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UT Southwestern plastic surgeon uses novel technique to reattach Gulf War vet's forearm

DALLAS – Oct. 27, 2011 – A plastic surgeon at UT Southwestern Medical Center recently used a novel technique to save the arm of a Gulf War veteran who was rushed to Parkland Memorial Hospital after a horrific accident.

On Aug. 27, U.S. Navy veteran Royce Reid, 49, of Gilmer caught his left forearm on a pipe in a conveyor. The machinery twisted and mangled his arm, and nearly tore it off. With it held together only by a skin bridge, Mr. Reid's military survival training kicked in. He managed to free himself and even directed several who witnessed the accident on how to apply a tourniquet. Then he walked to an ambulance that had been called, supporting his own dangling forearm.

Physicians at a nearby hospital in Longview determined that Mr. Reid required advanced care and expertise, so he was transferred by helicopter to Dallas. The call had already gone out to Dr. Bardia Amirlak, a hand surgery specialist and assistant professor of plastic surgery at UT Southwestern, who met Mr. Reid at Parkland's emergency room.

Dr. Amirlak recognized that he had a tough decision to make: whether to complete the amputation, knowing his patient would be able to return home soon and be fitted for a prosthetic arm, or attempt a marathon surgery with an unpredictable outcome and months of rehabilitation.

"Just cut it off, doc. Just cut it off," Mr. Reid said at first. Dr. Amirlak knew from his deep experience working with trauma patients that Mr. Reid's first reaction might not reflect his true feelings.

"He was in a lot of pain, he was in shock and he was stressed from bleeding," Dr. Amirlak said. "As I was going to make the decision to amputate, he looked at me with tears in his eyes and said, 'I have grandkids and I want to hold them with my own hands. Do what you can to save my arm.' It was worth giving him a shot."

Surgery would be especially difficult because so much time had passed since the injury occurred. A limb only remains viable for up to six hours after its blood supply is cut off; after that, it cannot be reattached to functionality. Yet six hours had nearly elapsed by the time Mr. Reid arrived in Dallas.

Dr. Amirlak quickly improvised to save the limb. He rigged an extracorporeal transfusion, a sort of "external bypass," to deliver fresh blood from the left femoral artery directly into the remnant part of the forearm and keep it "alive" while he worked to first reconnect the bones, then the blood vessels, tendons and nerves.

"I knew if I didn't do this particular technique, Mr. Reid would surely lose the arm," Dr. Amirlak
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said. His prior fellowship in the area of hand and microsurgery at the Christine M. Kleinert Institute in Louisville, Ky., gave him the confidence to try the rare technique. He had trained at the institute under Dr. Warren C. Breidenbach, who performed the first hand transplant in the U.S. in 1999.

Dr. Amirlak also is a team member of the new hand transplant program at UT Southwestern that launched in July.

As an academic medical center, UT Southwestern doctors see a higher rate of referral patients, including those whose medical problems go beyond the capacities of local community hospitals and require specialized services and care.

“This case exemplifies all the advances in technology and skill that we now have in our faculty at UT Southwestern, in concert with Parkland, to provide our patients with state-of-the-art care,” said Dr. Rod Rohrich, chairman of plastic surgery. “In the recent past, this war veteran may have lost his forearm. Thanks to our plastic surgery hand team, this patient will return to be a functional person in our society and workforce.”

“Dr. Amirlak did something that our entire department had not yet heard about,” said Dr. Sumeet Teotia, assistant professor of plastic surgery who arrived to provide secondary support. “All I can say is that I was there when Dr. Amirlak was doing this, and it was amazing. The forearm was completely shattered. He revascularized the entire limb.”

Plastic surgery resident Dr. Fadi Constantine and hand surgery fellow Dr. Toni Lin also assisted during the 18-hour surgery.

“It’s very gratifying to be able to work at a medical center that is one of only a few in the country to treat patients with severe issues like this,” said Dr. Amirlak, “and even then it would depend on the team they have on call and how they would manage to keep this limb alive.”

Mr. Reid was discharged after a 10-day hospital stay that included grafting skin from his thigh to his forearm. Wearing a dynamic outrigger splint that resembles scaffolding to support his healing forearm, Mr. Reid now receives occupational therapy and follow-up care at UT Southwestern, where physicians have modified a rehab protocol for his recovery. He still faces several surgeries to repair the skin, but doctors say his prognosis is good for a full recovery.

Mr. Reid says he wants to work hard in therapy to show how much he appreciates his surgeons’ heroic effort to save his arm.

“We call them the miracle doctors. They did an amazing job,” he said.

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