

Whiplash and Accident

Long term damage to the spine and head is especially common in auto accidents. Doctors of chiropractic have for years recognized the need for neuro-structural integrity in these areas and that most victims of automobile injuries do not fully recover under medical care; they may continue to have problems for years after the accident. This is especially the case of those who have whiplash and concussion injuries. This of course underscores the need for chiropractic care for accident victims. New medical terms acknowledging the chronicity and incomplete healing of accident victims have recently arisen. The terms used are: Postconcussion Syndrome (PCS), Whiplash Syndrome (WS), Post Whiplash Syndrome (PWS), Mild Traumatic Brain Injuries (MTBI), and mild head injury (MHI). The chiropractic profession owes a debt to Arthur Croft, DC of San Diego, California who taught of, and researched the need for the caring of patients who had the above conditions years before these conditions were acknowledged in the medical literature.

The detection and management of pediatric whiplash injuries. Ben Eliyahhu, DJ Proceedings of the National Conference on Chiropractic & Pediatrics, Octo 1993, Palm Springs, CA, November 1993, Palm Beach, Florida.

This paper presents case studies on the detection and management of pediatric whiplash injuries.
Case study one.

A six-year-old female was involved in a rear end collision while sitting in the front seat. She and her mother were taken to the hospital where the mother was examined, x-rayed, collared and released. The child was briefly examined, the mother was told that the child was okay and was discharged. The child complained to the mother of headaches and neck stiffness, was taken to the pediatrician who said the child was fine. The complaints persisted and the mother brought the child to the chiropractor. Infrared thermography scan disclosed abnormalities of the head, neck and upper extremities. Radiographs revealed ligamentous instability, cervical subluxations and myospasm. The mother said that the child began to experience "black-outs" and a neurologist diagnosed Petit Mal seizures. The child improved under medical and chiropractic care and often said that the adjustment gave her the greatest relief and she would often ask her mother to bring her to the chiropractor.

Case study two

An eight year-old boy was involved in an auto accident and complained that his leg and head hurt. Doctors in the emergency room said he was fine. Infrared thermography scans of the child revealed abnormalities due to vertebral subluxations and spinal biomechanical insult. Post adjustment scans showed a return to normal and correlated to the child's symptomatic improvement.

A symptomatic classification of whiplash injury and the implications for treatment. Khan S, Cook J, Gargan M, Bannister G *The Journal of Orthopaedic Medicine* 21[1] 1999.

The goal of this paper was "to determine which patients with chronic whiplash will benefit from chiropractic treatment." 93 patients were interviewed in "structured telephone interviews." From the conclusion: "Whiplash injuries are common. Chiropractic is the only proven effective treatment in chronic cases."

A multiple parameter assessment of whiplash injury patients undergoing subluxation based chiropractic care: a retrospective study. McCoy HG and McCoy M. *Journal of Vertebral Subluxation Research* Vol 1, No 3, 1997 Pp. 51-61.

From the Abstract:

A retrospective study was conducted of 57 subjects who had experienced an

acceleration/deceleration (whiplash) injury.... With subluxation-based chiropractic care, the subject population showed significant increases in cervical flexion and extension, muscle strength, and a decrease in the neck pain disability index. Atlas/axis and Jackson's angles varied inversely from presentation to MCI (maximum chiropractic improvement)... longer durations of care were correlated with the lower ratios (fewer adjustments/week), while shorter durations of care to reach MCI were correlated to higher ratios (average adjustments/week).

Post whiplash syndrome. Bogduk, N. *Australian Family Physician* Vol. 23, No. 12 December 1994 Pp. 2303-2307.

This article, from one of the world's leading anatomists and cervical spine researchers is an excellent paper for the study of whiplash. His observation of the limitations of the medical approach to whiplash: "The treatment of whiplash is based on fashion and faith" (p.2306) underlies the importance of using chiropractic first before resorting to drugs and surgery. In discussing the "core of patients who do not recover", Professor Bogduk describes medicine's failure to help these people as the fault of a "system that denies the problem, discourages research and puts the blame for the problem on the patients." (P. 2307).

From the introduction:

Whiplash is a poorly understood problem that attracts accusations of malingering and compensation neurosis. Recent research has revealed a variety of occult lesions that can be responsible for the chronic pain and suffering after whiplash; however, appropriate diagnostic techniques are still either lacking or not widely used. While there are reasonable options for acute management there is no proven therapy for the chronic situation.

Course of attention and memory after common whiplash: a two-year prospective study with age, education and gender pair-matched patients. Di Stefano G and Radanov BP *Acta Neurol Scand* 1995; 91: 346-352).

Comment: Some studies have documented attention deficits in symptomatic whiplash patients as well as memory loss while other studies have not. This paper reviews the value of the studies done by others in this field and found them to have designs that were "insufficient." The chiropractic interest in this subject is more than that of the neuromusculoskeletal condition of whiplash, but of the brain function that is affected by presumed subluxations of the cervical spine. This work should be read in concert with Gorman's and Zhang's papers in the Improved Brain Function section of this report.

From the abstract:

Attentional functional and memory of common whiplash patients were evaluated during the first two years after experiencing injury....All (117) patients had a similar socioeconomic background, all being injured in automobile accidents and fully covered by insurance plans. Two years following initial trauma, 21 patients remained symptomatic.

When compared with matched controls, the 21 symptomatic patients had no memory impairment but did have attention functional (difficult of follow-up of tasks with divided attention).

Late outcome of mild head injury: results from a controlled postal survey. Bohnen N, Vanzutphen W, Twijnstra A et al. *Brain Injury* 8(8): 701-708, 1994.

In this study, a postal questionnaire was sent to a population of (mild head injury) MHI patients 1 to 5 years post accident and a control group to measure subjective and psychological complaints, distresses and discomforts often mentioned by MHI patients. Interestingly, the distresses and symptoms of the MHI group were indistinguishable from the non-MHI, however the MHI group's symptoms were significantly more severe.

Comment by Dr. Koren: One proposed mechanism of action is that pre-existing subluxation patterns are exacerbated as a result of trauma. In other words, the patients were more "in pattern" or their subluxations were more severe as a result of their accident.]

The conclusion from the abstract was interesting: "The results support the hypothesis that MHI may not

ever be completely reversible.”

Post-traumatic headache. *Journal of Neuropsychiatry and Clinica. Neuroscience* 6(3): 229-236, 1994.
From the abstract:

The authors review post-traumatic headache (PTH). The most common symptom following head injury, PTH is paradoxically most severe after mild head injury. Although most cases resolve within 6-12 months, many patients have protracted or even permanent headache. Because PTH generally has no objective findings, it is often controversial whether the symptom is “real,” “psychogenic,” or “fabricated.” Despite persisting beliefs by physicians, attorneys, and insurers that PTH resolves upon legal settlement, recent studies have shown that “permanent” PTH is usually present several years after a legal settlement. Often PTH affects family life, recreation, and employment. Patients require education and support as well as appropriate evaluation and treatment.

Visceral diseases as a sequela of brain damages. *Vestnik Rossiiskoi Akademii Meditsinskikh Nauk* (1): 12-15, 1994.

From the abstract:

In the period following mild closed brain injury, diseases of the viscera and the body’s systems develop as a result of diffuse lesions in the brain regions. Experimental studies have shown that this is associated with impaired self-regulatory mechanisms responsible for energy metabolic processes in the brain.

Comment by Dr. Koren: This is a very “chiropractic” paper in its approach and acknowledgment of the relationship between visceral conditions and general health and self-regulatory or homeostatic mechanisms. Of course, the authors did not check their patients for the vertebral subluxation complex either in the spine, cranium or pelvis.

The relationship between whiplash injury and subsequent lower back complications. Neel SS et al. *Chiropractic* Oct 1988;1(3):86-88.

It has been observed that people who suffer from whiplash injuries develop low back pain. This study interviewed 52 patients who had been involved in a whiplash type injury and found that 85% of them reported lower back pain after the whiplash.

The patients in this study had no previous motor vehicle accidents, were wearing lap and harness seat belts and had no previous low back pain.

Relationship between early somatic, radiological, cognitive and psychosocial findings and outcome during a one-year follow-up in 117 patients suffering from common whiplash. *Br J Rheumatol* 1994; 33:442-8.

Initial examinations of 117 whiplash patients was performed a few days after the accident, and 3, 6 and 12 months afterwards. After one year, 28 patients (24% of total) were symptomatic. Poor improvements were associated with severity of injury, previous history of head trauma and headache, sleep disturbance immediately after accident, nervousness and reduced speed of information processing.

Considerations in the rehabilitation of cervical myofascial injury, *Canadian Family Physician*, Vol. 32, Sept. 1986.

About 10-15% of motor vehicle cervical injuries fail to achieve a functional recovery 2-3 years after the accident.

Whiplash injuries: their long-term prognosis and its relationship to compensation Hodgson, S.P., *Neuro-Orthopedics* 7, 1989.

62% of the people injured in a whiplash soft-tissue trauma will have continued complaints between 10 and 15 years after the date of the accident.

PET and SPECT in whiplash syndrome: a new approach to a forgotten brain? Otte A, Ettlin TM, Nitzsche EU, Wachter K, Hoegerle S, Simon GH, Fierz L, Moser E, Mueller-Brand J. *J Neurol Neurosurg Psychiatry* 1997; 63:368-372.

From the abstract:

Whiplash associated disorders are a medicolegally controversial condition becoming increasingly worrisome to the western world. This study was designed to evaluate perfusion and glucose metabolism in [the] whiplash brain.

Comment by Dr. Koren: Whiplash patients have traditionally reported a number of symptoms that are related to brain function – i.e. loss of memory, vision changes, emotional changes. This study involved six patients suffering from whiplash syndrome and 12 normal controls. They gave everyone chemicals that reveal brain function when viewed by specialized equipment (PET and SPECT) which is similar to a CAT scan for the brain. In the patient group, there was “significant hypometabolism” or decreased brain function and hypoperfusion or decreased blood in the parieto-occipital regions on the right and left side compared to the control group.

But most revealing was the authors’ statement as to the possible cause of the brain changes after they ruled out direct injury to the brain and brain structures: “It is hypothesized that parieto-occipital hypometabolism may be caused by activation of nociceptive afferent nerves from the upper cervical spine.”

Chronic cervical zygapophysial joint pain after whiplash: a placebo-controlled prevalence study. Lord, WM, Barnsley L, Wallis BJ, Bogduk N. *Spine*. 1996;21:1737-45.

This double-blind placebo-controlled trial implicates the facet joints as the most common pain source from whiplash type injury. It builds on other research pointing to the same source of whiplash pain.

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