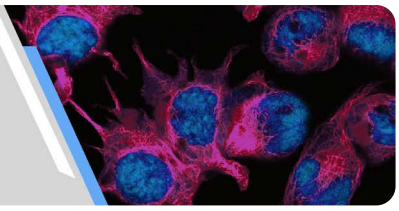
fortune Journals

Case Reports

INTERNATIONAL
JOURNAL OF APPLIED BIOLOGY AND PHARMACEUTICAL TECHNOLOGY
ISSN: 0976-4550



A Twist of Fate: Mild Traumatic Brain Injury Leading to Organic Personality Disorder- A Case Report

Dr. Nandish M[*,1], Dr. Mohit Agrawal[2], Dr. Ankit Singal[3], Dr. Shilpa Mandal[2], Dr. Surender Sharma[4], Dr Sukriti Pruthi[1]

Abstract

Organic Personality Disorder (OPD) is a neuropsychiatric condition characterized by significant personality and behavioral changes due to brain injury or dysfunction. While OPD is commonly associated with moderate to severe traumatic brain injuries (TBIs), this case report presents a unique instance of OPD manifesting a decade after a mild TBI. The patient's initial recovery was uneventful, with no neurological deficits; however, ten years post-injury, she exhibited marked personality changes. Comprehensive evaluations, including neuroimaging, revealed no structural abnormalities. This case underscores the necessity for long-term monitoring of patients with mild TBI, as delayed psychiatric manifestations like OPD can occur even after an extended period of apparent recovery.

Keywords: Organic Personality Disorder, Mild Traumatic Brain Injury, Delayed Onset, Long-term Monitoring

Introduction

Traumatic Brain Injury (TBI) is a significant public health concern, with a spectrum ranging from mild to severe injuries. While severe TBIs are often linked to immediate and profound neuropsychiatric sequelae, mild TBIs are typically associated with transient symptoms and favorable prognoses. However, emerging evidence suggests that even mild TBIs can lead to delayed psychiatric conditions, such as Organic Personality Disorder (OPD) (1). OPD is characterized by enduring personality changes, including irritability, impulsivity, and emotional dysregulation, following brain injury. This case report highlights a rare instance of OPD developing ten years after a mild TBI, emphasizing the importance of long-term vigilance in such cases.

Case Presentation

A 37-year-old right-handed female presented to the Psychiatric Outpatient Department with progressive personality and behavioral changes over the preceding year. The patient reported marked irritability, affective lability, recurrent anger outbursts, impulsivity, and poor frustration tolerance, which had led to significant interpersonal conflicts and occupational dysfunction. Her past medical history was significant for a mild traumatic brain injury (mTBI) sustained during a road traffic accident in 2014, characterized by a brief loss of consciousness (<30 minutes) and post-traumatic amnesia of less than 24 hours, with no residual focal neurological deficits. She made a full functional recovery and had been asymptomatic for several years thereafter. There was no prior psychiatric history, substance use disorder, family history of mental illness, or comorbid systemic illness.

Affiliation:
[1]Junior Resident, Dept of Psychiatry, Armed Forces Medical College, Pune
[2]Senior Resident, Dept of Psychiatry, Armed Forces Medical College, Pune
[3]Professor, Dept of Psychiatry, Armed Forces Medical College, Pune
[4]Associate Professor, Dept of Psychiatry, Armed Forces Medical College, Pune

***Corresponding author:**
Dr. Nandish M, Junior Resident, Dept of Psychiatry, Armed Forces Medical College, Pune, India.

Citation: Dr. Nandish M, Dr. Mohit Agrawal, Dr. Ankit Singal, Dr. Shilpa Mandal, Dr. Surender Sharma, Dr. Sukriti Pruthi. A Twist of Fate: Mild Traumatic Brain Injury Leading to Organic Personality Disorder- A Case Report. International Journal of Applied Biology and Pharmaceutical Technology. 16 (2025): 51-53.

Received: September 04, 2025
Accepted: September 17, 2025
Published: September 30, 2025

Dr. Nandish M, et al., Int J Appl Biol Pharm 2024
DOI:10.26502/ijabpt.202139

On evaluation, the patient was alert, fully oriented, and cooperative. Neurological examination revealed no focal deficits, and routine hematological and biochemical investigations, including thyroid profile and vitamin B12 levels, were within normal limits. Magnetic Resonance Imaging (MRI) of the brain did not reveal any gross structural abnormalities. However, formal neuropsychological assessment demonstrated impairments in executive functioning (planning, cognitive flexibility, inhibitory control) and deficits in emotional regulation, suggestive of frontal-subcortical circuit dysfunction. Given the temporal association of behavioral symptoms with antecedent traumatic brain injury, the absence of primary psychiatric illness, and the constellation of affective instability, impulsivity, and social maladjustment, a diagnosis of Organic Personality Disorder (F07.0), as per the International Classification of Diseases, Tenth Revision (ICD-10) was made. The patient was initiated on a multimodal treatment plan. Psychotherapeutic intervention involved Cognitive Behavioral Therapy (CBT) with a focus on anger management, emotional regulation strategies, and impulse control techniques. Pharmacological management included a mood stabilizer, sodium valproate (500 mg/day), to target affective lability and aggression, and a selective serotonin reuptake inhibitor (SSRI), fluoxetine (20 mg/day), to address irritability and improve impulse regulation. In addition, the patient underwent structured social and occupational therapy, emphasizing the establishment of consistent daily routines, interpersonal skill enhancement, and workplace adjustment strategies.

At a three-month follow-up, the patient demonstrated partial clinical improvement, with a reduction in impulsive behaviors, decreased frequency of anger outbursts, and greater emotional stability. However, residual symptoms of affective lability and interpersonal sensitivity persisted, highlighting the need for long-term pharmacological maintenance and ongoing psychotherapeutic engagement.

Discussion

The development of OPD following TBI is well-documented, particularly after moderate to severe injuries. Studies indicate that the incidence rate of personality disorders post-TBI is 33.1%, with higher rates observed in moderate (38.7%) and severe (44.2%) cases, compared to mild TBI (18.0%) (3). The frontal and temporal lobes are often implicated in such cases, given their role in personality and behavior regulation (4). In the present case, the patient remained asymptomatic for several years following the initial mTBI, which is consistent with reports that behavioral and personality changes may emerge insidiously and evolve progressively due to chronic neurobiological alterations. Neuropsychological testing was critical in detecting executive dysfunction and emotional dysregulation, which are hallmarks of frontal lobe-mediated behavioral syndromes. The lack of prior psychiatric illness and absence of active systemic or metabolic contributors further supports the attribution of her symptoms to an organic etiology related to antecedent brain injury. Hence in this patient, despite the absence of detectable structural damage on neuroimaging, the delayed onset of OPD suggests that even mild TBIs can have long-term neuropsychiatric consequences.

The latency of a decade between the initial injury and the onset of symptoms is particularly noteworthy. While most post-TBI psychiatric manifestations occur within the first few years, this case underscores the potential for delayed presentations (5). Mechanisms such as chronic neuroinflammation, delayed synaptic degeneration, and functional brain network alterations like fronto-subcortical circuits may contribute to late-onset psychiatric symptoms (6,7). A recent study found that 30-50% of patients with mild TBI experience neuropsychiatric complications beyond five years post-injury (8). Additionally, studies suggest that patients with a history of mild TBI are at a 2.5 times higher risk of developing mood and personality disorders later in life compared to non-TBI individuals (9,10). Clinicians should maintain a high index of suspicion for OPD in patients with a history of TBI, regardless of the injury's initial severity or the time elapsed since the event.

Conclusion

This case highlights the potential for delayed onset of Organic Personality Disorder following a mild traumatic brain injury. It emphasizes the need for long-term follow-up and monitoring of patients with mild TBI, as psychiatric complications can manifest years after the initial injury. Early identification and intervention through a multidisciplinary approach involving psychiatry, neuropsychology, and rehabilitation medicine are essential to improve outcomes and quality of life. Pharmacological options (e.g., mood stabilizers, SSRIs, beta-blockers) may help mitigate irritability and aggression, while cognitive-behavioral interventions and social skills training provide additional benefits in restoring psychosocial functioning.

Declarations

Ethics approval and consent to participate: Not Applicable

Availability of data and material: Open

Competing interests: NIL

Consent to publish: Written consent obtained from the patient.

Authors' contributions

Authors (1, 2, 3) were involved in the patient's case, which included monitoring the patient's psychopathology

Citation: Dr. Nandish M, Dr. Mohit Agrawal, Dr. Ankit Singal, Dr. Shilpa Mandal, Dr. Surender Sharma, Dr. Sukriti Pruthi. A Twist of Fate: Mild Traumatic Brain Injury Leading to Organic Personality Disorder- A Case Report. International Journal of Applied Biology and Pharmaceutical Technology. 16 (2025): 51-53.

Dr. Nandish M, et al., Int J Appl Biol Pharm 2024
DOI:10.26502/ijabpt.202139

and providing pharmaco-therapeutic and psychotherapy care. Primary author along with Other authors (1,2,3,4,5) conducted the necessary literature research and contributed significantly to the drafting while other two authors contributed in editing of the article.

Funding, Financial support and sponsorship: Nil

Disclosure of Competing interest: Authors have none to declare

Acknowledgement

Thankful to the patient and her family members

References

1. Li B, Fang Y, Lin J, et al. Forensic psychiatric analysis of organic personality disorders after craniocerebral injury in Shanghai, China. *Front. Psychiatry* 13 (2022): 944888.
2. Franulic A, Horta E, Maturana R, et al. Organic personality disorder after traumatic brain injury: cognitive, anatomic and psychosocial factors. A 6 month follow-up. Brain Inj 14 (2000): 431-9.
3. Gualtieri CT, Evans RW. Stimulant treatment for the neurobehavioural sequelae of traumatic brain injury. Brain Inj 2 (1988): 273-90.
4. Nicholl J, LaFrance WC Jr. Neuropsychiatric sequelae of traumatic brain injury. Semin Neurol 29 (2009): 247-55.
5. Rao V, Lyketsos C. Neuropsychiatric sequelae of traumatic brain injury. Psychosomatics 41 (2000): 95-103.
6. Hesdorffer DC, Rauch SL, Tamminga CA. Long-term psychiatric outcomes following traumatic brain injury: a review of the literature. J Head Trauma Rehabil 24 (2009): 452-9.
7. Naumenko Y, Yuryshinetz I, Zabenko Y, Pivneva T. Mild traumatic brain injury as a pathological process. Heliyon 9 (2023).
8. Silver JM, McAllister TW, Arciniegas DB. Depression and cognitive complaints following mild traumatic brain injury. Am J Psychiatry 166 (2009): 653-61.
9. Jorge RE, Robinson RG, Moser D, et al. Major Depression Following Traumatic Brain Injury. *Arch Gen Psychiatry* 61 (2004): 42–50.
10. Ponsford J, Draper K, Schönberger M. Functional outcome 10 years after traumatic brain injury: its relationship with demographic, injury severity, and cognitive and emotional status. J Int Neuropsychol Soc 14 (2008): 233-42.

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license 4.0

Citation: Dr. Nandish M, Dr. Mohit Agrawal, Dr. Ankit Singal, Dr. Shilpa Mandal, Dr. Surender Sharma, Dr. Sukriti Pruthi. A Twist of Fate: Mild Traumatic Brain Injury Leading to Organic Personality Disorder- A Case Report. International Journal of Applied Biology and Pharmaceutical Technology. 16 (2025): 51-53.