

PROFESSION



Facial transplantation is not just about restoring a relatively normal appearance, says Maria Siemionov, MD, PhD, a plastic surgeon at Cleveland Clinic who performed the first U.S. facial transplant in 2008. "To be able to speak, to be able to breathe, to be able to swallow ... these are things that people take for granted." [Photo by Aaron Josefczyk / Reuters / Corbis]

Face transplants starting to gain acceptance

Ethical -- and often visceral -- objections to the surgery are fading in light of dramatic early successes that restored patient functioning.

By **KEVIN B. O'REILLY**, *amednews* staff. *Posted Sept. 19, 2011.*

Facial transplantation once spawned science fiction-fed visions of cosmetic surgery run amok but is becoming more common as many fears about the operation prove unfounded.

There have been at least 17 facial transplants worldwide since the first was performed in 2005 for Frenchwoman Isabelle Dinoire, experts say. Three transplants have been done this year at Brigham and Women's Hospital in Boston, the most recent one in May for Charla Nash, a Connecticut woman mauled by a chimpanzee in 2009. The hospital's efforts are being supported by a \$3.4 million Defense Dept. grant, with hopes that wounded veterans will benefit.

In the surgery's earliest days, critics argued that the face -- so central to how people perceive themselves and others -- was not fit for transplantation. Donor families might be disgusted to see the face of their loved one on someone else's body. Critics also worried that a highly visible failure could horrify the public and discourage organ donation.

More commonly, skeptics of the surgery argued that it was wrong to treat nonfatal medical problems with an intervention that would subject patients to the increased risks of infection, cancer and renal failure that come with the immunosuppressive regimen required to avoid rejection.

Facial transplantation remains an experimental surgery of last resort for patients with severely disfigured faces who often have lost critical functions such as the ability to speak, smell, eat or drink normally. But experts say that where facial transplants once drew categorical objections, they are now the focus of ethical scrutiny about concerns that can be addressed, such as ensuring robust informed-consent processes.

As with other controversial innovations, such as in vitro fertilization, time and experience are the best allies in assuaging ethical concerns.



Connie Culp spoke at a forum at the Heinz History Center in Pittsburgh in January about how the transplant changed her life. "The importance of a face transplant was getting my mouth back in order and letting me smile again," she told the *Pittsburgh Post-Gazette* in October 2010.

[Photo by Pittsburgh Post-Gazette / ZUMA Press / Corbis]

"The more people hear about it, the more comfortable they feel," said Maria Siemionow, MD, PhD, a plastic surgeon at Cleveland Clinic who performed the first U.S. facial transplant in 2008. "People are enthusiastic that there are many patients who can benefit from this. On the other hand, everybody thinks that there are certain measures ... of how you monitor the face transplant patients to get the best possible outcome."

Dr. Siemionow's only facial transplant recipient so far, Connie Culp, lost an eye and her entire upper jaw after she was shot in the face. Eighty percent of her face -- all but her forehead, upper eyelids, lower lip and chin -- was replaced with the tissue from a deceased donor's face. She has regained the ability to speak, smell, taste, eat and drink.

"She's doing great, and it's been a great outcome almost three years after transplant," said Dr. Siemionow, director of plastic surgery research and head of microsurgery training at Cleveland Clinic. "We have had two episodes of rejection, and many face transplants have episodes of rejection. Some other patients have had three or four. But these episodes of rejection can be treated by adjusting immunosuppressive therapies or by giving the patients more steroids."

One early critic of facial transplantation who has changed his mind is Arthur L. Caplan, PhD, director of the University of Pennsylvania's Center for Bioethics.

"I was thinking about it like it was the ultimate plastic surgery," Caplan said. "But I met some of these people with severe facial injuries and it completely changed my view. These people do have functional impairments. ... This is not like taking Viagra or getting a mole removed -- that's the wrong framework. This is the desperate last resort, and these people are very eager to try it because of what they get restoratively."

The university is now exploring hand transplantation and has recruited a physician to start a face transplant program there as well.

Another criticism that dissipated came from a misconception about the surgery, said Eric Kodish, MD, who chairs the Dept. of Bioethics at Cleveland Clinic.

"The science fiction kinds of ethical concerns can be put to rest," said Dr. Kodish, a pediatric hematologist and oncologist. "There were people who thought the donor's face would completely replace the recipient's face. We know now from clinical experience that the patient's face is a hybrid of the two -- the recipient and the donor. The preexisting bony and muscular structure is more influential on the physiognomy, the way the face appears."

There have been setbacks. Two patients died after transplantation. A 30-year-old Frenchman disfigured from burn injuries underwent a facial transplantation and two hand transplants in April 2009, but died of cardiac arrest during a follow-up operation. And a Chinese man who received a partial facial transplantation in 2006 died two years later after discontinuing immunosuppressants in favor of herbal medicines.

"A second life"

But is it wrong for patients to be subjected to such risks for a surgery that will not save their lives?

A consensus appears to be emerging, as seen in 2006 guidelines from the American Society for Reconstructive Microsurgery and the American Society of Plastic Surgeons. The guidelines say the choice should be left to patients, so long as they cannot be helped through conventional means, are properly informed of the risks, and undergo extensive psychological evaluation for depression and decision-making capacity.

Critics of facial transplantation failed to appreciate how profoundly these facial injuries affect patients' quality of life, Dr. Siemionow said.

"Let's look at the situation of someone who has lost their face," she said. "They are secluded. They don't go out. They are totally damaged. If you do not have a face, you do not have a life.

"If we as an institution think the patient can benefit and is ready for the challenge that's involved, then we will work to give them a chance to have a second life."

ADDITIONAL INFORMATION:

WEBLINK

Information about face transplant surgery at Brigham and Women's Hospital (www.brighamandwomens.org/departments_and_services/surgery/services/plasticsurg/reconstructive/facetransplantsurgery)

Information about face transplant surgery at Cleveland Clinic (www.clevelandclinic.org/lp/face_transplant)

"Overview of guidelines for establishing a face transplant program: a work in progress," *American Journal of Transplantation*, May 2010 (www.ncbi.nlm.nih.gov/pubmed/20353470)

"An ongoing issue concerning facial transplantation," *American Journal of Transplantation*, May 2010 (www.ncbi.nlm.nih.gov/pubmed/20420627)



Connie Culp, shown before her injury, was shot in the face by her husband in a failed murder-suicide in 2004. The shotgun blast destroyed Culp's nose, cheeks, the roof of her mouth and an eye. She underwent 30 operations before the face transplant in 2008.

[Photo by Cleveland Clinic / Reuters / Corbis]

"Outcomes 18 months after the first human partial face transplantation," *The New England Journal of Medicine*, Dec. 13, 2007 (www.ncbi.nlm.nih.gov/pubmed/18077810)

Guiding principles on facial transplantation, joint statement from the American Society of Reconstructive Microsurgery and the American Society of Plastic Surgeons, 2006 (www.microsurg.org/ftguidelines.pdf)

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