

Pathological Features of Traumatic Brain Injury

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Abstract

An injury to the brain caused by an external force is referred to as a traumatic brain injury (TBI), also known as an intracranial injury. The severity of a traumatic brain injury (TBI), mechanism (closed or penetrating head injury), or other characteristics (e.g., occurring in a specific location or over a widespread area) can be used to classify TBI. Head injury is a broader category that includes damage to other structures like the skull and scalp. Physical, mental, social, emotional, and behavioral symptoms are all possible outcomes of traumatic brain injury (TBI), which can range from complete recovery to permanent disability or death.

Keywords: Brain Injury; Trauma

Introduction

Violence, vehicle collisions, and falls are some of the causes. A sudden acceleration or deceleration within the cranium or a complex combination of movement and sudden impact can result in brain trauma. In addition to the damage done at the time of the injury, a number of subsequent events may cause additional harm. Changes in cerebral blood flow and skull pressure are among these processes. Computed tomography (CT) and magnetic resonance imaging (MRIs) are two types of imaging that are utilized in the process of diagnosis.

Use of seat belts and helmets, not drinking and driving, efforts to prevent older adults from falling, and safety measures for children are all prevention measures. Depending on the injury, treatment may be minimal or require interventions like medications, emergency surgery, or surgery years later. For rehabilitation, physical therapy, speech therapy, recreation therapy, occupational therapy, and vision therapy may be used. Services for community support, supported employment, and counseling may also be helpful [1-5].

Discussion

Traumatic brain injuries (TBIs) are a leading cause of death and disability worldwide, particularly among children and young adults. Males suffer from TBIs approximately twice as frequently as females. The 20th century saw advancements in diagnosis and treatment that resulted in lower death rates and better outcomes. The orbitofrontal cortex (the lower surface of the frontal lobes) and the anterior temporal lobes, which are areas that are involved in social behavior, emotion regulation, olfaction, and decision-making, are the most common areas to have focal lesions in non-penetrating traumatic brain injury. Research shows that the most common areas to have focal lesions in non-penetrating traumatic brain injury are the orbitofrontal cortex (the lower surface of Epidural hematoma involves bleeding into the space between the skull and the dura mater, the outermost of the three membranes surrounding the brain. Subdural hematoma involves bleeding between the dura and the arachnoid mater. Subarachnoid hemorrhage involves bleeding into the space between the arachnoid membrane and the pia mater. Intraventricular hemorrhage is when there is bleeding in the ventricles.

Symptoms vary depending on the type of TBI (diffuse or focal) and the affected region of the brain. Unconsciousness typically lasts longer in people who have been injured on the left side of the brain than in people who have been injured on the right. Symptoms also vary depending on the severity of the injury. Mild TBI symptoms may also

be present in moderate and severe injuries. A person with a moderate or severe TBI may have a headache that does not go away, repeated vomiting or nausea, convulsions, an inability to awaken, dilation of one or both pupils, slurred speech, aphasia (a deficiency in identifying, understanding, processing, and describing emotions), dysarthria (muscle weakness that causes disordered speech), weakness [6-10].

Conclusion

According to estimates, between 1.6 and 3.8 million traumatic brain injuries each year are the result of sports and recreation activities in the United States. In children aged two to four, falls are the most common cause of TBI, while in older children, traffic accidents compete with falls for this position. TBI is the third most common injury to result from child abuse. Abuse causes 19% of cases of pediatric brain trauma, and the death rate is higher among these cases. Despite the fact TBI, which is the leading cause of death and disability in war zones, is also caused by firearms and blast injuries from explosions. Representative Bill Pascrell, a Democrat from New Jersey, calls TBI "the signature injury of the wars in Iraq and Afghanistan. Domestic violence is another cause of TBI, as are work-related and industrial accidents. A promising technology known as activation database-guided EEG biofeedback has been shown to restore a TBI patient's auditory memory ability to levels above those of the control group.

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