Head Injury, Tinnitus, and Mental Health Symptoms

By Caroline J. Schmidt, PhD

While tinnitus is often associated with hearing loss, for some people its onset accompanies a head injury. Today we are just beginning to understand the complex relations among overlapping syndromes that result from blast waves, blunt force trauma, and acquired brain injuries (e.g., strokes) on the brain. Modern medicine increases the survival rate of those with head injuries, and these syndromes and their associated problems are increasingly gaining attention.

Head injury can create a large number of downstream symptoms and problems. During patient assessment, one symptom alone may not stand out as especially concerning to a provider, but when the provider looks at the entire person and the cumulative effect of damage on functioning, a more challenging set of problems emerges.

Post-traumatic stress disorder (PTSD) is a collection of symptoms that can result from the effects of trauma. It can be helpful for providers to screen patients for the hallmark symptoms of PTSD, which include the following:

- Hypervigilance or always being on guard
- Feeling numb or detached from others
- Avoiding thoughts or situations that might be reminders of the trauma
- Nightmares or reexperiencing traumas

Additionally, the following symptoms of depression and anxiety are not uncommon among people with a history of head injury and/or tinnitus:

- Low mood
- Diminished interest in activities
- Sleep disturbance
- Feeling slowed, tense, or restless
- Fatigue
- Feeling worthless or guilty
- Reduced concentration
- Morbid or suicidal thoughts
- Irritability

During clinical assessment and intervention, symptoms that cause greater impairment of functioning, such as difficulty walking, receive greater medical attention than tinnitus. Therefore, tinnitus is likely to be overlooked initially, and management services delayed, because it is perceived as a less important symptom than others that affect quality of life. Yet many patients find tinnitus exacerbated by mental health symptoms. Those who have also experienced a traumatic head injury are even more vulnerable to such symptoms.

Some head injuries are acquired through a toxin’s effect on the brain and other slower progressing diseases, whereas others result from the head making traumatic contact with an object or surface. Fortunately, the brain is resilient. When connections are disrupted...
through head injury, new connections can form because of the brain’s neuroplasticity, which refers to its ability to reorganize itself and rebuild lost neural connections. Neuroplasticity is similar to when a car takes a detour around construction blocking a road. Although a detour may be a slower, less efficient, and often frustrating route to take, it connects to the desired destination; new neural connections over time may be able to compensate for prior damage in the brain.

Immediately following a head injury, patients should focus on rest and recovery, especially when they continue to experience symptoms such as headache, dizziness, nausea, fatigue, disorientation, or more alarming symptoms such as seizures. Continuous monitoring and evaluation of symptoms during this acute phase are critical to the recovery process, which can last from hours to weeks. Once cleared for increased activity, patients should be assessed to determine whether they are distressed by any of their symptoms, such as tinnitus, or are experiencing mental health symptoms. Once their symptoms are identified, patients can be taught strategies for coping and regaining lost functioning. Various multidisciplinary coping strategies have been suggested for patients with head injuries and tinnitus. In our recent randomized clinical trial of telephone-delivered Progressive Tinnitus Management (PTM), participants with bothersome tinnitus were given at least three sessions of cognitive behavioral therapy (CBT) with a psychologist and two sessions of sound therapy with an audiologist. Participants with symptoms of head injuries (n=62) were able to learn coping skills for tinnitus.

It was observed that participants with more severe symptoms of head injuries (n=18) were less consistent regarding keeping appointments. Additionally, on average they had shorter appointments; their focus and stamina may have limited the length of time they could engage in a therapy session. Of note, victims of traumatic head injury are likely to experience other injuries that require specialized clinical intervention by even larger multidisciplinary teams. Pain, headache, and hearing loss may exacerbate the deleterious effects of head injuries and require specialized care. Patient-centered care enables individuals with head injuries to take the lead in deciding their care plan. However, providers should take immediate action if patients experience suicidal thoughts.

Just as the tinnitus experience is unique for individuals, each head injury must be managed specifically for each individual. Recovery varies greatly from person to person. A combination of small steps and giant leaps in recovery may assist in keeping patients motivated to reach treatment goals. Setbacks are natural and the need for compassionate care should be balanced by other providers’ desire for patients to consistently improve in their functioning.

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