Nine Surgeons, Multiple Specialists Transplant Nearly 90 Percent of Accident Victim's Facial Tissue

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In a 24.5-hour surgery in late September, nine Cleveland Clinic surgeons and multiple specialists performed the hospital's second face transplant on a middle-aged man who suffered severe facial trauma and other complications from a car accident.

The surgery included transplantation of about two-thirds of the scalp, the forehead, upper and lower eyelids, eye sockets, nose, upper cheeks, upper jaw, upper teeth, facial nerves, salivary glands, facial muscles, and skin, effectively replacing about 90 percent of the patient's face.

"I am grateful beyond words to the donor and his family for their amazing gift," said the patient, who wishes to remain anonymous. "I thank the Lord for the strength he's given all of us to carry us through this, because we couldn't do this on our own. I would like to thank the Cleveland Clinic – all the surgeons and staff who helped me, so many talented hands helping me in so many ways. I learned through this process that it's so important that we raise awareness about organ and tissue donation. Your driver's license donor card is not enough; please talk to your loved ones about your further donation wishes. God bless us all."

Co-directed by Frank Papay, MD, Chairman of the Dermatology and Plastic Surgery Institute, and Maria Siemionow, MD, PhD, the surgical team included Steven Bernard, MD; Gaby Doumit, MD; Risal Djohan, MD; Brian Gastman, MD; Mark Hendrickson, MD; Graham Schwarz, MD; and James Zins, MD Specialists from anesthesia, bioethics, dentistry, immunology, ophthalmology, pharmacy, psychiatry and transplant were also involved.

"This was a case of cooperative surgical innovation," said Dr. Papay. "This is a team sport and the patient is the most important part of the team; there is nothing more rewarding than making a profound difference in a patient's life."

The patient became a candidate for a face transplant after multiple attempts at facial reconstruction failed to correct his facial disfigurement or to improve his quality of life, as he still had difficulty breathing and speaking. A face transplant, by restoring eyelids, also offered a better chance to save the limited eyesight in his one eye that remained after the trauma.

Since the surgery, the patient is recovering well. He is now breathing without a tracheostomy and will begin eating orally shortly. His limited eyesight has been preserved, making this the first face transplant to successfully save a patient's vision.

Doctors continue to monitor him closely for signs of tissue rejection and are adjusting his immune suppression accordingly. As with any organ transplant, the patient will be on lifelong immunosuppressive drugs. However, unlike most patients, his immune system was already medically suppressed, due to an underlying autoimmune condition.

To protect the privacy of those involved, no further information will be released about the patient, the donor or their families.

In December 2008, Cleveland Clinic became the first U.S. hospital to perform a face transplant. At the time, it was considered the largest and most complex face transplant in the world, integrating different functional components such as nose and lower eyelids, as well as different tissue types including, skin, muscles, bony structures, arteries, veins and nerves.

"Our face plays a central role in our identity - how we see ourselves and how others see us. Those who suffer facial trauma or disfigurement have physiological, psychological, and social difficulties," said Dr. Siemionow, who, as the former director of Cleveland Clinic's Department of Plastic Surgery Research, prepared Cleveland Clinic's face transplant protocol in 2004. She is now a professor of orthopedic surgery at the University of Illinois at Chicago College of Medicine and acted as a consultant and advisor on the recent surgery. "A face transplant is not just an aesthetic surgery. It is a functional surgery, which will ultimately allow the patient to eat, speak, smell, smile, kiss, and feel welcome into society again."

Cleveland Clinic is one of three U.S. institutions that has conducted face transplants. Fewer than three dozen face transplants have been performed worldwide. This most recent face transplant was supported by the U.S. Department of Defense's Armed Forces Institute of Regenerative Medicine I (AFIRM I) grant program. As an integral part of the AFIRM, the Rutgers-Cleveland Clinic Consortium (RCCC) is committed to delivering advances in regenerative medicine that will improve the treatment of U.S. service members wounded on the battlefield. Through the RCCC, Dr. Siemionow has served as the primary investigator of this clinical trial.

"I was involved in advocating for the face transplants as a treatment option from the very beginning," said Dr. Joachim Kohn, Director of the RCCC of the AFIRM I and Board of Governors Professor at Rutgers University. **'Without the support of the DoD and the AFIRM, the United States as a nation would have fallen way behind the global effort to restore form and function to patients with severe facial injuries. I am therefore extremely pleased that Cleveland Clinic was able to perform this face transplant. We, at Rutgers University, have been administering and managing the contractual arrangement of this project and are fully supportive of this effort. Assuming a suitable patient and donor can be identified, we are able to support one additional face transplant under the current AFIRM I program."**

According to the U.S. Department of Defense, the U.S. Army Medical Research and Materiel Command supports efforts such as the Armed Forces Institute of Regenerative Medicine, which bring together leading scientists, clinicians, and industry partners to develop innovative medical solutions to restore Warfighters to form and function after traumatic injuries. Since 2009, the DoD has funded almost $30 million in hand and face transplant research, focusing on innovations offering immediate benefit to troops injured in combat and to civilians suffering traumatic injuries. Face transplants, such as the procedure performed in September at the Cleveland Clinic, offer the hope of improved function and the promise of a better quality of life for our injured service members and civilians.

None of this would have been possible without the involvement of Lifebanc, Northeast Ohio's nonprofit organ and tissue recovery organization.

"In keeping with Lifebanc's mission of helping to improve and save the lives of others, we worked closely with the Cleveland Clinic on this exceptional case to ensure that the highest medical and ethical standards were met," said Lifebanc CEO Gordon Bowen. "Since this was such a unique case, we collaborated with the Cleveland Clinic to develop a specific consent procedure, above and beyond the normal organ and tissue donation authorization process and limited to just this one situation. No one who is a registered organ, eye and tissue donor is affected by this specialized and limited consent process."

Editor's Note:

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About Cleveland Clinic

Cleveland Clinic is a nonprofit multispecialty academic medical center that integrates clinical and hospital care with research and education. Located in Cleveland, Ohio, it was founded in 1921 by four renowned physicians with a vision of providing outstanding patient care based upon the principles of cooperation, compassion and innovation. Cleveland Clinic has pioneered many medical breakthroughs, including coronary artery bypass surgery and the first face transplant in the United States. U.S.News & World Report consistently names Cleveland Clinic as one of the nation's best hospitals in its annual "America's Best Hospitals" survey. More than 3,000 full-time salaried physicians and researchers and 11,000 nurses represent 120 medical specialties and subspecialties. The Cleveland Clinic health system includes a main campus near downtown Cleveland, eight community hospitals, more than 75 Northern Ohio outpatient locations, including 16 full-service Family Health Centers, Cleveland Clinic Florida, the Lou Ruvo Center for Brain Health in Las Vegas, Cleveland Clinic Canada, and, scheduled to begin seeing patients in 2015, Cleveland Clinic Abu Dhabi. In 2012, there were 5.1 million outpatient visits throughout the Cleveland Clinic health system and 157,000 hospital admissions. Patients came for treatment from every state and from more than 130 countries. Visit us at www.clevelandclinic.org. Follow us at www.twitter.com/ClevelandClinic.

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