



The first identical-twin kidney transplant operation, performed on December 23, 1954.

POSTOPERATIVE COURSE

Once both patients had recovered from their respective operations, we realized there were still several hurdles for Richard to surmount. When one reaches the summit of a high mountain, it can be a bit deflating to realize that one is not truly safe until the return journey has been completed.

Dr. Merrill and I had an honest and understandable difference of opinion about whether or not Richard's diseased native kidneys should be removed. I wanted both kidneys out immediately, since I believed that leaving them in place would pose a high risk of infection or of transmitting disease to the new kidney. But Dr. Merrill firmly believed that Richard should keep at least one of his native kidneys. His reasoning was that it could act as a sponge, absorbing any harmful substances that might remain. In addition, he felt that if the transplanted kidney failed later on, the native kidney might have recovered sufficiently to resume functioning. Even though I strongly disagreed with him, his reasoning was plausible, so I deferred to his judgment, since he was the expert on kidney function and disease.

Nevertheless, I was disturbed by this division within our related professional disciplines. How does one solve such a dilemma? I sought

Dr. Moore's opinion. After consideration of both sides, he felt I should acquiesce, since the decision was more in the domain of the medical service than the surgical service. However, he suggested that I include a note in the patient's record expressing my views, which I did:

1/29/55

Since operation five weeks ago, Richard has done very well. The wounds healed rapidly, his transplant has functioned immediately and continuously. The course of the future is unknown and the best method of future treatment is a matter of conjecture only. In my opinion, his future longevity depends entirely on his transplant as an "all or none" phenomenon. Either the transplant will take or it will not. Therefore every possible and theoretical mode of protecting this transplant should be taken as soon as possible.

Potential dangerous factors to the transplant are hypertension and urinary tract infection. His blood pressure today on serpasil is



Oil painting by the artist Joel Babb showing the kidney transplant operation. Unveiled in 1997, the painting now hangs in the main lobby of the Countway Library of Medicine at Harvard Medical School in Boston.



Ronald Herrick (left) and Richard Herrick toast to each other's good health 10 months after the successful transplant.

160/104 and the diastolic has been constantly in the 100 range. The last urine culture is positive, and presumably from his own kidneys. Removal of his own kidneys potentially will help both of these latter conditions, and therefore ought to be started as soon as possible. I would much prefer to do the nephrectomy next Monday or Tuesday rather than send him home on an anti-hypertensive drug. However, no one knows the proper answer and when an honest difference of opinion exists a compromise is acceptable.

After discharge, Richard continued to thrive. Because function of the donated kidney was so good, Dr. Merrill felt removal of the diseased kidneys was reasonable, but only one at a time. Richard underwent a left nephrectomy on March 29, 1955, and a right nephrectomy on June 20, 1955. He subsequently married his recovery room nurse, and they had two children. Richard died in 1962, eight years after the transplant, from recurrence of his original kidney disease in the transplanted kidney.

John and I learned from our joint experiences with several more identical-twin transplants that recurrence of the original disease could

be prevented by pretransplant removal of both diseased kidneys followed by the use of appropriate cytotoxic drugs.

ONE OPERATION AMONG MANY

I am often asked whether, at the time of the Herrick operation, I was aware of its historic significance. Although I knew the operation was potentially momentous, in truth, I treated it as just part of the week's work. Two days prior to the transplant procedure, I had repaired a double cleft lip, resected a recurrent cancer of the mouth, corrected protuberant ("lop") ears in a child, and closed a burn of the buttocks. And two days after the operation, on Christmas Day, I was in the Newton-Wellesley Hospital Emergency Ward, suturing a laceration of a child's forehead. To the individual patient, *any* operation is momentous. As such, one prepares for each case as it comes, thinks about it ahead of time, and anticipates and identifies trouble spots that could waste time or lead to complications. In that sense, the Herrick operation was no different from any of the other procedures that surrounded it.

A friend who is aware of my religious convictions asked me whether I prayed before the Herrick operation. I replied, somewhat reluctantly, that I did not alter my daily pattern in any way; I consider every day to be a call to prayer. I later learned that Bobby had had the children kneel down the night



Front row (left to right): Richard Herrick, kidney transplant recipient; Ronald Herrick, kidney donor. Back row (left to right): The Brigham transplant team: Joseph E. Murray, surgeon for the recipient; John P. Merrill, nephrologist and co-leader of the team; J. Hartwell Harrison, urological surgeon for the donor.



Richard Herrick greeting Edith Helm in May of 1956. Edith was the third identical-twin transplant recipient and the first transplant recipient to go on to complete a successful pregnancy. She is the longest-living transplant recipient in the world. She and her donor, Wanda Foster, continue to have normal renal function, and both are now grandmothers.

before the operation and say special prayers, explaining to them, “Daddy’s doing an important operation.” The importance of this venture was very real. I won’t say that I offered any special prayers for the success of the Herrick transplant; all I know is that I drove into Boston the morning of the operation determined to do the very best work possible. According to the popular theologian Thomas Merton, one’s work should be “a wordless prayer.”

RIPPLE EFFECT

Dr. Moore later said that if the operation had failed, it could have set the field of transplantation back a decade or more. Even though eight years later, Richard did succumb to renal failure, the operation’s early and complete success was a tremendous shot-in-the-arm to all of us everywhere who were working in the field. Basic scientists were impressed, and even my doubting colleagues admitted it was a great step forward. There were those who dismissed the event as a one-in-a-million occurrence and not something that would add greatly to the store of medical knowledge. They argued, correctly, that there would be very few identical twins like the Herrick brothers, so this advance would not benefit the majority of patients with renal failure. But in my view they failed to understand that this was just the first step. The purpose of this operation was to see whether we could solve several *other* sizable obstacles to kidney transplantation besides immune rejection. This we had done.

The overall reaction around the world was one of buoyed hopes. We had demonstrated that organ transplantation could be life-saving, but we had to make organ transplantation a solution for all, not just for those whose immune systems were identical. Much laboratory work remained to be done, and we would have to find collaborators to help us. Specifically, we had to select one or more of the following goals:

- To alter the donor kidney in some way to make it acceptable to the recipient.
- To alter the recipient to reduce the strength of the immune system's attack on the transplanted organ.
- To develop tests of compatibility between donor and recipient, so that when the two were not identical twins, surgery would be performed only when the chances of success were greatest.

These would be the goals we would pursue for the next 20 years of my career. If we could not achieve them, then our success with the Herrick twins would be just a curiosity, a footnote in the history of medicine. Still, this breakthrough was heady stuff indeed. I was only sorry my dad, who died in October of 1953, had not lived long enough to see it happen.