

Washington

Troops may suffer brain ailment tied to sports concussions

By Patricia Kime

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A 27-year-old former Marine who hanged himself following a three-year struggle with posttraumatic stress disorder showed signs of a degenerative brain disease found in athletes who play professional contact sports.

A study of the veteran's brain indicated he had signs of chronic traumatic encephalopathy, or CTE, a disease linked since the 1970s to boxers and later to football and ice hockey players.

A growing body of research suggests CTE, which worsens with age, causes cognitive and behavioral changes in retired athletes and, possibly, military personnel exposed to concussive blasts.

The Marine in the case study, published in the November issue of *Neurosurgical Focus*, was an amphibious assault vehicle crew member who served for four years, deploying twice to Iraq. On his first tour, he was exposed to blast waves from mortars and roadside bombs. He then began showing signs of PTSD — memory loss, irritability and headaches.

After his second deployment, he began drinking and received a concussion while playing football.

As his marriage suffered and he became ill-tempered with his two children, he sought help. He was diagnosed with PTSD and prescribed antidepressants and a blood pressure medicine used to treat anxiety.

About eight months after leaving service in 2010, he told a Veterans Affairs Department practitioner that his life was looking up: He had landed a job and enrolled in college, and charges related to a drunk-driving incident had been dropped.

The next day, he hanged himself. An autopsy showed nothing unusual about his brain, but microscopic analysis showed holes and other markers of CTE, according to the study.

The authors said the CTE likely was related to his exposure to blasts and a lifetime of playing sports. But since his only diagnosis was for PTSD, the authors believe the results could “stimulate new lines of thought and research” on PTSD, wrote Bennet Omalu of the Brain Injury Research Institute.

The case is the first published study of a veteran showing signs of CTE, but scientists, including a group at Boston University, have been studying the ties between concussion and CTE for years. In 2011, former NFL player Dave Duerson fatally shot himself in the chest, leaving notes that his brain go to BU's Center for the Study of Traumatic Encephalopathy.

Researchers there found that Duerson, who showed personality changes and speech problems, had “moderately advanced” CTE.

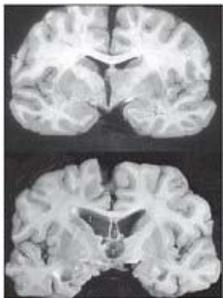
Retired Gen. Peter Chiarelli, the former Army vice chief of staff who promoted partnerships between

the Defense Department and the NFL on brain research, now heads One Mind For Research, which promotes understanding of the brain.

“We just don’t know as much about the brain as we do the other organs,” Chiarelli said April 30 at a conference in Los Angeles. “My desire is to see if we can’t force that science to become more mature.” CTE can only be diagnosed postmortem, and there is no cure. Sufferers experience a decline in cognition and function and eventually dementia similar to Alzheimer’s.

Still, Omalu hopes continued research into what he calls the “CTE spectrum” will lead to new treatments for traumatic brain injury and PTSD.

“This highlights the need for forensic, observational and translational research to further confirm that a proportion of PTSD cases in war veterans may be due to CTE,” he wrote. □



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A normal human brain, top, is shown against one with gaps and holes typical of chronic traumatic encephalopathy.