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Case Report

“Stuttering” after minor head trauma

Abstract

Traumatic brain injury (TBI) is defined as impairment in brain function as a result of mechanical force. It is classified based on clinical findings using the Glasgow Coma Scale (GCS). *Mild TBI* is defined as GCS 14–15; moderate, 9–13; and severe, 3–8 [1–6]. Patients with the same TBI classification may have very different underlying pathology. In moderate to severe TBI, the primary pathology may include contusions, hemorrhage, diffuse axonal injury, direct cellular damage, “tearing and shearing of the tissues, loss of the blood-brain barrier, disruption of the neurochemical homeostasis and loss of the electrochemical function” [5]. Although the primary pathology associated with mild TBI may be milder versions of the same pathology associated with moderate and severe TBI, it is generally a metabolic injury [7–13]. However, it is reported that 15% of patients with mild TBI and a GCS score of 14 or 15 will have an intracranial lesion; less than 1% of these require neurosurgical intervention. Although patients with mild TBI may have intracranial lesions, it is rare that the presenting and only physical examination finding is an isolated neurologic finding [1–19]. Here we present a case of isolated head trauma with a single physical examination finding—expressive aphasia.

There are 2 validated brain computed tomographic (CT) decision rules for evaluation of mild TBI that are commonly used in emergency medicine: the Canadian CT Head Injury Rule and the New Orleans CT Head Criteria. These rule sets are used to exclude patients who will not benefit from CT brain imaging. Although these 2 criteria are highly sensitive for excluding patients who will require neurosurgical intervention, the presence of neurologic findings should prompt the physician to consider a brain CT even if these 2 decision rules are negative [1–19].

A 25-year-old man presented to the ED 2 days after an assault with the chief complaint that he was “stuttering.” The patient reported that he was assaulted with bare fists with loss of consciousness. The initial presentation had been at a different emergency department on the day of injury, at which time the patient states he was stuttering. He reported the loss of consciousness to the initial treating emergency physicians and was discharged without imaging based on the low GCS. He denied any other complaints on his initial encounter.

At the second ED presentations, 2 days after the initial presentation, the patient denied having nausea, vomiting, weakness, paresthesias, amnesia, difficulty concentrating, feeling depressed, attention difficulties, insomnia/sleep disturbances, headaches, blurred vision, seizures, or irritability. On physical examination, vital signs were normal and GCS was 15. There were no external signs of trauma; no contusions, deformities, battle sign, raccoon’s eyes, or hemotympanum. Neurologic examination showed no

abnormalities of cranial nerve II–XII, gait was steady and intact, and pupils were round and equally reactive to light. His neck was supple without midline cervical spine tenderness or deformity. The patient did, however, have difficulty speaking during the examination; he appeared to struggle to find certain words. The patient was found to have an isolated expressive aphasia. Despite the isolated positive finding on physical examination, the patient did not rule in on both the Canadian CT Head Injury Rules and the New Orleans CT Head Criteria.

Computed tomography of the brain and cervical spine was ordered, and it was revealed that the patient had an acute left subdural hematoma which measured approximately 14.8 mm with minimal midline shift (Figs. 1–3). There was also a left brain contusion and a small acute right subarachnoid hemorrhage. After the radiography was reviewed, neurosurgical and trauma consults were placed. The neurosurgery team recommended admission, Keppra, magnetic resonance imaging of the brain, magnetic resonance imaging of the cervical spine, and magnetic resonance angiography of the brain. No other acute findings were found. The patient was admitted for approximately 36 hours, after which he was discharged home.

The patient was contacted via telephone approximately 4 months after the presentation. He reports that he is doing well; however, he continues to have residual expressive aphasia. He states that the aphasia is minor and has minimal impact on his life. He did not attend any follow-up appointments and when asked why, he stated he was “busy with work.”

Expressive aphasia as the only physical examination finding after minor head trauma is a rare presentation. In the case of this patient, it was the only reported complaint. Had we used the Canadian CT Head Injury Rule and/or the New Orleans CT Head Criteria as the sole determinant for obtaining imaging, we would not have discovered the patient’s intracranial injuries. However, as physicians who also factor in patient presentation and clinical experience, we went ahead and ordered the CT. This is a good example that guidelines are meant to aid in the decision-making process and are not meant to establish definitive rules. Experience and gestalt are just as important as ever in providing the best care for patients.

Stephen Strasberg MD
Elizabeth J. Johnson MD*
Thomas Parry MD

Department of Emergency Medicine, Lincoln Medical and Mental Health Center, Bronx, NY

*Corresponding author

E-mail address: johnson.elizabeth.jane@gmail.com (E.J. Johnson)

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Fig. 1. Left subdural hematoma approximately 14.8 mm with minimal midline shift. Left brain contusion and a small acute right subarachnoid hemorrhage.

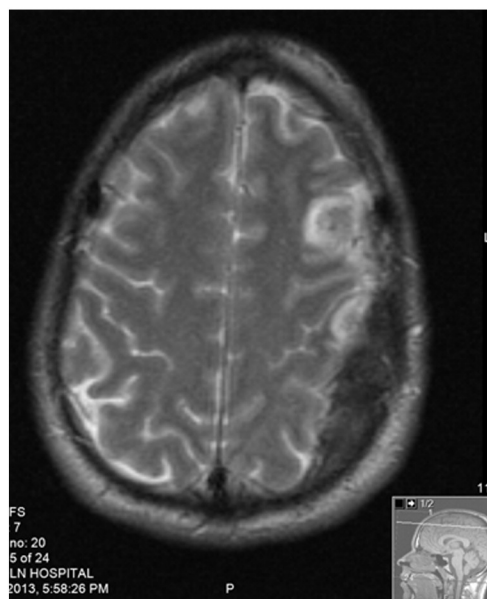


Fig. 3. Magnetic resonance imaging showing left subdural hematoma. Left brain contusion and a small acute right subarachnoid hemorrhage.

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Fig. 2. Left subdural hematoma approximately 14.8 mm with minimal midline shift. Left brain contusion and a small acute right subarachnoid hemorrhage.