

Concussion

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The Malone Telegram

February 3, 2007

In the hierarchy of injuries, concussion is often considered to be near the bottom, almost a non-injury. If a CT scan of the head is normal -- meaning there is no bleeding or swelling in or around the brain, and no skull fracture -- generally the person goes home to rest and recover.

I myself had a concussion a few years ago, and found that for a few days afterwards my brain didn't work quite right. I banged my head on a cement sidewalk in a bike accident (with no helmet on, I'm ashamed to say). I lost consciousness for a split-second. I walked home and lay down, but half an hour later one edge of my visual field started to get wavy, like some people get before a migraine.

This worried me, so I went to the ER. The CT scan was normal. Several hours later, I tried seeing patients in my office, but my thoughts were like molasses -- I couldn't pull them together fast enough.

I could function again a few days later, but needed extra sleep for weeks. I was tired, and I made sure to get the sleep because it helps the brain recover.

Happily for me, my concussion was mild. The symptoms can be worse, like those of a teenager I once saw. Though awake and talking easily, he remembered nothing from minute to minute. He asked the same questions and got worried about the same things over and over, because he couldn't remember the answers or what he had just asked. After a night (which he spent in the hospital) his memory was working again, but he permanently lost the two to three hours before the accident and events right after it.

Coaches and doctors for athletic teams know that there has to be a certain recovery period -- days to weeks -- before a player goes back into play and risks another concussion. This is because two concussions in a row, without enough time in between for recovery, can sometimes make the brain swell abruptly -- and fatally. There are specific time guidelines for returning to play, depending on the severity of the symptoms. (Children, incidentally, are more susceptible to such brain swelling than adults.)

It is now becoming clear that having more than two or three concussions in a lifetime, even spread out over time, can cause significant, permanent brain damage. The damage may show up in adulthood as cognitive or memory problems, early Alzheimer's-like dementia, depression, or suicide.

Minor head trauma can also cause hormone problems in children. A pediatric endocrinologist told me she often finds a history of playing hockey, with lots of checking, in boys she sees for growth failure and early puberty. These problems stem from the pituitary, a gland that is attached by a slender, easily disrupted stalk to the rest of the brain. Even mild head injuries, without loss of consciousness, can be associated with such hormone problems in children.

Football, boxing, and wrestling are noteworthy for the risk of concussion. Even soccer players get concussions -- from banging heads when two try to "head" the same ball.

But football may be especially problematic. The Center for Retired Athletes, based at the University of North Carolina, published a study last year of over 2500 retired professional football players, average age 54. Sixty-one percent had had at least one concussion during their professional football career, and 24 percent had three or more.

The study showed that retired players with three or more concussions, compared to those with no concussions, were five times as likely to have clinically diagnosed "mild cognitive impairment," and three times as likely to have significant memory problems. There was no clear relationship between Alzheimer's disease and number of concussions, though the group as a whole showed unusually early onset of Alzheimer's disease.

Recently, autopsy studies were done of three deceased, retired NFL players, age 44-50. Two committed suicide. All had symptoms of cognitive impairment and major depression, and one also had Parkinson's disease. Autopsies showed microscopic evidence of "chronic traumatic encephalopathy," meaning disease of the brain caused by injury a long time ago, already described from autopsies of brains of retired boxers with full-fledged Alzheimer's disease.

This is worth careful consideration, especially when we learn that there are up to 300,000 cases of concussion (also called "mild traumatic brain injury") per year in contact sports in the United States. Bear in mind that in football, these occur even with helmets on. All players are at risk, but quarterbacks, wide receivers, tight ends and defensive backs have the highest risk.

The take-home message to parents and kids: protect your heads and your kids' heads. Those brains are needed into old age. Two concussions in a lifetime appear to be all that is really safe. Once a person has had three, the likelihood of thinking and memory problems starts to climb. Depression and even suicide can be the outcome of a life with many mild head traumas, we are now discovering. As I say, all this is preventable.

(In case you're wondering, I always bike with my helmet on -- now.)

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