

A LIVER OF LOVE

To Save His Dying Uncle, A Man Agrees To A Risky, Living-Donor Transplant At Yale-New Haven Hospital; It Was The First Of Its Kind In Connecticut

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Dr. Sukru Emre slices an 8-inch incision through Corey Gray's six-pack abs, splaying the young man's belly like a butterflied leg of lamb. Tightening heavy metal clamps that anchor flesh and muscle to either side of Gray's ribs, Emre reveals the healthy liver — the main event of the day's surgery.

It is a risky procedure — and one with no medical benefit to Corey Gray. The goal is to use half of Corey Gray's healthy liver to save the life of his dying uncle. Since the procedure was tried on adults a decade ago, at least two living liver donors have died.

But a shortage of livers from deceased donors has forced doctors to take a hard look at the Hippocratic oath and take a little poetic license when it comes to the basic underpinning principle of medical ethics: "Primum non nocere" — Latin for "First, do no harm."

As Emre painstakingly inches through the center of Corey Gray's liver using electric cautery and ultrasound blades to dissect tissue and vessels while keeping blood loss to a minimum, he can only do his best.

"If we were to have enough donors, we would be crazy to do this operation," Emre said in English, heavily laced with the accent of his native Turkey.

But in a nation with more than 17,000 people on a waiting list for a liver transplant — almost 2,000 a year die before a donated liver becomes available — living-donor surgery sometimes offers the only hope.

Emre brought the ability to perform living-donor liver transplants to Connecticut when Yale-New Haven Hospital recruited him from Mount Sinai Medical Center in New York last summer. At Mount Sinai, the 55-year-old surgeon became a leader in the field, performing 650 liver transplants, including 250 from living donors.

But at his new home in downtown New Haven last Tuesday morning, Emre wakes up with first-day jitters. He has done this operation hundreds of times. He has rehearsed this one in his head a thousand times or more.

But he is about to perform the first transplant from a living donor in Connecticut and he does not want anything to go wrong — not for his patients and not for Yale-New Haven Hospital, whose reputation as a transplant center was now riding on the tips of his gloved fingers.

Emre is recovering from the flu and still dogged by a stubborn cough when he starts to isolate Corey Gray's liver in Operating Room 11 shortly before 10 a.m.

After almost three hours of tedious work — cut a bit of tissue, staunch the bleeding, gently probe the purplish tissue for the next safe place to cut — Emre removes a large lobe of Corey Gray's liver and lifts it with two hands. A nurse fills a blue plastic bowl with ice cubes and covers the ice with a sheath that looks remarkably like a plastic hotel shower cap. Emre gently places the precious tissue in the bowl.

Bathed in a preservative solution, the liver segment rests in the bowl while a team of assistants starts stitching Corey Gray's abdomen back together. Emre walks calmly through a wooden door to the adjoining operating room, Room 10, where Daniel Gray's abdomen is open wide.

A Death Sentence

Daniel Gray was 59 and awaiting the birth of a new grandchild when he learned of his likely death sentence — a tumor the size of a tangerine growing in his liver. The tumor was so big that it virtually knocked Gray off the waiting list for a conventional transplant. An unassuming guy who looks remarkably like the 1970s TV character Archie Bunker, with none of Bunker's bite, Daniel Gray would be the last person to ask anyone to sacrifice his life to save his own.

Before all of this started last summer, Gray barely knew his 29-year-old nephew Corey, who — as the operation got underway — was asleep on the operating table next door, his once tan and toned body facing a huge recovery, his young wife, Maite, at home in Florida pinned to the phone while she cared for the couple's young daughters, 8 and 1.

But what choice did Daniel Gray have?

Livers from deceased donors are allocated to patients with failing livers or cancerous tumors that are smaller than Daniel Gray's. Gray started with two strikes — his tumor was huge and the rest of his liver still worked. With that combination of factors, odds were good he would die on the waiting list.

The operation has evolved over the past two decades, since doctors at the University of Chicago successfully first split a liver from a deceased donor in half and shared it with two critically ill children. The discovery that the liver could regenerate completely within about eight weeks helped address two problems: the shortage of donated livers and the fact that children often are too small to accept a full adult liver.

With the success of the split-liver operation, doctors decided to try removing a portion of liver from a living donor, usually a parent or grandparent, and transplanting it into a dying child. The sacrifice of a parent's organ to save a child did not present quite the ethical problems that adult-to-adult living donor transplants would.

By the 1990s, though, the donor shortage made trying an adult-to-adult living donor transplant all but inevitable.

The number of live-donor liver transplants grew rapidly until 2001, when more than 500 operations were performed in the United States. Then, in January 2002, Mike Hurewitz, a 57-

year-old newspaper reporter, died at Mount Sinai Hospital in New York after donating part of his liver to save his 54-year-old brother, Adam.

New York state health officials blamed the death on shoddy follow-up care at the hospital, not on the surgery itself. Emre was working at Mount Sinai at the time, but he said he was not involved in the Hurewitz case. The death cast a pall, though, over the promise of live-donor transplants for adults and the number of procedures performed in this country has never rebounded.

Almost 4,700 people in the United States received liver transplants from deceased donors last year — including 19 in Connecticut. At the same time, only 200 liver transplants from living donors were performed nationwide in 2007.

Although recipients of partial livers seem to do well, experts say the practice of medically robbing Peter to pay Paul should remain a last resort because it can be dangerous to the donor.

"This is arguably the first surgical procedure where the person giving the liver doesn't get a direct medical benefit," said Dr. John R. Lake, director of the liver transplant program at the University of Minnesota Medical Center. About 3,450 live-donor liver transplants have been performed in the United States in the past decade.

The adult-to-adult operation is so new that nobody is certain if there are long-term risks for the donor. Both the donor and the recipient appear to wind up with full-sized, fully functioning livers within two months of the transplant. And donors examined 10 years after the surgery seem to recover full physical performance and go on to live full lives, Lake said.

"We'll have to see over 20 or 30 years whether this holds up," Lake said.

Cocky, Caring

Gray's 41-year-old son, Danny, was the first potential donor tested. But the anatomy of the younger Gray's liver made him ineligible.

Worried, Gray called his brother, Bill, in West Palm Beach, Fla., to talk it over. Growing up in New York City the Gray brothers were close. But after finishing up at All Hallows High School in the Bronx, they went their separate ways — Bill settling in Florida and Daniel enrolling in night school at Fordham University.

Daniel married young, became a successful trader in commodities futures on Wall Street and had two children, first Danny and then Kelly, now 33. When his wife, Diane, hit the jackpot on a slot machine in Atlantic City, the couple bought a vacation home in Springfield, Vt.

The family prospered in New York until Daniel was in his late 30s and became disabled by hemochromatosis, a disorder that occurs when too much iron builds up in the liver. The disease, often genetic, can lead to diabetes, heart problems, arthritis, cirrhosis of the liver, liver cancer and other complications.

With Daniel unable to work, the Grays settled in Vermont, where Diane developed a business building, renovating and managing rental properties. They saw the Florida Grays at weddings, funerals and christenings.

Corey Gray had last seen his Uncle Danny more than a year ago, when Corey's sister got married in Florida. At the time, Corey was busy building Credit Assistance Network, a company he runs out of his home with his wife and younger brother that helps clients across the country recover from identity theft and repair spotty credit histories.

Later, when Daniel got sick, Bill Gray mentioned his brother's predicament to Corey.

Corey offered to step up.

"I read about it. It's a little scary," Corey Gray explained. "But there's risks in everything you do."

Daniel himself called Corey. He wanted to hear it straight from his nephew.

"I told him this is a big thing," Daniel Gray said.

Corey said he wouldn't have it any other way.

Bill Gray said that's typical of his middle son.

"I couldn't talk him out of him if I wanted to," Bill Gray said. "He's earned his ticket to heaven."

After testing at Yale confirmed that Corey was a good candidate, he and his family spent a week with Daniel and Diane Gray in Vermont. Uncle and nephew discovered that even after the surgery, they would share more than a liver.

"We became best friends," Daniel Gray said of Corey. "He's just like me. He's strong-willed, kind, courageous, caring..." Gray said.

"Cocky," Corey added.

They laughed.

New Lease

With the lobe of Corey's liver in its ice and preservative bath, Dr. Antonios Arvelakis, a transplant surgeon who followed Emre to New Haven from Mount Sinai, trims a little fat and straightens the ends of two blood vessels and a duct that will be used to plug the organ into Daniel Gray.

Next door, Emre makes the final snip that frees Daniel Gray's diseased liver and tosses it unceremoniously into another blue bowl. It resembles a large pot roast and lands with a splat.

It is 2:14 p.m. and scrub technologist Christine Nix wonders out loud what time she'll get home tonight. She's been standing by the gurney holding Daniel Gray since early in the morning and everyone's best guess is that it will be 8 p.m. before she closes up the room and shuts off the lights.

Emre starts to sew. He figures he needs 45 minutes to an hour to attach the hepatic vein and artery that will deliver Daniel Gray's blood to the liver that a short while ago belonged only to Corey. Next, he'll attach the bile duct. Although everything has gone flawlessly so far, Emre wants to see the yellowish bile juice running through the duct before he declares the operation a success.

The liver is the largest gland in the body. It is also among the most important, making bile to digest fats and keeping the blood clean by fighting infections and ridding the body of poisons. Perhaps a measure of its importance is that the liver is the only organ in the body that can regenerate itself.

By about 6 p.m., 11 hours after the procedure began, Corey Gray's liver tissue is at work inside his uncle.

Diane Gray finds her husband in his room on the 6th floor of Yale-New Haven's West Pavilion — the surgical intensive care unit. He is still heavily sedated. But in a room across the unit, Corey is waking up. His belly is sore, but he feels much better than he thought he would.

Two days later, still a little dizzy from pain medication, Corey Gray puts on gray pajamas and holds Emre's arm for support as he walks down the hall to the room where his uncle is reclining in a chair.

Corey tells Diane that he has no regrets. He says he knew from the beginning that everything would be fine, and it is. Diane still worries about the risk of infection for Corey and the possibility that Daniel's body will reject the new tissue, or worse yet, that the cancer will come back, though so far everything has gone as well as anyone could have hoped.

In Daniel's room, Corey lifts his pajama top to reveal the small stitched wound that belies the gaping hole Emre cut two days earlier.

Daniel and Diane are at a loss for how they might thank their nephew. Now, Daniel said, he considers the young man a son.

"I love this man," Daniel Gray said, reaching out to squeeze Corey's shoulder and choking up just the slightest bit.

"He saved my life."