

Rare hand transplant surgery successfully performed at Emory University Hospital

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Emory's first hand transplant patient, Linda Lu, a 21-year-old college student from Orlando and her lead surgeon, Dr. Linda Cendales, assistant professor of surgery at Emory University School of Medicine speak to reporters at a news conference on March 28, 2011. Credit: Emory University by Jack Kears

Transplant and reconstructive surgeons from Emory University Hospital announced today at a news conference that they have successfully performed a rare complete hand transplant on 21-year-old Linda Lu, a college student from Orlando, Fla. This is a first for the Atlanta Hospital.

The 19-hour surgery took place on Saturday, March 12 and involved multiple teams of surgeons, anesthesiologists, nurses, and [operating](#)

[room](#) support staff. Two teams – one dedicated to the patient – and the other to the donor arm – successfully completed the surgery at approximately midnight.

The intricate surgery involved the connection of numerous structures including bones, tendons, nerves, vessels and finally the skin. The patient was placed in a protective splint for 48 hours and is now wearing a high-tech brace that supports the limb while she begins the long process to gain function of her new hand.

Lu is now beginning rehabilitation at Emory and will spend the next three months in Atlanta. At the news conference she said she understands that it will never be a normal hand, but not having a left hand since she was an infant, "I expect it to help in simple everyday activities." She went onto say "right now I am filled with emotions and I don't think that there is really anything that can describe how I fell, other than just happiness, hopefulness and of course thankfulness."

"This is an exciting time for our patient, her family, and the reconstructive community in general. Ms. Lu is doing very well. She is referring to her transplant as 'my hand,'" says Linda Cendales, MD, Assistant Professor of Surgery at Emory University School of Medicine. "She is feeling well and has already begun intensive therapy here in Atlanta. She is excited about the possibilities that await her as she continues her progress."

The Emory University-Veterans Affairs Vascularized Composite Allograft (VCA) Program was created in late 2007 with the recruitment of Dr. Cendales who has worked to develop one of the nation's premier centers for reconstructive transplantation. This case is among the small number of hand transplants that have been successfully performed in the U.S. and puts Emory among only four centers to have successfully performed the procedure. The first hand transplant in the U.S. took

place in Louisville at the center where Dr. Cendales trained, and where in 1999, she was on the team that performed the nation's first hand transplant.

The program at Emory and the Atlanta Veterans Affairs Medical Center was spurred by a grant from the Department of Defense administered through the Navy Bureau of Medicine and Surgery's Medical Development Program with the strong backing of U.S. Senator Saxby Chambliss (R-Ga.).

"This represents a great success for Emory and for medicine," says Sen. Chambliss. "The procedure they have demonstrated will benefit many people including members of our military who have suffered from injuries in Iraq, Afghanistan and elsewhere. I am proud and grateful for the dedicated leadership, physicians, and researchers at Emory who made this extraordinary breakthrough possible."

The first hand transplant in the world was performed in 1964 in Ecuador, before the development of modern immunosuppressive medications. The recipient, a sailor, had to have the transplanted hand amputated two weeks after surgery because of tissue rejection. The next hand transplant was performed in France in 1998 and endured more than two years before the recipient stopped taking immunosuppressive medication and asked to have the hand removed.

The Louisville team's first hand transplant is currently the longest surviving hand transplant in the world. Dr. Cendales was also involved in the team's second [hand transplant](#) in 2001.

Surgeons have already tackled many of hand transplantation's technical challenges, Dr. Cendales says. Issues involved in reattaching a severed limb, such as dealing with crushed bone or mangled connective tissue can make "replantation" more technically demanding than an organ

transplant, she says. But vascularized composite transplantation continues to advance by leaps and bounds, with recent reports from around the world of transplants including faces, trachea, and larynx.

Provided by Emory University

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