Seizure-induced depressive disorder and borderline personality traits in a young female: A case report

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Abstract
Seizure-induced psychiatric disorders have gained increasing attention, highlighting the bidirectional relationship between neurological and psychological conditions. Studies worldwide have reported that the prevalence of depression in individuals with epilepsy can range from approximately 20% to 60%. However, the coexistence of seizure-induced conditions, such as depressive disorder, and borderline personality traits remains a relatively underexplored area of study. Borderline personality traits encompass a range of emotional dysregulation, unstable interpersonal relationships, and impulsivity, which may interact with neurological events to influence symptomatology and treatment outcomes.

We present a case report of a young, unmarried female, who experienced a seizure-induced depressive disorder following a head injury and exhibited borderline personality traits. This case sheds light on the complex interplay between physical trauma, psychiatric symptoms, and personality traits.

Keywords: Seizure-induced depressive disorder, borderline personality traits, head injury, electroconvulsive therapy, case report

Introduction
The interaction between physical health and mental well-being is a dynamic and complex phenomenon that underscores the multidimensional nature of human health. Traumatic events, such as head injuries, have been implicated in precipitating or exacerbating psychiatric disorders, adding a layer of intricacy to the diagnostic and therapeutic landscape. In this context, we present a case report that delves into the interplay between seizure-induced depressive disorder and borderline personality traits following a head injury.

Depressive disorders are a prevalent and burdensome category of mental illnesses that can be triggered by various factors, including physiological disturbances. Seizure-induced depressive disorder, while a relatively less explored phenomenon, presents an intricate connection between neurological insults and psychological symptoms. Furthermore, the coexistence of depressive symptoms with personality traits, such as borderline features, adds additional complexity to the diagnostic and treatment considerations.

Our case report focuses on the comprehensive assessment and management of a young, unmarried female, who experienced seizure episodes after a head injury and subsequently developed symptoms consistent with a moderate depressive disorder. Her case is noteworthy not only due to the intricate interplay between the physical trauma and psychiatric manifestations but also because it highlights the presence of borderline personality traits, which may contribute to the clinical presentation and treatment response.

We explore the diagnostic challenges, treatment considerations, and potential interventions, including electroconvulsive therapy (ECT), in the context of this unique clinical scenario. This case underscores the importance of a holistic and integrated approach to understanding and addressing the complex interconnections between neurology, psychiatry, and personality dynamics, and it may offer insights into the broader implications for clinical practice and future research endeavors.

Case Presentation
A 23-year-old unmarried Muslim female with a lower socio-economic background suffered a head injury resulting from a fall from the second-floor terrace. This trauma was accompanied...
by 4-5 seizure episodes, characterized by the clenching of teeth, involuntary jerky limb movements, and unrolling of eyeballs, followed by loss of consciousness. In addition to the neurological symptoms, she presented with a range of psychiatric symptoms, including irritability, anhedonia, disturbed sleep, sadness of mood, fatigue, and intermittent suicidal ideations. Further exploration of her history revealed a challenging upbringing marked by feelings of neglect and lack of attention during childhood, possibly contributing to her borderline personality traits. The sudden death of her hypertensive father due to a heart attack exacerbated her psychological distress. The patient's educational trajectory, marked by aspirations to become a lawyer, hints at her ambitions despite her psychological struggles.

**Diagnosis**

General examinations, such as physical, systemic, and CNS assessments, were within normal limits. No signs of Meningeal irritation. The patient's clinical presentation led to the diagnosis of moderate depressive disorder without somatic symptoms, complicated by borderline personality traits. The case formulation involved a thorough integration of the ICD-10 and DSM-5 criteria, taking into account both the acute neurological event and the underlying personality structure.

**Treatment and Outcome**

The patient was initially managed with antidepressant medication and anticonvulsants to address her immediate needs. Due to the persistence of depressive symptoms, the possibility of electroconvulsive therapy (ECT) was considered. The patient's response to treatment and ongoing progress is being monitored closely.

**Discussion**

The presented case report underscores the intricate interaction between physical trauma, depressive symptomatology, and borderline personality traits. The patient exhibited a range of depressive symptoms. Additionally, her premorbid personality traits demonstrated borderline features. The convergence of these factors highlights the need for a comprehensive understanding of the underlying mechanisms and implications for treatment. The relationship between traumatic brain injury (TBI) and mood disturbances has been explored in the literature. The study by Bodnar, CN et al. [6], suggested that TBI can lead to alterations in neurotransmitter systems, neuroinflammation, and hormonal dysregulation, which may contribute to the development of mood disorders such as depression. The bidirectional relationship between TBI and depression shows that pre-existing personality traits, such as borderline features, can influence the manifestation and course of depressive symptoms in response to trauma.

The co-occurrence of depressive symptoms and borderline personality traits, in this case, aligns with existing research highlighting the complex interplay between personality pathology and mood disorders. Prior studies have shown that individuals with borderline personality traits are at an increased risk of developing mood disorders, and these traits may influence the expression of mood symptoms and response to treatment [7]. The patient's reported sense of abandonment during childhood and poor family dynamics could contribute to the onset and persistence of her depressive symptoms, warranting consideration of psychosocial factors in the treatment approach.

The contemplation of electroconvulsive therapy (ECT) as a potential intervention for treatment-resistant depressive symptoms introduces a significant intersection of ethical and clinical considerations. Despite ECT's demonstrated efficacy in addressing severe and treatment-resistant depression, its implementation necessitates a meticulous evaluation of the potential advantages and drawbacks, particularly in instances involving concurrent comorbid personality traits. The decision to proceed with ECT should be made judiciously, taking into account the intricate interplay of various factors, including the patient's clinical condition, medical history, and individual characteristics [8].

According to Trifu, Simona et al. ECT has exhibited favorable outcomes in severe depressive cases, but there remains a dearth of comprehensive research that specifically investigates its applicability and impact on individuals concurrently experiencing both depressive disorder and borderline personality traits. Future investigations are warranted to provide a deeper understanding of the potential benefits and risks associated with ECT in this unique subgroup. Furthermore, it is imperative to explore the long-term consequences of ECT treatment on both depressive symptomatology and personality functioning, as this information can significantly inform clinical decision-making and guide treatment strategies tailored to individual needs.

**Conclusion**

The case highlights the challenges in managing complex comorbidities and the need for a tailored treatment plan that considers both the neurological and psychological aspects of the patient's condition. The decision-making process regarding interventions such as electroconvulsive therapy (ECT) underscores the delicate balance between potential benefits and ethical considerations in cases involving concurrent personality traits.

This case report emphasizes the importance of further research to unravel the underlying mechanisms that link physical trauma, personality traits, and psychiatric symptoms. As our understanding of these intricate connections evolves, it will contribute to more effective and personalized interventions, guiding clinicians toward improved treatment outcomes. Ultimately, the presented case encourages a broader dialogue within the medical community, fostering a deeper appreciation for the multifaceted nature of mental health conditions. By shedding light on the complexities of this particular case, we hope to contribute to a more comprehensive understanding of the interplay between neurology, psychiatry, and personality dynamics, ultimately enhancing patient care and informing future research endeavors.

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**References**


