Case Study: The Forklift Driver

Joining Forces Initiative

A Case Vignette: 26-year-old male veteran presents with complaints of chronic fatigue and nausea. Possibly Mild Traumatic Brain Injury

dès Anges Cruser, PhD, MPA
Associate Professor, Medical Education & Social and Behavioral Science Director, Mental Sciences Initiatives Program
University of North Texas Health Science Center at Fort Worth
Texas College of Osteopathic Medicine
Fort Worth, TX

Alan Podawiltz, DO
Interim VP for Health Affairs
University of North Texas Health Science Center at Fort Worth
Texas College of Osteopathic Medicine
Fort Worth, TX

Murray Berkowitz, DO, MA, MS, MPH, C-NMM/OMM, C-PVM, CAQ-OCC MED
Associate Professor of Neuromusculoskeletal Medicine and OMM; Director, Family Medicine/OMM Clerkship;
Director, Preventive and Community-Based Medicine
Georgia Campus - Philadelphia College of Osteopathic Medicine
Suwanee, GA

Charles E. Henley, DO, MPH
Associate Dean for Clinical Affairs
Marian University College of Osteopathic Medicine
Indianapolis, IN

Andrew Yuan, DO
Southport Medical Center
Fairfield, CT

Anita M. Navarro, MEd
Research Analyst, Careers in Medicine
Association of American Medical Colleges
Washington, DC

Tyler Cymet, DO
Associate Vice President for Medical Education
American Association of Colleges of Osteopathic Medicine
Chevy Chase, MD
Case Study: The Forklift Driver

Joining Forces Initiative

Chief Complaint
A 26-year-old male presents to your office complaining of chronic fatigue and nausea. He is working as a forklift operator at a local warehouse. He recently separated from his wife of seven years and has two children, ages 2 and 6. John states, “It seems like I need a lot more rest than I used to and it’s like my body and mind both tire easily. When my brain gets tired, it’s hard to think and my headaches get worse and I get a real bad stomachache. Sometimes I actually throw up. However, it seems like some days are better than others. I try to avoid crowds, anything that may be confusing, and loud sounds quickly overload my brain and my ears ring terribly. I can’t seem to handle noise like I used to.

“When there is more than one person talking, I have trouble focusing on the conversation. Those situations feel exhausting - my brain gets overloaded. My wife and I are separated because I can’t handle all the family activity and talking. She says I am not the person she married. When it’s noisy or I get confused, I can’t get my thoughts together and I get angry and lose it.”

Social History:
The patient is a high school graduate, is active in sports, and is a combat veteran with two tours of duty in Iraq, with his last duty one year ago. Married but currently separated with two children, he is currently living with his parents. He is employed full time. He denies any current or past legal issues. He has not engaged in any social activities in the last year.

Physical Examination:
The patient is a well-nourished 26-year-old male who appears his stated age, with normal weight for his height. Vital signs are stable. Head is normocephalic, without any signs of trauma. Mouth mucosa is pink and intact with no sign of lesions; vision is intact. External examination of the ears is normal; however, when the tuning fork was used to check for lateralization, he complained of discomfort with the ringing in his ears. Lungs were clear to auscultation in all fields, and heart sounds were normal with no murmur, rubs or clicks. Abdomen was soft, non-tender to palpation; bowel sounds were present in all quadrants, with no organomegaly. Genitalia and rectal exam were normal, without trauma or lesion. Neurologically, he had normal deep tendon reflexes; balance and gait were slightly disturbed, and muscle tone was good.

Mental Status:
The patient is cooperative, alert, oriented; no delusions or hallucinations, and his thoughts are goal-directed and logical. During the interview, the patient suddenly becomes tearful and states “I am just not man enough.” He states that during his last tour in Iraq, his company lost several soldiers. He denies any flashbacks or disturbing dreams; describes normal sleep. He states that he was knocked unconscious several
times from nearby explosions that resulted in two short hospital stays. His children seem distant from him since his return. He reports that his marriage is on the rocks. He denies any thoughts of suicide. He denies the use of tobacco and illegal drugs, but admits to one to two beers per week. All lab values (Complete Blood Count, Comprehensive Metabolic Panel, and Urine Drug Screen) are within the normal range.

1. What is the most likely diagnosis?
   a. Mild Traumatic Brain Injury
   b. Alcohol Dependence
   c. Post-Traumatic Stress Disorder
   d. Major Depressive Disorder
   e. Generalized Anxiety Disorder

Answer A: Mild Traumatic Brain Injury

The human brain is a fragile organ susceptible to a number of potential insults. Brain tissue can be damaged by infections, tumors, strokes, or traumatic injury from an external force. Damage to the brain that results in cognitive, affective or behavioral (including motor movement) deficits is Traumatic Brain Injury (TBI).

Types of Traumatic Brain Injury include:
   • Penetrating head injuries occur when an object, such as a bullet or shrapnel, enters the brain. This usually causes damage in a specific area, with specific deficits.
   • Closed head injuries occur when there is an external force applied to the head such as that received in various sports, a fall, the concussive force from an explosion, a motor vehicle accident, etc.
   • Both types of TBI can result in bruised brain tissue, bleeding in the brain, lacerations to the brain, nerve damage due to shearing forces, and secondary types of damage such as swelling, fever or seizures.

While the patient admitted to alcohol use, he did not admit to alcohol abuse or dependence. Although he admits he was involved in combat and he denies flashbacks or disturbing dreams at the time of the interview, he could still develop a Post-Traumatic Stress Disorder in the future. He has some depressive features but does not meet the criteria for a Major Depressive Disorder. He has episodes of feeling overwhelmed, especially when he has to think more quickly. However, he does not meet the criteria for a Generalized Anxiety Disorder.

2. What treatment recommendation would be most appropriate for this patient?
   a. None; he will improve on his own.
   b. None; he is permanently disabled.
   c. Medications alone
   d. Multidisciplinary Team Approach

Answer D: Multidisciplinary Team Approach

It is important to note that every brain injury is unique. The diagnosis and treatment of Traumatic Brain Injuries are rarely simple because of the complexity of the brain. Traumatic Brain Injuries are often life-
altering events. Treatment of TBI often includes a multidisciplinary team that works together to assist the patient. With the right treatment, people with TBI can improve the way their brain function and reclaim portions of their lives affected by the injury. A number of key brain areas typically affected are described below.

**Frontal Lobes:**
Frontal lobes are the largest lobes of the brain and are prone to injury because they sit just inside the front of the skull near several bony ridges. Frontal lobes are involved in decision making, planning, organizing, problem solving, selective attention, memory, impulse control, and controlling behavior and emotions. The left frontal lobe also plays a large role in speech and language. Signs of frontal lobe trauma may present with difficulty in problem solving, lack of impulse control, seizures, emotional instability, memory problems, and inappropriate language and social and sexual behavior.

**Temporal Lobes:**
Temporal lobes are responsible for recognizing and processing sound, understanding and producing speech, and various aspects of memory. Signs of temporal lobe damage include: hearing loss, language problems, and sensory problems, such as the inability to recognize a familiar person’s face.

**Occipital Lobes:**
Occipital lobes are responsible for receiving and processing visual information, with specialized areas that assist in perceiving shapes and colors. Signs of occipital lobe damage include: various visual field defects and distortions of various perceptions (size, color, and shape).

**Parietal Lobes:**
Parietal lobes integrate sensory information from various parts of the body, contain the primary sensory cortex, which controls sensation (touch, hot or cold, pain), tell us which way is up, and help to keep us from bumping into things when we walk. Signs of parietal lobe damage include: an inability to locate or recognize parts of your body.

**Brain Stem:**
Brain stems are composed of the midbrain, the pons, and the medulla, and regulate basic involuntary functions necessary for survival, such as breathing, heart rate, blood pressure, swallowing, alertness and sensation. Signs of brain stem damage include: disrupted autonomic functions such as heart rate, breathing, and swallowing.

**Cerebellum:**
The cerebellum controls balance, movement, and coordination. Signs of cerebellum damage include: uncoordinated movement, loss of muscle tone, and an unsteady gait.