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Closed Head Injury (CHI) Types I and II with Post Concussion Syndrome (PCS)

Peter G. Bernad
George Washington University School of Medicine
Washington, D.C.

Head trauma is a growing and major cause of morbidity in American society. Common sources of head injury are motor vehicle accidents, falls, sports injuries and interpersonal fighting.

By far the majority of head-injured patients fall into the category of mild closed head injury (CHI) with post concussion syndrome (PCS). I define mild head injury as an injury that is sustained without causing either a skull fracture or major laceration of the brain. The individual usually recovers after a short period of unconsciousness or altered state of consciousness and has a very short hospital stay, if any. There may or may not be any post traumatic amnesia. The Glascock Coma Scale is between 13 and 15. Such patients number almost nine million per year in the United States. Many have persistent symptoms beyond the expected recovery period which is approximately three months. Almost 100 percent of the time, these patients have symptoms of generalized or focal headache. Cervical (whiplash-type symptoms), thoracic and lumbar pains are frequently experienced as well as dizziness, tinnitus, and a sense of "imbalance." Occasionally, loss of libido, impotence and abnormal periods may occur. There may also be a loss of taste and smell, visual problems, numbness in arms and legs, plus some short term memory difficulties and periods of amnesia. These symptoms make up the case of the various subjective complaints of patients who have PCS. Neurologic testing, electroencephalograms, and magnetic resonance imaging of the brain may show abnormalities.

I divide PCS into two broad categories. PCS Type I is benign and entails a fairly good prognosis for recovery and adjustment. The patient usually resumes work within less than six weeks and returns to pre-morbid functioning. In short, these individuals essentially become normal after a rapid recovery. PCS Type II represents a group of patients who have persistent PCS symptoms past the expected recovery period. Unfortunately, many of these individuals never completely return to normal and continue to see physicians and other health care providers. Frequently, they do not return to work or are terminated by their employer for poor performance. They experience many of the symptoms described above, persistently and over a very long period of time, occasionally years. These individuals go on to have multiple subjective symptoms without substantial clinical neurological findings and demonstrate a low level of social and vocational adjustment. Neuropsychologic testing may document an organic cause for the many symptoms.

One of the key features of PCS Type II is that patients seem to have a maladaption to the stress resulting from their injury and its consequences. It has been my experience that these patients suffer increased stress while at the same time their inability to cope is increased proportionately. These psychological skills have never been learned or are not finely tuned and cannot be called into action when needed.

Both Types I and II have more than simple biological etiologies. All patients have psychological, social, environmental, economic and other factors which play a role in the expression of the symptomatology and in the process of the disease. Patients with PCS have varying degrees of cortical dysfunction which involves intellectual skills, memory, speed of perception, judgment, attention, concentration and rate of information processing. Approximately 25-38 percent of these patients develop significant emotional disabilities which further limit their recovery. Impairment of cognitive and intellectual functioning has been well documented following PCS. Results of recent research with the use of progressive muscle relaxation techniques on the PCS Type II will be emphasized.