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Expert Ties Ex-Player's Suicide to Brain Damage

By ALAN SCHWARZ



Since the former National Football League player Andre Waters killed himself in November, an explanation for his suicide has remained a mystery. But after examining remains of Mr. Waters's brain, a neuropathologist in Pittsburgh is claiming that Mr. Waters had sustained brain damage from playing football and he says that led to his depression and ultimate death.

The neuropathologist, Dr. Bennet Omalu of the University of Pittsburgh, a leading expert in forensic pathology, determined that Mr. Waters's brain tissue had degenerated into that of an 85-year-old man with similar characteristics as those of early-stage Alzheimer's victims. Dr. Omalu said he believed that the damage was either caused or drastically expedited by successive concussions Mr. Waters, 44, had sustained playing football.

In a telephone interview, Dr. Omalu said that brain trauma "is the significant contributory factor" to Mr. Waters's brain damage, "no

matter how you look at it, distort it, bend it. It's the significant forensic factor given the global scenario."

He added that although he planned further investigation, the depression that family members recalled Mr. Waters exhibiting in his final years was almost certainly exacerbated, if not caused, by the state of his brain — and that if he had lived, within 10 or 15 years "Andre Waters would have been fully incapacitated."

Dr. Omalu's claims of Mr. Waters's brain deterioration — which have not been corroborated or reviewed — add to the mounting scientific debate over whether victims of multiple concussions, and specifically longtime N.F.L. players who may or may not know their full history of brain trauma, are at heightened risk of depression, dementia and suicide as early as midlife.

The N.F.L. declined to comment on Mr. Waters's case specifically. A member of the league's mild traumatic brain injury committee, Dr. Andrew Tucker, said that the N.F.L. was beginning a study of retired players later this year to examine the more general issue of football concussions and subsequent depression.

"The picture is not really complete until we have the opportunity to look at the same group of people over time," said Dr. Tucker, also team physician of the Baltimore Ravens.

The Waters discovery began solely on the hunch of Chris Nowinski, a former Harvard football player and professional wrestler whose repeated concussions ended his career, left him with severe migraines and depression, and compelled him to expose the effects of contact-sport brain trauma. After hearing of the suicide, Mr. Nowinski phoned Mr. Waters's sister Sandra Pinkney with a ghoulish request: to borrow the remains of her brother's brain.

The condition that Mr. Nowinski suspected might be found in Mr. Waters's brain cannot be revealed by a scan of a living person; brain tissue must be examined under a microscope. "You don't usually get

brains to examine of 44-year-old ex-football players who likely had depression and who have committed suicide," Mr. Nowinski said. "It's extremely rare."

As Ms. Pinkney listened to Mr. Nowinski explain his rationale, she realized that the request was less creepy than credible. Her family wondered why Mr. Waters, a hard-hitting N.F.L. safety from 1984 to 1995 known as a generally gregarious and giving man, spiraled down to the point of killing himself.

Ms. Pinkney signed the release forms in mid-December, allowing Mr. Nowinski to have four pieces of Mr. Waters's brain shipped overnight in formaldehyde from the Hillsborough County, Fla., medical examiner's office to Dr. Omalu in Pittsburgh for examination.

He chose Dr. Omalu both for his expertise in the field of neuropathology and for his rare experience in the football industry. Because he was coincidentally situated in Pittsburgh, he had examined the brains of two former Pittsburgh Steelers players who were discovered to have had postconcussive brain dysfunction: Mike Webster, who became homeless and cognitively impaired before dying of heart failure in 2002; and Terry Long, who committed suicide in 2005.

Mr. Nowinski, a former World Wrestling Entertainment star working in Boston as a pharmaceutical consultant, and the Waters family have spent the last six weeks becoming unlikely friends and allies. Each wants to sound an alarm to athletes and their families that repeated concussions can, some 20 years after the fact, have devastating consequences if left unrecognized and untreated — a stance already taken in some scientific journals.

"The young kids need to understand; the parents need to be taught," said Kwana Pittman, 31, Mr. Waters's niece and an administrator at the water company near her home in Pahokee, Fla. "I just want there to be more teaching and for them to take the proper steps as far as treating them.

“Don’t send them back out on these fields. They boost it up in their heads that, you know, ‘You tough, you tough.’ ”

Mr. Nowinski was one of those tough kids. As an all- Ivy League defensive tackle at Harvard in the late 1990s, he sustained two concussions, though like many athletes he did not report them to his coaches because he neither understood their severity nor wanted to appear weak. As a professional wrestler he sustained four more, forcing him to retire in 2004. After he developed severe migraines and depression, he wanted to learn more about concussions and their effects.

That research resulted in a book published last year, “Head Games: Football’s Concussion Crisis,” in which he detailed both public misunderstanding of concussions as well as what he called “the N.F.L.’s tobacco-industry-like refusal to acknowledge the depths of the problem.”

Football’s machismo has long euphemized concussions as bell-ringers or dings, but what also alarmed Mr. Nowinski, 28, was that studies conducted by the N.F.L. on the effects of concussions in players “went against just about every study on sports concussions published in the last 20 years.”

Studies of more than 2,500 former N.F.L. players by the Center for the Study of Retired Athletes, based at the University of North Carolina, found that cognitive impairment, Alzheimer’s-like symptoms and depression rose proportionately with the number of concussions they had sustained. That information, combined with the revelations that Mr. Webster and Mr. Long suffered from mental impairment before their deaths, compelled Mr. Nowinski to promote awareness of brain trauma’s latent effects.

Then, while at work on Nov. 20, he read on Sports Illustrated’s Web site, si.com, that Mr. Waters had shot himself in the head in his home in Tampa, Fla., early that morning. He read appraisals that Mr. Waters, who retired in 1995 and had spent many years as an assistant coach at

several small colleges — including Fort Valley (Ga.) State last fall — had been an outwardly happy person despite his disappointment at not landing a coaching job in the N.F.L.

Remembering Mr. Waters's reputation as one of football's hardest-hitting defensive players while with the Philadelphia Eagles, and knowing what he did about the psychological effects of concussions, Mr. Nowinski searched the Internet for any such history Mr. Waters might have had.

It was striking, Mr. Nowinski said. Asked in 1994 by The Philadelphia Inquirer to count his career concussions, Mr. Waters replied, "I think I lost count at 15." He later added: "I just wouldn't say anything. I'd sniff some smelling salts, then go back in there."

Mr. Nowinski also found a note in the Inquirer in 1991 about how Mr. Waters had been hospitalized after sustaining a concussion in a game against Tampa Bay and experiencing a seizure-like episode on the team plane that was later diagnosed as body cramps; Mr. Waters played the next week.

Because of Dr. Omalu's experience on the Webster and Long cases, Mr. Nowinski wanted him to examine the remaining pieces of Mr. Waters's brain — each about the size of a small plum — for signs of chronic traumatic encephalopathy, the tangled threads of abnormal proteins that have been found to cause cognitive and intellectual dysfunction, including major depression. Mr. Nowinski tracked down the local medical examiner responsible for Mr. Waters's body, Dr. Leszek Chrostowski, who via e-mail initially doubted that concussions and suicide could be related.

Mr. Nowinski forwarded the Center for the Study of Retired Athletes' studies and other materials, and after several weeks of back-and-forth was told that the few remains of Mr. Waters's brain — which because Waters had committed suicide had been preserved for procedural forensic purposes before the burial — would be released only with his family's permission.

Mr. Nowinski said his call to Mr. Waters's mother, Willie Ola Perry, was "the most difficult cold-call I've ever been a part of."

When Mr. Waters's sister Tracy Lane returned Mr. Nowinski's message, he told her, "I think there's an outside chance that there might be more to the story."

"I explained who I was, what I've been doing, and told her about Terry Long — and said there's a long shot that this is a similar case," Mr. Nowinski said.

Ms. Lane and another sister, Sandra Pinkney, researched Mr. Nowinski's background, his expertise and experience with concussions, and decided to trust his desire to help other players.

"I said, 'You know what, the only reason I'm doing this is because you were a victim,' " said Ms. Pittman, Mr. Waters's niece. "I feel like when people have been through things that similar or same as another person, they can relate and their heart is in it more. Because they can feel what this other person is going through."

Three weeks later, on Jan. 4, Dr. Omalu's tests revealed that Mr. Waters's brain resembled that of an octogenarian Alzheimer's patient. Nowinski said he felt a dual rush — of sadness and success.

"Certainly a very large part of me was saddened," he said. "I can only imagine with that much physical damage in your brain, what that must have felt like for him." Then again, Mr. Nowinski does have an inkling.

"I have maybe a small window of understanding that other people don't, just because I have certain bad days that when I know my brain doesn't work as well as it does on other days — and I can tell," he said. "But I know and I understand, and that helps me deal with it because I know it'll probably be fine tomorrow. I don't know what I would do if I didn't know."

When informed of the Waters findings, Dr. Julian Bailes, medical director for the Center for the Study of Retired Athletes and the chairman of the department of neurosurgery at West Virginia University, said, “Unfortunately, I’m not shocked.”

In a survey of more than 2,500 former players, the Center for the Study of Retired Athletes found that those who had sustained three or more concussions were three times more likely to experience “significant memory problems” and five times more likely to develop earlier onset of Alzheimer’s disease. A new study, to be published later this year, finds a similar relationship between sustaining three or more concussions and clinical depression.

Dr. Bailes and other experts have claimed the N.F.L. has minimized the risks of brain trauma at all levels of football by allowing players who sustain a concussion in games — like Jets wide receiver Laveranues Coles last month — to return to play the same day if they appear to have recovered. The N.F.L.’s mild traumatic brain injury committee has published several papers in the journal Neurosurgery defending that practice and unveiling its research that players from 1996 through 2001 who sustained three or more concussions “did not demonstrate evidence of neurocognitive decline.”

A primary criticism of these papers has been that the N.F.L. studied only active players, not retirees who had reached middle age. Dr. Mark Lovell, another member of the league’s committee, responded that a study using long-term testing and monitoring of the same players from relative youth to adulthood was necessary to properly assess the issue.

“We want to apply scientific rigor to this issue to make sure that we’re really getting at the underlying cause of what’s happening,” Dr. Lovell said. “You cannot tell that from a survey.”

Dr. Kevin Guskiewicz is the director of the Center for the Study of Retired Athletes and a member of U.N.C.’s department of exercise and sport science. He defended his organization’s research: “I think that some of the folks within the N.F.L. have chosen to ignore some of these

earlier findings, and I question how many more, be it a large study like ours, or single-case studies like Terry Long, Mike Webster, whomever it may be, it will take for them to wake up."

The N.F.L. players' association, which helps finance the Center for the Study of Retired Athletes, did not return a phone call seeking comment on the Waters findings. But Merril Hoge, a former Pittsburgh Steelers running back and current ESPN analyst whose career was ended by severe concussions, said that all players — from retirees to active players to those in youth leagues — need better education about the risks of brain trauma.

"We understand, as players, the ramifications and dangers of paralysis for one reason — we see a person in a wheelchair and can identify with that visually," said Mr. Hoge, 41, who played on the Steelers with Mr. Webster and Mr. Long. "When somebody has had brain trauma to a level that they do not function normally, we don't see that. We don't witness a person walking around lost or drooling or confused, because they can't be out in society."

Clearly, not all players with long concussion histories have met gruesome ends — the star quarterbacks Steve Young and Troy Aikman, for example, were forced to retire early after successive brain trauma and have not publicly acknowledged any problems. But the experiences of Mr. Hoge, Al Toon (the former Jets receiver who considered suicide after repeated concussions) and the unnamed retired players interviewed by the Center for the Study of Retired Athletes suggest that others have not sidestepped a collision with football's less glorified legacy.

"We always had the question of why — why did my uncle do this?" said Ms. Pittman, Mr. Waters's niece. "Chris told me to trust him with all these tests on the brain, that we could find out more and help other people. And he kept his word."