

A bold move to save a man's hand: Tucking it into his tummy

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Plastic surgeon Anthony Echo marks areas to prepare for surgery to separate Frank Reyes' hand from his abdomen at Houston Methodist Hospital in Houston on Thursday, Aug. 27, 2015. Reyes, whose hand was badly burned, spent three weeks with his left hand surgically tucked under a pocket of tissue in his belly to give it time to heal and form a new blood supply. (AP Photo/Pat Sullivan)

Casey Reyes struggled for a way to explain the "sci-fi" surgery doctors were proposing to save her 87-year-old grandfather's badly burned hand.

"They're gonna put your [hand](#) inside your stomach, kind of like a hoodie," she told him.

Frank Reyes agreed to the strange operation at Houston Methodist Hospital, and spent three weeks with his left hand surgically tucked under a pocket of tissue in his belly to give it time to heal and form a new blood supply.

On Thursday, doctors cut his hand free of its temporary home and shaped some of the abdominal tissue and skin to cover it. Reyes hopes for near-full use of the hand he almost lost after a freak accident earlier this summer while he was changing a tire.

"It's a funny feeling," he said in an interview while his hand was still attached to his belly. "Anything to get me well."

Surgeries like this—temporarily attaching one body part to another, or tucking it under skin—are by no means new, but they are uncommon. They are used on the battlefield, in trauma situations, and increasingly in research as a way to incubate lab-grown body parts from scaffold-like materials.

Dr. Anthony Echo, [plastic surgeon](#) at Houston Methodist, thought of it when he saw Reyes, a retired cattle ranch worker and school bus driver who lives in Missouri City, Texas.

Reyes was home alone one day in late June, changing a tire on a trailer, when the jack slipped, pinning his hand against a fender. It was more than 100 degrees that afternoon, and it took half an hour for help to arrive.



Plastic surgeon Anthony Echo, right, examines Frank Reyes' hand before surgery at Houston Methodist Hospital in Houston on Thursday, Aug. 27, 2015. Reyes, whose hand was badly burned, spent three weeks with his left hand surgically tucked under a pocket of tissue in his belly to give it time to heal and form a new blood supply. (AP Photo/Pat Sullivan)

The hot metal was like an iron and "just cooked his hand," burning through a thick glove and through skin, tendons and tissue, Echo said. Doctors initially tried a conservative approach, cleaning and bandaging the wound, but infection set in and most of his index finger had to be amputated.

Still, the hand grew worse.

"His skin was almost completely dead," his granddaughter said doctors

told her. "They said it looked like mummy skin."

Reyes was sent to Echo, who realized a skin graft or flap of tissue from another part of Reyes' body would not work. The damage was down to the bone, and without a good blood supply, a graft or flap would die, he explained.

Echo decided to try tucking the hand inside Reyes' belly.

"The abdominal skin actually sticks to the hand" and new blood vessels form to connect them, he said. Without this, "likely he would have lost all of his fingers," Echo said.

When he explained it to the family, "I thought it was more or less something out of a sci-fi movie. It sounded crazy," Casey Reyes said, and when she explained it to her grandfather, who has trouble hearing, "he looked at me kind of funny," but agreed.



Plastic surgeon Anthony Echo talks with Frank Reyes before surgery at Houston Methodist Hospital in Houston on Thursday, Aug. 27, 2015. Reyes, whose hand was badly burned, spent three weeks with his left hand surgically tucked under a pocket of tissue in his belly to give it time to heal and form a new blood supply. (AP Photo/Pat Sullivan)

Dr. Vijay Gorantla, a plastic surgeon and hand transplant expert at the University of Pittsburgh School of Medicine, said the operation is not novel, but many doctors today don't realize it is an option in situations like this.

"The credit has to go to the surgeons for having chosen this" to help the patient, he said. "It gives you phenomenal results, especially in this type of injury, with minimal complications."

"They're now using this technique to prefabricate a particular body part," he noted. A group in China put cartilage under skin of the leg or the abdominal wall to create tissue and a [blood supply](#) for an ear.

Surgeons sometimes do it if the pulp or pad of a finger has been lost in an accident.



Plastic surgeon Anthony Echo, left, and resident Amy Xue examine the hand of Frank Reyes after surgery at Houston Methodist Hospital in Houston on Thursday, Aug. 27, 2015. Reyes, whose hand was badly burned, spent three weeks with his left hand surgically tucked under a pocket of tissue in his belly to give it time to heal and form a new blood supply. (AP Photo/Pat Sullivan)

"You can take that tip of the finger and bury it in the abdominal wall," then remove it with some tissue to fix the finger, he said.

As for Reyes, "as soon as I'm well enough to drive I want to take a little

trip," he said.

"The main thing I want to do is raise cattle, ride horses," he said. "I'm an outdoors person" who doesn't like being cooped up.

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