

"Whiplash": Fictive or Factual?

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So-called "whiplash," or acceleration injury, varies radically in its appearance, depending on whether it is suffered by the defendant, by the plaintiff or by the community at large. The defendant's medical experts can show that the victim is hysterical or malingering, the plaintiff's can show that he has suffered a nervous system injury, and the community's can show that he is a foolhardy, reckless and masochistic driver of his vehicle. The purposes of this article are, first, to show that each one of these experts may correctly describe his individual case, and second, to plead for prevention of this plague by the routine use of the lap belt, shoulder harness and head restraint.

The Defendant's Acceleration Injury

The defendant, often an insurance company, will note that the term "whiplash injury," attributed to Crowe in 1928, was later retracted by him and other observers because of its inaccuracy¹ and that the International Classification of Disease does not recognize this term. A recent definition of the defendant's whiplash is "a psychosomatic reaction to cervical acceleration strain and the fear of suffering a rear end collision, with symptoms including pain in the neck, weakness, anxiety and sexual disorders. Extensive documentation shows that only 2% to 20% of such patients show any objective signs of injury on examination, but that many show a lively interest in compensation."²

Several observers have shown that such patients with the most severe symptoms had suffered the least severe physical injuries.^{3,4,5,6} Many such patients exhibit a traumatic neurosis, which according to some, afflicts a neurotic who has been looking for a trauma and now has found one, and who also gives a previous history of dependency,⁸ sexual difficulties,^{9,10} and the obvious fear of a sudden violation from behind.²

Malingering, which appeared in 1977 in the American Psychiatric Association's Diagnostic and Statistical Manuals, can be the true explanation for the "whiplash" condition, according to a number of eminently well qualified observers.^{11,7,2,12} The term "compensation neurosis," which waffles between malingering for compensation and a neurotic illness, is an imprecise term. A related, more forthright rubric is "greenback neurosis."²

It is clear to me that certain cases of whiplash, but not all cases, are primarily problems which originate in neurosis, malingering or the Munchausen Syndrome.²⁰

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The Plaintiff's Acceleration Injury

A criminal lawyer describes doctors as belonging to one of two schools — either bleeding hearts or hangman's helpers — and in civil cases involving accelerative injuries many physicians, particularly psychiatrists, belong to the former group because they are patient-oriented practitioners. Our patient is the plaintiff, and one definition of the patient's whiplash is "a cervical acceleration injury; a protean term of medical and legal usage, signifying cervical muscle sprain, injury to the cervical spine, its ligaments, disc and nerves, the cerebral hemispheres, upper spinal cord and the autonomic nervous system, the vertebral artery, the auditory and vestibular systems and the retinal macula. . . ." ¹⁴

Experimental studies with biomedical models and with a very few brave volunteers show that a force of 9 G at the neck, from a rear end impact of 16 Kmph (10 mph), is multiplied to 23 G at the forehead. A 16 Kmph impact produces a more severe injury than an impact at 48 Kmph. In experimental animals and human clinical reports, acceleration of the head, and milliseconds later, the brain, particularly damages the frontal poles and the temporal poles, producing gross hemorrhages in these areas. Acceleration also shears the cerebral veins, which are thin-walled. It can generate sufficient negative pressure to produce gas bubbles within the brain, shown by X-ray, *all without direct impact to the head.* ^{15,1,16}

Spinal cord acceleration whipsaws the cord from hyperextension to hyperflexion; it is hyperflexion which stretches the cord and stretches or tears the emerging spinal nerves.¹⁷ About 10% of normal people have a tight fit of the spinal cord in the cervical region within the vertebral canal, thus being in jeopardy from injuries such as spinal concussion, acute myelopathy with paraplegia, and brachial neuropathy.¹⁴ A vertebral artery which is normal or atherosclerotic makes two hairpin turns shortly before forming the basilar artery and is markedly deformed by flexion. The auditory and vestibular structures supplied by the vertebral show objective signs of injury after whiplashes: disturbance of tonic neck reflexes, nystagmus and hearing loss at 4000 and 6000 Hz.¹⁴ Acceleration, also without direct impact to the head or its component parts, may injure the eye by causing detachment of the hyaloid membrane, resulting in maculopathy and severe loss of visual acuity.¹⁴

Cervical muscle sprain has been clinically noted many times, and the one reported autopsy ¹⁴ showed ligamentous and muscular tears in the middle and lower cervical spine region. Fracture or dislocation of the cervical 6th and 7th vertebrae are well known to follow accelerations,^{12,17} and are sometimes not diagnosed until 3 months or more after injury. Herniation of an intervertebral disc, particularly between Cervical 6 and 7, may take a year to become manifest.¹⁸

In an overview of the sick, sore, lame and disabled plaintiff-patient, I am certain that if he has an objective injury such as a fracture of Vertebra C1 or C2, which is also known as a Hangman's Fracture,¹⁹ and a convincing relation between injury and symptom, then the injury actually caused his symptom. But I have seen very few of such clear-cut cases.

The Community's Whiplash Problem

With one automotive vehicle for every two persons in our population, this

country is a nation of drivers, including many who we shall see are dangerous, and more who are endangered. Most so-called whiplashes follow a rear end impact, defined as an impact between 5 o'clock and 7 o'clock, or 150 to 210 degrees. We have about 16 million automotive accidents a year, of which 7 million are rear end impacts. About a quarter of these rear end impacts cause injuries, and a tenth of them produce fatalities.^{1,12,13}

Since our citizens don't practice safety, we have attempted to legislate it. The Motor Vehicle Safety Act of 1966 and Motor Vehicle Safety Standard #208 impose mandatory design requirements. An energy-absorbing steering column has reduced fatal injuries by 10%. Since 1970, dashboards must be padded, which reduces the impact loading¹⁶ to the head.¹³⁻

Since 1969, the head restraint (colloquially called a head rest), lap belts and shoulder harness are required to be installed. But people are not required to use them. Using lap belts and shoulder harness combined, according to one study, reduced serious and fatal injuries by 50%. The National Automobile Club estimated that in 1974, if all drivers wore their safety belts whenever they were in their vehicles, 14,000 lives would have been saved.¹³ Windshields must now be more head-resistant. American Standard Safety Code Z-26-1 of 1966 requires a thicker sheet of plastic between the layers of impact resistant glass, which cuts down the number of lacerations of the face and throat, but probably increases the proportion of brain injuries.

Air bags are still a hotly debated item. Air bags are placed in front of the driver's seat, inflate in 1/200th of a second, obstruct the driver's vision, knock off spectacles and sometimes bruise or lacerate the face; they do, however, keep the body from crashing forward immediately upon receiving a front end impact of 10 Kmph (8 mph). They cost about \$300.

Some opponents of the airbags assert that their cars are their castles, in which they have the right to select their own options for safety. Other opponents of air bags, with whom I agree, point out that the combination of head restraint properly placed, lap belt and shoulder harness, when used at all times a person is within the vehicle, will prevent as many deaths and injuries as the air bag, but at one-tenth of its cost. In addition, the combined head restraint, lap belt and shoulder harness gives good protection against angle and side collisions and against rear end impacts, such as those that may cause a "whiplash."

Summary

Mechanical restraints, stronger interiors and crash resistant features in automobiles are as necessary as holding a child firmly by the hand when he is walking through traffic. There is an even greater need to teach our citizens to drive more safely, and to have a workable program to keep people from driving under the influence of alcohol and other mind-affecting substances.

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