

The Promise of Neuroimaging in MTBI

The greatest challenge for lawyers pursuing liability claims on behalf of victims' traumatic brain injuries that are classified as "mild" (MTBI) has been proving the existence of organic brain damage. We live in a world of "show-me" juries, who have been programmed to disbelieve people pursuing remedies for injuries caused by negligence, assuming, unless convincingly shown otherwise, that they are trying to "get something for nothing." We know that 80% of the 1.5 million people who sustain a nonfatal traumatic brain injury each year in the United States suffer injuries classified as "mild", with a loss of consciousness (or altered consciousness) of less than 30 minutes, an initial Glasgow Coma Score of 13 to 15, and posttraumatic amnesia that lasts less than 24 hours. However, studies have shown that this category of brain injury accounts for about 44% of the \$56 billion annual cost of TBI in the United States. Clearly, many victims of MTBI suffer from severe life-altering problems, including acute cognitive and emotional difficulties. Most patients recover fully from MTBI, but studies have shown that 7-33% have persistent problems.

Commonly used technology often fails to detect MTBI damage

Among the patients with persistent problems, the vast majority have been found to have normal findings on CT scans and on MRI scans typically used in clinical settings. This leads to the obvious question: do these normal findings mean that these people have no structural brain damage, or do they simply indicate that the technology commonly used in the clinical setting is unable to detect damage that exists? Insurance companies and many jurors are inclined to conclude that normal scans indicate a normal brain and that the persistent symptoms are either emotionally based or indicate malingering.

Recent advances in neuroimaging demonstrate that where symptoms persist, structural brain damage often does exist, even though it does not show up on clinically used CT or MRI scans. The Hubble telescope, a recent technological advancement, has revealed many planets that were previously invisible. Newer brain imaging techniques similarly reveal brain damage that was previously invisible.

New neuroimaging techniques help shift the focus from whether

structural brain damage exists to whether the damage was caused by the injury giving rise to a negligence claim. ("Before" and "after" witnesses are more persuasive on this point once the existence of brain damage has been demonstrated.)

New neuroimaging technologies create a more accurate picture

Among the promising new technologies are 3 Tesla MRI scanners. A "tesla" is the measure of the strength of a magnet. 1.5 Tesla is the current prevalent maximum field strength of MRI scanners found in most US hospital, with many facilities having scanners with even weaker field strengths. Many MTBI victims with normal MRIs on weaker scanners are demonstrating abnormalities on the 3 Tesla scanners.

Another promising technology is "Diffusion Tensor Imaging" (DTI), an MRI application that capitalizes on the diffusion of water molecules for imaging the brain. This technology has been effective at demonstrating the "axonal" injury that commonly occurs with MTBI. Another useful form of MRI is Functional MRI (fMRI) which measures brain functioning (as distinct from brain structure.) Dr. Thomas McAllister at Dartmouth Hitchcock Medical Center has found abnormalities on fMRI for MTBI patients with "normal" structural imaging studies.

Other promising technologies include PET (positron emission tomography) and SPECT (single photon emission computed tomography). These technologies are also "functional" in nature, measuring brain metabolism rather than brain structure. The US Army issued a news release on April 25, 2007 indicating that it intends to install SPECT scanners at its brain injury treatment centers to better diagnose these "hard-to-diagnose" wounds. This significant step promises to increase the data supporting this technology and broaden its already growing acceptance for diagnosing MTBI in the scientific community.

Promising new hope for MTBI victims

These new technologies hold promise for victims of MTBI by increasing the likelihood that their injuries will be acknowledged and accurately diagnosed, giving them access to appropriate treatment and relevant legal remedies.

Experienced and dedicated, Robert Luce has successfully represented brain injury and spinal cord victims and their families in Vermont for 15 years. His legal nurse consultant, Marie Whitbeck, provides clients extraordinary personal attention and skilled guidance through the insurance and healthcare systems. Mr. Luce also serves on the board of the Brain Injury Association of Vermont. He may be contacted at **802-863-2375**, bluce@drm.com.

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