign of mental illness or cognitive decline, which helps to reduce their distress.¹³ Sensory stimulation methods, such as improving lighting and involving patients in activities that use other senses, can lessen the frequency of visual hallucinations and help divert their attention away from their hallucinations¹⁴. Psychological support is essential, especially in trauma-related cases like this, where the patient also needs emotional recovery and rehabilitation.

Although pharmacological interventions such as SSRIs, antiepileptics, or atypical antipsychotics are typically considered in distressing cases,¹⁵ they were

not necessary for managing the patient's hallucinations, as she successfully adapted over time. However, a sedating SSRI was initiated in this case to assist with her sleep disturbances.

This case also highlights the broader issue of acid violence, which results in severe physical, psychological, and social consequences. Survivors often suffer from post-traumatic stress disorder (PTSD), depression, and anxiety, conditions that may exacerbate CBS symptoms. Multidisciplinary teams such as ophthalmology and rehabilitation, including psychiatric support, legal aid, and social reintegration efforts, are crucial for these patients.

CONCLUSION

This case highlights a rare presentation of CBS following sudden traumatic blindness from an acid attack. It emphasizes the importance of distinguishing CBS from psychiatric illnesses, understanding its neurophysiological basis, and recognizing the role of psychological adaptation in its resolution. The case also underscores the need for multidisciplinary rehabilitation for survivors of acid attacks, integrating visual, psychological, and legal support

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