

“Autopsies of War Dead Reveal Ways to Save Others”

By Denise Grady

From *The New York Times*,

(http://www.nytimes.com/2009/05/26/health/26autopsy.html?_r=1&scp=3&sq=CT%20scan&st=cse)

Published: May 25, 2009

Within an hour after the bodies arrive in their flag-draped coffins at Dover Air Force Base, they go through a process that has never been used on the dead from any other war.

Since 2004, every service man and woman killed in Iraq or Afghanistan has been given a CT scan, and since 2001, when the fighting began in Afghanistan, all have had autopsies, performed by pathologists in the Armed Forces Medical Examiner System. In previous wars, autopsies on people killed in combat were uncommon, and scans were never done.

The combined procedures have yielded a wealth of details about injuries from bullets, blasts, shrapnel and burns — information that has revealed deficiencies in body armor and vehicle shielding and led to improvements in helmets and medical equipment used on the battlefield.

The military world initially doubted the usefulness of scanning corpses but now eagerly seeks data from the scans, medical examiners say, noting that on a single day in April, they received six requests for information from the Defense Department and its contractors.

“We’ve created a huge database that’s never existed before,” said Capt. Craig T. Mallak, 48, a Navy pathologist and lawyer who is chief of the Armed Forces Medical Examiner System, a division of the Armed Forces Institute of Pathology.

The medical examiners have scanned about 3,000 corpses, more than any other institution in the world, creating a minutely detailed and permanent three-dimensional record of combat injuries. Although the scans are sometimes called “virtual autopsies,” they do not replace old-fashioned autopsies. Rather, they add information and can help guide autopsies and speed them by showing pathologists where to look for bullets or shrapnel, and by revealing fractures and tissue damage so clearly that the need for lengthy dissection is sometimes eliminated. The examiners try to remove as many metal fragments as possible, because the pieces can yield information about enemy weapons.

One discovery led to an important change in the medical gear used to stabilize injured troops on the battlefield.

Col. Howard T. Harcke, a 71-year-old Army Reserve radiologist who delayed retirement to read CT scans at Dover, noticed something peculiar in late 2005. The emergency treatment for a collapsed lung involves inserting a needle and tube into the chest cavity to relieve pressure and allow the lung to reinflate. But in one case, Colonel Harcke could see from a scan that the tube was too short to reach the chest cavity. Then he saw another case, and another, and half a dozen more.

In an interview, Colonel Harcke said it was impossible to tell whether anyone had died because the tubes were too short; all had other severe injuries. But a collapsed lung can be life-threatening, so proper treatment is essential.

Colonel Harcke pulled 100 scans from the archives and used them to calculate the average thickness of the chest wall in American troops; he found that the standard tubing, five centimeters long, was too short for 50 percent of the troops. If the tubing was lengthened to eight centimeters, it would be long enough for 99 percent.

“Soldiers are bigger and stronger now,” Colonel Harcke said.

The findings were presented to the Army Surgeon General, who in August 2006 ordered that the kits given to combat medics be changed to include only the longer tubing.

“I was thrilled,” Colonel Harcke said.

The medical examiners also discovered that troops were dying from wounds to the upper body that could have been prevented by body armor that covered more of the torso and shoulders. The information, which became public in 2006, led the military to scramble to ship more armor plates to Iraq.

It was Captain Mallak who decided that autopsies should be performed on all troops killed in Afghanistan or Iraq. Federal law gives him that authority.

“Families want a full accounting,” he said. During World War II and the Vietnam War, he explained, families were told simply that their loved one had died in service of their country.

“Personally, I felt that families would no longer just accept that,” Captain Mallak said.

The examiner’s office has not publicized the autopsy policy and has not often discussed it. Families are informed that autopsies are being performed and that they can request a copy of the report. Occasionally, families object, but the autopsy is done anyway. About 85 percent to 90 percent of families request the reports, and 10 percent also ask for photographs from the autopsy, said Paul Stone, a spokesman for the medical examiner system. Relatives are also told they can call or e-mail the medical examiners with questions.

“Every day, families come back for more information,” Captain Mallak said. “The No. 1 question they want to know is, ‘Did my loved one suffer?’ If we can say, ‘No, it was instantaneous, he or she never knew what happened,’ they do get a great sense of relief out of that. But we don’t lie.”

Indeed, the reports are sent with cover letters urging the families not to read them alone.

The possibility that a relative burned to death is a particular source of anguish for families, and one area in which CT can outperform an autopsy. In a body damaged by flames, CT can help pathologists figure

out whether the burns occurred before or after death. The scans can also tell whether a person found in water died from drowning. Families who request the autopsy reports often put off reading them, said Ami Neiberger-Miller, a spokeswoman for the Tragedy Assistance Program for Survivors, a nonprofit group for people who have lost relatives in war.

"I think people feel, 'We should request it; we may not want to read it today, but we may want to read it 10 years from now,'" Ms. Neiberger-Miller said. Her brother was killed in Baghdad in 2007, she said, and her family has never opened his autopsy report.

Liz Sweet, whose 23-year-old son, T. J., committed suicide in Iraq in 2003, requested his autopsy report and read it.

"For our family, we needed it," Mrs. Sweet said. "I just felt better knowing I had that report." T. J. Sweet's coffin was closed, so Mrs. Sweet asked Captain Mallak for a photograph taken before the autopsy, to prove to herself that it really was her son who had died.

"He was one of the most compassionate people throughout this whole process that I dealt with from the Department of Defense," Mrs. Sweet said of Captain Mallak.

The scans and autopsies are done in a 70,000-square-foot facility at the Dover base that is both a pathology laboratory and a mortuary. Journalists are not allowed inside. The CT scanning began in 2004, when it was suggested and paid for by the Defense Advanced Research Projects Agency, or Darpa, part of the Defense Department. Darpa got the idea of using CT scanners to perform virtual autopsies from Switzerland, where it started about 10 years ago.

Now the idea of virtual autopsies has begun to catch on with medical examiners in this country, who are eager to use it in murder cases but also to learn the cause of death in people from religious groups that forbid traditional autopsies. Scans can also help pathologists plan limited autopsies if a family finds a complete one too invasive.

John Getz, the program manager for the Armed Forces medical examiners, said mobile CT scanners could also be used to screen mass casualties during disasters like Hurricane Katrina, to help with identification and also to determine if any of the dead were the victims of crimes rather than accidents.

The Armed Forces CT scanner, specially designed to scan entire corpses one after another, is the envy of medical examiners and crime laboratories around the country, and several states have asked Captain Mallak and his colleagues for advice on setting up scanners.

Colonel Harcke said he hoped the technology would help to increase the autopsy rates at civilian hospitals, which now perform them only 5 percent to 10 percent of the time.

"We hope to return to a time where we were 50 years ago," he said, "when autopsies were an important part of the medical model, and we continued to learn after death."

This article has been revised to reflect the following correction:

Correction: May 27, 2009

A picture caption on Tuesday with the continuation of an article about CT scans performed on American armed service members killed since 2004 misidentified one of the countries where some of the service members were killed. It is Iraq, not Iran.

This article has been revised to reflect the following correction:

Correction: May 28, 2009

An article on Tuesday about the use of autopsies and CT scans on all troops killed in Iraq and Afghanistan misidentified the military branch of Col. Howard T. Harcke, a radiologist who reads CT scans at Dover Air Force Base. He is a member of the Army Reserve, not the Marine Corps.