

Medical Legal Issues for Neuroscience

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Neurologists, neurophysiologists, neuropsychiatrists and neuropsychologists are frequently asked to give expert opinion in situations of suspected neurologic injury. These confrontations may take the form of evaluating summaries and conclusions of primary treating physicians, or they may occur in depositions or a court of law.

Because of the nature of the U.S. legal system, both plaintiff and defense attorneys are entitled to expert neurologic opinion. Frequently the task is to render an opinion concerning patients presenting with mild closed head injury or neurotoxic exposure — patients that are often described as malingerers, hysterics, suffering psychosomatic or factitious illness, or presenting symptoms encouraged by possible secondary gain. It is imperative that the experts maintain a high degree of professionalism, and study the subjects to the extent that they can rely on accurate and reasonable scientific testimony. Last year a group of neurologists and other neuroscientists assembled to form a new organization that is dedicated to establishing, maintaining, and improving national standards for medical legal activities among neuroscientists. This organization is the American Neuroscience Forensic Association (ANFA).

An example of the utility of this organization is exemplified by the use of topographic brain

mapping as developed by Frank H. Duffy, M.D., for clinical diagnostic evaluations in mild to moderate closed head injury. The use of topographic brain mapping in evaluating such patients is well established in the medical literature. The characteristic symptoms of mild closed head injury typifying diffuse axonal injury is similar to symptoms seen in patients following neurotoxic exposure (e.g., organophosphates, chlorinated hydrocarbon insecticides, heavy metal exposure). These complications may be subtle brain injury that ordinary gross evaluation and testing (history, physical examination, routine diagnostic studies, blood work and routine EEG) may not document as definitive abnormalities. However, an ever increasing number of patients have persistent disabling symptoms, primarily in the realm of disordered cognition, memory and behavior.

The circumstances surrounding precipitating factors of closed head injury and neurotoxic exposure frequently involve a degree of civil or criminal liability. It is the purpose of the ANFA to provide a forum for the exchange of ideas concerning the medical legal usefulness of new technology, such as the topographic brain mapping, in the investigation of these issues. ANFA would also establish appropriate guidelines, minimal national standards, and develop a framework for a teaching program and certification in forensic neuroscience.