Through the lens of schizophrenia: visual hallucinations in a patient with congenital cataract – case report

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ABSTRACT

Schizoaffective disorder is a chronic mental illness characterized by a combination of symptoms seen in both schizophrenia and mood disorders. It is considered a subtype of schizophrenia spectrum disorders. People with schizoaffective disorder experience various symptoms, including hallucinations, delusions, disorganized thinking, impaired social functioning, and mood disturbances, which can manifest as manic, depressive, or mixed episodes. This case report examines a 33-year-old male patient diagnosed with schizoaffective disorder who presented with negative symptoms, depressive mood, and cognitive impairments. He also experienced visual hallucinations, which represents the particularity of this case. The patient had a history of congenital cataracts, which affected his visual acuity from an early age. Despite undergoing surgery to replace the affected lenses, he developed myopia and continued to experience visual impairment. This case highlights the differential diagnosis challenges in this rare situation. It also raises questions about the relationship between visual hallucinations and somatic impairments. The patient’s successful treatment included a combination of antipsychotic, antidepressant, and mood stabilizer medications. Recommendations were provided for continued outpatient treatment, psychiatric monitoring, and participation in support groups and therapy sessions.

Keywords: congenital cataract, visual hallucinations, schizophrenia, schizoaffective disorder

INTRODUCTION

Originating from the Greek terms “schizo” (splitting) and “phren” (mind), the term “schizophrenia” was first introduced by Eugen Bleuler in 1908 [1]. It is a functional psychotic disorder that manifests through delusional beliefs, hallucinations, and disruptions in thought, perception, and behaviour. Despite having a relatively low prevalence (between 0.33% and 0.75%), schizophrenia is linked to significant health, social, and economic concerns. Among the psychotic spectrum, schizoaffective disorder occupies an important spot, being one of the diagnostic and therapeutic challenges.

The diagnosis of schizophrenia is solely based on clinical grounds, without the existence of tests or biological markers that could facilitate the diagnostic process [2]. This aspect presents challenges due to the heterogeneous range of clinical presentations, sometimes leading to diagnostic difficulties. Schizoaffective disorder combines clinical characteristics of both affective disorder and schizophrenia, with a roughly equal presence of these features [1]. While the prognostic factors resemble those of schizophrenia, the outcomes tend to be more favorable compared to schizophrenia, thanks to its non-deteriorating course. However, the outcomes are generally less favorable than those of primary mood disorders [3]. It may sometimes be difficult to differentiate between schizophrenia and schizoaffective disorder due to the patient inability to recall the timeline of symptomatology.

Hallucinations are described as perceiving an object without any corresponding stimulus present [4]. Hallucinations can vary in type, depending on the nature of the false perceived stimulus (visual, auditory, gustatory, olfactory, tactile). Visual hallucinations can also be observed in a wide range of medical conditions, like psychiatric disease, drug ingestion, sleep-wake transitional states, metabolic and endocrine disorders, epilepsy, cerebral ischemia, Charles Bonnet syndrome, visual impairments,
migraines, peduncular hallucinosis, tumors and other forms of neurological disease [5,6]. Visual hallucinations are more common in organic states than psychosis (dementia with Lewy bodies, Parkinson’s disease, and diseases affecting the eye or visual pathway) [7]. Usually, when a patient first presents with psychotic symptomatology, specifically visual hallucinations, it typically raises suspicions regarding various potential causes such as illicit substance use, alcohol withdrawal, tumors, organic pathology, and other factors [5]. This complex scenario makes it difficult to establish a definitive diagnosis. There is an elevated risk regarding the prevalence of visual hallucinations in schizoaffective disorder. One study showed that 47.5% of people suffering from schizoaffective disorder had experienced visual hallucinations at some point in their life [8].

Impaired visual acuity in adolescents is one of the cited risk factors implicated in developing psychosis later in life [9,10]. Visual dysfunction in early childhood predicts schizophrenia-spectrum disorder in adulthood [11]. Individuals who struggle to perceive visual information accurately and precisely may face challenges in adequately processing this information, leading to incomplete mental representations of the world [12]. Impaired acquisition and processing of visual information lead to higher-order cognitive dysfunctions (cognitive operations with visual information that is more complex than perceptual visual processing performed in primary visual cortices) and consequently give rise to symptoms associated with schizophrenia [13,14].

Congenital cataract is a leading cause of visual impairment in infants and young children, estimated to be responsible for 5% to 20% of blindness in children worldwide, and it is one of the main causes of treatable blindness or visual impairment in children [15, 16]. In the case of adults who suffer from cataracts which occur with ageing, delaying surgery for several years has no significant impact on the final visual outcome. However, failure to correct congenital cataracts in infants within the first year of life results in irreversible vision deficits, despite undergoing surgery at a later time [17]. Due to the presence of cataracts, the retinal image becomes blurred, resulting in improper development of vision and the brain’s inability to interpret the visual input received from the affected eye [12]. While removing the cataract and correcting aphakia can restore visual clarity, the brain still requires a learning process to develop proper visual perception, and this adjustment takes time [17].

Recognizing the diverse and varied clinical presentations of schizophrenia spectrum disorders is crucial, as it highlights the challenges and gaps in information that hinder a holistic approach. In addition, it is essential to acknowledge that individuals diagnosed with schizophrenia or schizoaffective disorder often experience multiple comorbidities, frequently overlooked due to the complexities of distinguishing between the hallucination-delusion complex and the manifestation of the somatic disease. Consequently, an important aspect arises where these two entities overlap.

**CASE REPORT**

We present the case of a 33-year-old male patient diagnosed with schizoaffective disorder from the age of 26, who was admitted to our clinic after he purposefully ingested multiple psychotropic drugs in a suicide attempt. The patient’s clinical presentation was primarily characterized by negative symptoms, including severe social withdrawal, reduced level of functionality, and cognitive impairments. In addition, he presented with persecutory and prejudicial delusional ideation, overlaid with delusions of worthlessness and self-blame congruent with his depressive mood. Interestingly, he experienced increased intensity of visual sensations and perceived colors as very bright and intense.

The patient was compliant with the prescribed treatment with antipsychotic at a sleep-inducing dose (Quetiapine 25 mg/day), mood stabilizer (Gabapentin 300 mg/day), and antidepressant (Venlafaxine 75 mg/day). However, the present episode exhibited a relatively sudden onset with severe depressive mood, which ultimately led to the suicide attempt by ingesting a substantial quantity of Quetiapine, Venlafaxine, and Diazepam. Notably, this marks the patient’s initial suicide attempt. He was first admitted to an intensive care unit due to respiratory insufficiency, necessitating ventilatory support for ten days. However, following the suppression of ventilatory support, the patient’s condition showed improvement with a stable physical state. Subsequently, the individual was transferred to our clinic for psychiatric assessment.

A comprehensive evaluation of the patient’s history revealed that he had experienced recurrent hospitalizations in the psychiatric facility throughout the years, during which he demonstrated partial adherence to treatment. In childhood, he attended a special school for children with visual impairments. Although he completed high school, he did not pursue a university education because he was unable to pass the required admission exam. He always tended to be socially withdrawn, preferring to spend more time alone. Throughout time, he was unable to maintain a stable job, having multiple ones, even before his psychiatric illness debuted.

At birth, he was diagnosed with congenital cataract, a severe condition that had an important impact on his vision from the beginning of his life, limiting his ability to see the world clearly in the most critical
years of his developing mind as a child. At the age of 9, he received a surgical procedure to replace his affected lenses with artificial ones, but the results did not match the anticipated outcome. Instead, he experienced a visual deficiency, specifically myopia, despite the successful removal of cataracts.

During his inpatient consultations, the patient provided a comprehensive account of his symptomatology, describing a sequential progression of symptoms over time. He reported an initial experience of persistent fatigue, irritability, and mixed insomnia, which subsequently precipitated visual hallucinations, illusions, and paranoid delusional ideas. The visual hallucinations manifested as the perception of human figures or contours interpreted delusionally as malevolent spirits seeking to harm him. Notably, the patient denied any auditory illusions or hallucinations. However, he did mention a heightened sensitivity to sounds, which he attributed to the overall fatigue he was experiencing during that period.

Throughout the hospitalization, the patient exhibited reduced facial expressions with clumsy gestures and bizarre behavior, reduced informational discourse, diminished imaginative capacity, and limited ability to generate responses to simple questions. He presented concrete thinking, diminished capacity for abstraction, and encountered challenges in carrying out mental calculations due to his attention span impairments. He described feelings of derealization and depersonalization and manifested a sense of inferiority with self-criticism. He displayed psychotic anxiety and a depressed mood accompanied by abulia and anhedonia. He did not demonstrate insight into his psychotic symptomatology but believed he was suffering from a condition he referred to as “depression”.

Regarding the suicide attempt, the patient stated that he resorted to this extreme act due to his unbearable state of loneliness and the feeling that he has changed significantly. He no longer resembles his previous self, the cheerful and sociable person who used to find joy in life and expressed disappointment in his inability to obtain and maintain a steady job. Furthermore, the patient explained the suicide attempt as an impulsive act as a response to overwhelmingly negative emotions.

A series of further investigations were made to complete the overall clinical picture. Complete blood count, basic metabolic panel, lipid panel, electrolytes panel and thyroid hormonal profile were normal, except for elevated transaminase levels following the polypharmacy overdose, which returned to baseline values under hepatoprotective treatment. The results of the urine toxicology test were positive for Venlafaxine, Quetiapine, and Diazepam. In addition, a non-contrast cranial CT scan was performed and revealed no pathological alterations. Finally, a series of psychometric tests were used for assessing the current state with the following results: Positive And Negative Syndrome Scale (PANSS): Positive symptoms (P) score 10, Negative symptoms (N) score 22, General Psychopathology (G) score 76, with a total of 108 points and an I score (characterized by P-N) of -12 points reflecting the predominance in the clinical picture of negative symptomatology; Hamilton Depression Rating Scale (HAM-D) score 21 points, corresponding to upper limit of moderate depression; Global Assessment of Functioning Scale (GAFs) score 50-41, which represents serious symptoms and serious impairments in social and occupational functioning; Mini-Mental State Examination (MMSE) score 23, indicating mild cognitive impairment, mainly as a secondary cognitive impairment due to the combination of the depressive episode and the psychotic features of the clinical aspect.

During hospitalization, the patient underwent treatment with an atypical antipsychotic (Olanzapine 20 mg/day), antidepressant SSRI (Sertraline 100 mg/day), and mood stabilizer with anxiolytic effects (Gabapentin 600 mg/day). Under this treatment, the patient’s evolution was favorable, with remission of psychotic anxiety, improvement of depressive mood, and regaining the desire to engage in various achievable plans. Therefore, the patient was discharged with a recommendation to continue the treatment and psychiatric monitoring in the outpatient setting and to participate in support groups and therapy sessions.

**DISCUSSIONS**

This case raises several questions: Can it be possible that the clinical picture from the onset of the schizoaffective disorder could have been influenced by the visual impairments in such a manner that they shaped the psychotic activity that surrounded the affective disturbances? In the meantime, visual impairments lead to a various deficit in the cognitive domain as a result from the reduced capacity to comprehend and integrate cognitive information during his childhood and early adulthood.

Did the patient’s schizoaffective disorder initially manifest with perceptual visual symptoms, or were the delusional interpretations of external stimuli a result of somatic impairment? The compromised reality testing capacity, which significantly affects the overall functioning of individuals with schizophrenia, may be evident across the entire spectrum of the condition. Given the lack of insight surrounding this case, making a differential diagnosis of the conditions that can lead to visual hallucinations becomes nearly impossible.

If we follow the dynamic psychopathological model in this case, we can explain the progression of the
patient's symptomatology. The onset of his illness with multiple visual hallucinations led to social withdrawal and the loss of both his job and loved one. Due to these significant life changes, the patient began to exhibit depressive symptoms, which further exacerbated his social withdrawal.

Such cases test the intricate nature of life, which can be commonly observed in psychiatric hospitals.

Regardless of the answers to these questions, the only practical solutions that we as specialists can apply to help patients are adopting a therapeutic attitude of empathy through which we can provide patients with trust and support, as well as recommending support groups and therapy which can provide help for social reintegration and ease for the patients and their families.

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