

2009

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Recommended Citation

Chang, S. (2009). A Matter of Life and Death: A Medical Student's Perspective on Organ Procurement. *Quill & Scope*, 2 (1). Retrieved from

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A Matter of Life and Death: A Medical Student's Perspective on Organ Procurement

Sue Chang

One Thursday evening, I was settling down to dinner and a quiet evening of studying when I received the call. It was a call I'd signed up and even hoped for, but I was still surprised. "Hi, Sue. We have an organ procurement in an hour. Would you like to join us?"

During my surgery clerkship as a third-year medical student at Westchester Medical Center, I asked to be part of the transplant team called to other hospitals for organ procurement surgeries. Organ procurement, the preferred term over "organ harvest," is the surgery to remove organs from a donor for placement into a matching recipient. When an organ donor is declared brain dead, transplant coordinators from the donor hospital contact the regional Organ Procurement Organization (OPO) and the national United Network for Organ Sharing (UNOS), which maintains the donor/recipient match list. UNOS and OPO notify the hospitals of the matched organ recipients and coordinate the transportation, nurses, doctors, and operating room schedules. That night, our transplant team received the call that our patient who had end-stage liver disease was a match.

I wish I could say I was calm and poised after receiving the phone call, but I wasn't. Instead, I whooped with enthusiasm and scrambled to find a clean pair of scrubs, my mind racing with anticipation. My dinner was forgotten and my textbooks abandoned. Dr. M, the transplant fellow I would be following, sent me a series of helpful text messages: "We will be gone until at least 2 AM," "Wear scrubs," and "Eat something!" were his pragmatic words of wisdom.

I met the team of Dr. M and Dr. R, a surgery resident, at the Westchester ER. We hopped into a waiting black SUV with "EMERGENCY ORGAN TRANSPORT" emblazoned on the side and sirens and emergency lights flashing. As we zoomed toward New Jersey, Dr. M briefed us on the surgical steps and our expected roles.

We arrived at the hospital and were promptly ushered to the operating room. The donor patient had been declared brain dead earlier that day by two independent physicians not involved with the transplant, and was breathing on a ventilator. We quickly scrubbed in and gowned up, surgical rituals that were familiar to me even in an unfamiliar situation. Dr. M worked quickly, dissecting apart the organs and clamping off blood vessels, while I held retractors and tried to remember the anatomy that had previously been easy to remember. The gravity of the situation and the unique purpose of the surgery made this unlike any experience I'd ever had before, and pulled at my concentration.

It could have been any surgery except for two things. For one, the operating room buzzed with activity. OPO staffers confirmed donation consent forms, nurses took pictures of the organs *in situ*, and the people filled out endless forms detailing the appearance of the organs. The telephone rang constantly with calls from pathologists who were evaluating samples of the donor's liver, the UNOS office about potential matches for the kidneys, and our hospital's surgeons who were preparing the recipient patient for his liver surgery. Another aspect that made this surgery different was the larger-than-usual incision running from the sternal notch to the

pubis symphysis, exposing the abdomen and thorax. The sternum was cut open with a saw and the pericardium opened, revealing the heart underneath. I saw the patient's heart beating in time with the beeping of the monitor, and watched the lungs inflate and deflate with each breathing cycle. I had never seen this level of human anatomy in action in other surgeries.

Standing there, I was so focused on the surgery and the small goal of freeing the liver from the body that I forgot the bigger picture. There was too much to think about in the moment: the patient's aberrant right hepatic artery, her intraabdominal adhesions from past surgeries, and the need to gently retract the bowel. It wasn't until we were ready to place the patient on a bypass and flush the organs with a cold preserving buffer that I realized the enormity of what we were doing. I was chagrined at how easily I had momentarily forgotten the human side of this operation: we were going to stop this patient's heart from beating and lungs from breathing. The anesthesiologist turned off the ventilator, and I watched as the lungs deflated for the last time. The heart beat erratically and then not at all. Intellectually, I understood that this donor patient had no brain activity and all lifesaving efforts had failed. I knew that the family had consented to the donation and said goodbye. Emotionally, however, I objected to standing aside and waiting for the heart to stop beating. It seemed the opposite of what doctors were supposed to do. In any other surgery, cardiac arrest would mean calling a Code Blue, barely-controlled pandemonium, and the use of a defibrillator. In this surgery, it meant the anesthesiologist left the OR early. To the other physicians and nurses in the room, this was another organ procurement surgery. To me, it was coming face to face with the notion that we could watch somebody die. I wanted to ask the others if they had felt this way earlier in their careers, or if my visceral reactions were normal, but instead I kept silent. There seemed to be no time for contemplation or reflection during the surgery. The bustle in the OR did not stop with the patient's heart. The surgeons worried about the viability of the liver, and the OPO staffers hurried to confirm the safe transport of the liver.

As soon as the liver was perfused with the preserving buffer and extracted from the patient's body, Dr. M took the liver to a back table to finish examining it. Dr. R and I carefully dissected the parts of the aorta and vena cava that were needed along with the liver as additional "tubing" in case the vessels attached to the liver could not be used. With the blood flushed out, they were eerily collapsed, white and slightly translucent like jellyfish. The scrub nurse handed me the biggest sutures I'd ever held, and I sewed shut the patient's large incision, my hands shaking with effort and adrenaline the whole time. Dr. M placed the liver and blood vessels into plastic bags, and then into an ice-filled cooler and simple brown cardboard box. I don't know what I expected the box to look like. Something that conveyed the importance of the cargo, surely. Bright orange with neon lettering? Dark black with ominous pictures? Much like the actual operation itself, my expectations had not prepared me for reality.

With the liver safely packaged and our team ready to leave, I took one last look. The operating lights were off and a large drape covered the patient's body. It was over. Later, I tried to reconcile my conflicting thoughts and emotions. Academically, I was thrilled to have seen human anatomy in a living, breathing way. I was full of questions about the technical aspects of transplantation. I wondered about the vast network of people who had worked behind the scenes, and about our donor patient and her family. I thought about our recipient patient in Westchester, waiting for a liver that could prolong his life. Above all, I thought about how hard it must be to make the series of calls: the physicians who determined the donor patient to be

brain dead and filled out the death certificate, the OPO staffers who called the patient's family to ask for permission, and finally, the anesthesiologist who shut off the donor patient's ventilator. In sum, these moments resulted in someone giving herself away so that someone else could receive an extension of life. It is a beautiful concept when viewed from the outside, a hopeful and useful application of medical technology. But viewing transplantation from inside the operating room was more complex than I had imagined. I saw the delicate contrast between the expectation to save lives and the reality of having to stand aside, and appreciated how the two were sometimes related. In this case, the medical "treatment" was not meant for the original patient, and the skill of the surgeon was meant for tenuous, less immediate results. I left the surgery with mixed feelings: I had a great deal of respect for our donor patient, gratitude for having seen such a fascinating procedure, sadness for the ending of a life, and hope for our patient awaiting his new liver. This is the assortment of feelings that transplantation surgeons and donation network staff members feel daily. Seeing the negotiation between life and death, between donor and recipient, and between action and cessation was a humbling experience that I will never forget.

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