

Point -- Counterpoint

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In the December 18, 1992 issue of Dynamic Chiropractic, you may have seen my article, "Brain Mapping Revisited." In that article, I discussed some of the pros and cons of brain mapping which sometimes goes by other terms or acronyms such as BEAM (brain electrical activity mapping), topographical EEG or quantitative EEG. The point of reference for brain mapping in this case was postconcussion syndrome (PCS). If you read the article you'll recall that I cautioned readers that brain mapping was probably most effective in the earlier stages of PCS probably as a result of, as yet, poorly understood mechanisms of neurocentral reorganization. Therefore, it is probably advisable to order this test within the first few months after injury.

Four days after this article appeared, a neurologist in Florida wrote a letter to "DC" Editor Donald Petersen Jr., criticizing some of my comments. He complained that I was relatively uninformed about brain mapping and suggested that I was editorializing on the subject. "It is easy to just 'speak,'" he said. Someone who speaks from any position of authority has a responsibility to his readers. He recommended that I gain more experience with brain mapping and evoked potentials. In particular, this neurologist found fault with my suggestions that brain mapping was best performed in the early stages of PCS. Then he offered his recently published article on brain mapping, apparently in support of his criticisms.

I certainly agree with Dr. Jones (not his real name) that I have a responsibility to my readers. And, I certainly consider it unconscionable to disseminate misinformation. Therefore, I read with interest his recently published article or, as he referred to it, "major article."

Normally, I would simply respond to such a criticism by mail or by phone, but in this case I decided to exploit this issue pro bono publico, so to speak. Why? Because it is an incontrovertible truth in medicine and in chiropractic that technology usually outstrips knowledge. A case in point is brain mapping and various types of evoked potentials. For years I've been following the evolution of these wonderful new technologies. While the literature regarding brain mapping is quite sparse, it is prolific on evoked potentials, and I might add, quite promising. I've been using dermatomal somatosensory evoked potentials (DSSEP) to evaluate the sensory component of various types of neuropathy for several years. The neurology literature very much supports the use of this test with, of course, certain limitations.

Unfortunately, many neurologists are slow to embrace new technology such as DSSEP. After all, it's something new to learn and it's very expensive. There's even a built-in disincentive for new technologies provided by insurance companies who rely on denying payment for "new procedures" for as long as possible by classifying them as "investigational." It's quite common for doctors to call me and say, "Doctor Croft, I asked a neurologist here in town about DSSEPs and he said they don't do them because they're not valid." The solution to this problem is as follows: 1) Give that neurologist some literature on the subject and allow him to draw his own informed conclusion; 2) find a neurologist that does these tests; or 3) find another physician such as a chiropractic neurologist or physiatrist that does these tests.

Dr. Jones believes that brain mapping is (apparently) as valuable and sensitive in the chronic

stages of PCS as in the earlier stages. In support of this contention he offers his article. However, nowhere in this article did he discuss chronology or chronicity. In my article I provided a reference as qualification of my feelings about timing of the brain mapping study.

The study offered by Dr. Jones is not cited as a reference because I don't want to attack him publicly and because it is not a very important article. Here's why. This was a study of several dozen patients with mild head injury who were evaluated with brain mapping and evoked potentials. It was nonrandomized and (apparently) nonblinded. The authors used less than a dozen control subjects in order to determine normal laboratory values. No data was provided relative to this patient's history of injury, symptom character, symptom duration, symptom frequency or symptom severity. Information about other tests such as CT, MR, PET scan, and neuropsychometric tests were also not included.

The authors noted some differences by comparing various components of the test with each other (such as the visual, auditory, and somatosensory evoked potentials) but concluded only that certain pathways "are testable." They did not, however, offer any hypotheses regarding the meaning of these findings and made no attempt to correlate their findings without the patients complaints, the results of other diagnostic tests (such as CT, MR, etc.) or the plenitude of other research now available in our literature concerning the probable underlying pathophysiology (i.e., the diffuse axonal injury).

I was also amused at the references cited in this article. None of them seemed to refer directly to PCS or vehicle trauma. Most described functional psychosis, cerebrovascular disease, epilepsy, and dementia. The rest appeared to have been provided merely to state that brain mapping is an up-and-coming test. And, as I wrote to Dr. Jones, sometimes it is easier just to "quote" those who "speak."

In the end, I believe the study was flawed in a number of ways, and because the reader knows so little about the test subjects, this poorly referenced "major article" makes little more than a minor splash in our current pool of scientific literature. The authors haven't told us who to refer and when.

Dr. Jones (who, by the way, performs brain mapping) seems to have an unusual way of interpreting them and, in all fairness to him, he may be able to pick up lesions (if his methods is valid) in the chronic stages of PCS. Unfortunately my experience has been that neurologists in my part of the universe generally do not. My opinion, therefore, has not changed. Your best bet is to evaluate patients within the first few months with an injury. Hopefully, someone will put this issue to the test soon and give us the definitive answer.

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Editor's Note:

For more on personal injury, consult Dr. Croft's video, "Advances in Personal Injury Practice," #V-435, on the Preferred Reading and Viewing List, pages xx.

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