Neurobehavioral changes resulting from recurrent head injuries.

In recent years, there has been a significant focus on the potential link between traumatic brain injury due to recurrent head injuries (RHI) and the development of Traumatic Encephalopathy Syndrome (TES), which could lead to chronic traumatic encephalopathy (CTE). CTE is a progressive disease characterized by Axonal injury tau neurofibrillary tangles (NFTs) and, in some cases, transactive response DNA binding protein 43 (TDP43). In this case report, we discuss a patient who experienced auditory verbal hallucinations (AVH) and cognitive symptoms with behavioral issues due to recurrent RHI. We aim to explore this presentation further to study the relationship between RHI and CTE and examine the psychological effects of physical brain trauma.

A 43-year-old white male with a history of RHI from Multiple sports-related concussions was admitted to the Psychiatric unit for Cognitive difficulties with auditory verbal hallucinations with associated mood symptoms for the past four years, impacting both his sleep and productivity at work. We discuss the different types of auditory hallucinations seen in patients with RHI and CTE. We discuss evidence to support our determination in this case due to repeated RHI, which led to symptomatology suggestive of CTE. Differential diagnoses are considered, and evidence is provided to rule them out based on the patient's history.

This case report underscores the diagnostic challenges associated with CTE, which can manifest with a spectrum of psychiatric symptoms encompassing mood, cognition, and behavior. The medical diagnosis of Chronic Traumatic Encephalopathy (CTE) in living patients is still a challenge, as effective biomarkers for this condition have yet to be discovered. Although research diagnostic criteria have been proposed, there is no definitive way to diagnose CTE in living patients. Therefore, further investigation is necessary to develop accurate diagnostic tools and effective treatments for CTE.