E-Poster

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A Remarkable Turnaround: Improvement in Psychiatric Symptoms After Subdural Hematoma and Decompressive Craniotomy

Topic: Health Conditions (Nervous System, Musculoskeletal System, Cardiopulmonary System)

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BACKGROUND

Traumatic brain injury (TBI) is linked to the onset of psychiatric symptoms or exacerbation of pre-existing psychiatric symptoms, especially in individuals with complex mental health histories. However, rare paradoxical cases have shown psychiatric improvement following brain injury, suggesting a complex interplay between TBI and psychiatric outcomes. This case study examines a middle-aged male with autism spectrum disorder (ASD), paranoid schizophrenia (PS), and personality disorder (PD) who sustained a subdural hematoma (SDH) and underwent decompressive craniotomy. The patient demonstrated unexpected improvement in symptoms suggesting the role of neuroplasticity after brain injury.

CASE DESCRIPTION

A middle-aged male with ASD, PS, and PD was found unresponsive after a presumed unwitnessed fall. Initial Computed Tomography (CT) imaging revealed a large left-sided SDH with significant midline shift, and his GCS score was 3, requiring decompressive craniotomy. Post-surgery, follow-up CT showed substantial resolution of the hematoma.

Prior to the TBI, the patient exhibited severe psychiatric symptoms, requiring long-term care under MHA Section 3, including intensive 2:1 to 4:1 supervision. Remarkably, after TBI and surgery, the patient demonstrated significant improvement in symptoms. Delusions and self-harm behaviors were resolved, with enhanced emotional regulation and social engagement. His FIM+FAM scores improved (motor: 43→68; cognitive: 46→73), and after 20 weeks of rehabilitation, he was successfully discharged. At 38 weeks post-injury, psychiatric stability persisted, suggesting neuroplastic recovery.

DISCUSSION

Clinicians should recognize that psychiatric symptoms can occasionally improve post-TBI. There could be some plausible mechanisms; a) neural reorganization in brain regions regulating mood, social behavior, and psychosis; b) compression of the left hemisphere, including the thalamus, altering thalamocortical connectivity and contributing to the observed stabilization; c) neuroplasticity, especially in ASD, could have allowed for adaptive changes in behavioral and social functioning; and d) disruptions in dopaminergic and serotonergic pathways alleviating psychotic symptoms. Comprehensive rehabilitation, integrating cognitive and social therapies, was essential in supporting recovery, emphasizing the need for a multidisciplinary approach in complex TBI cases.

CONCLUSION

This case emphasizes the possibility of psychiatric symptom improvement post-TBI. It underscores the importance of closely monitoring individuals during rehabilitation and considering individualized strategies. Further research into the neurobiological mechanisms following brain injury is needed to refine rehabilitation approaches.

Statement of Disclosures

None

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