Transplant Success After Marathon Surgery

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Emily Fennelll, 26, of Yuba City, Calif., who lost her right hand in an auto accident in 2006, talks about her experience as the recipient of a hand transplant, at a news conference at UCLA Medical Center in Los Angeles Tuesday, April 19, 2011. (AP Photo/Reed Saxon)

LOS ANGELES (AP) — For the first time in five years, Emily Fennell has two hands.

The 26-year-old single mother, who lost her right hand in a car accident, showed off her newly donated hand Tuesday while flanked by a team of transplant doctors.

Wearing a protective cast with her fingers poking out, Fennell admitted she's still getting used to it. "I do feel like it's mine. Slowly but surely, every day it becomes more and more mine," she said.

Fennell received the donor limb in a marathon surgery last month at the Ronald Reagan UCLA Medical Center in Los Angeles. She had been living with a prosthetic limb, but wanted a hand transplant to better care for her daughter.

During the 14½-hour operation on March 5, a team of nearly 20 surgeons, nurses and support staff grafted a hand from a deceased donor and intricately connected bones, blood vessels, nerves and tendons.

The transplant was the 13th such case in the United States and the first for the hospital, which launched its hand transplant program last year.

With the surgery successful, Fennell begins the long journey of learning to use her transplanted hand.

"Emily hasn't used her hand" in a long time, said chief surgeon Dr. Kodi Azari. "The muscles have not worked. They've become weak."

This March 5, 2011 image provided by UCLA Health System shows Dr. Kodi Azari, left, and members of his surgical team performing a hand transplant at Ronald Reagan UCLA Medical Center in Los Angeles. The transplant was performed on a 26-year-old mother from Northern California who lost her right hand in a traffic accident nearly five years ago. UCLA is only the fourth center in the nation to offer this procedure and the 13th hand transplant surgery performed in the United States (AP Photo/UCLA Health System, Ann Johansson)

At Fennell's first public appearance Tuesday, she rested her right hand over the left one. When it came time to thank her doctors, she managed to clap her hands.

Fennell's right hand was crushed in 2006 in a rollover accident in which her hand went through the open sunroof of the car in which she was riding.

After the amputation, Fennell learned to use her left hand to do daily chores such as driving, tying her shoelaces and even typing 45 words a minute in her job as an office assistant. Though she wore a prosthesis, she found it bulky and not useful.

Fennell was able to move her new fingers soon after the surgery, but does not yet have feeling in her hand. Doctors said it could take up to a year for the nerves to regenerate before she can feel anything.

For the past month, Fennell has been undergoing extensive rehabilitation in Los Angeles that includes eight hours of occupational therapy a day. She practices simple tasks such as grasping and gripping objects in an effort to improve her dexterity and gain strength.

Fennell hopes to return to her hometown of Yuba City near Sacramento next month to be with her 6-year-old daughter and continue rehab at home.

During a recent visit home, her daughter saw the new hand for the first time and exclaimed: "Mommy, it's cool."

Though Fennell's donated hand will never be as strong as the one she lost, doctors said she should regain about 60 percent of the function of a normal hand with continued therapy.

Plastic surgeon Dr. Bohdan Pomahac, far right, refers to a graphic during a news conference at Brigham and Women's Hospital in Boston Monday, March 21, 2011 regarding a face transplant he and his team performed. Recipient Dallas Wiens, 25, a Fort Worth, Texas construction worker badly disfigured in a

power line accident two years ago has received the nation's first full face transplant last week at Brigham and Women's. (AP Photo/Elise Amendola)

Fennell hopes that means she could tie her hair in a ponytail again, catch a ball and type even faster. Like other transplant recipients, Fennell has to take drugs for the rest of her life to prevent rejection. UCLA is testing whether a less-toxic combination of medications is effective.

Hand transplantation has come a long way since the first one was carried out in Ecuador in 1964 before the development of modern immunosuppressive therapy. The transplant failed after two weeks and the patient had to have the new hand amputated.

More than three decades later, French doctors in 1998 performed a hand transplant that lasted two years. The recipient did not take medications as ordered and his body rejected the limb.

Since then, more than 40 hand transplants have been performed around the world including several double hand transplants. The recipient of the first U.S. hand transplant in 1999 has lived with a donor hand for a little over a decade.

"It's clear that it's achievable," said Dr. Warren Breidenbach, who performed the historic surgery.

The UCLA operation cost about $800,000, but since it was experimental, the patient did not have to pay. Little has been revealed about the donor except that the hand matched the patient's in terms of blood type, size and color.

A week after the UCLA operation, doctors at Emory University Hospital in Atlanta performed the 14th hand transplant in the country.

The recipient was 21-year-old Linda Lu, who had her left hand amputated as a baby due to complications from a rare disease.

Lu's lead surgeon, Dr. Linda Cendales, said many who undergo a hand transplant tend to feel more sensation than if they wore a prosthetic, and they are able to open doors, tie their shoes or turn the pages of a newspaper.

"They will never have a normal hand," Cendales said. "But they do recover enough sensation to differentiate between temperatures, and rough and smooth surfaces."

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