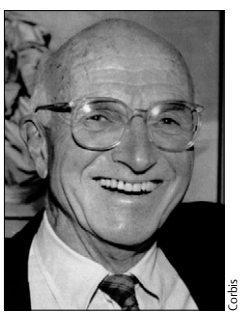
Profile

Joseph Murray: innovative surgeon and pioneer of transplantation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In an age when expertise is ever more narrowly focused, the notion of training in one subspecialty, moving to another, doing research that will earn a Nobel Prize, then switching back to the original sounds distinctly fanciful. Yet in the mid-1900s Joseph Murray—by training a plastic surgeon but celebrated as the Nobel Prize winning pioneer of kidney transplantation—did precisely that. As his late friend and Boston surgical colleague Francis Moore is said to have commented, "Joe's the only guy who ever won a Nobel Prize for pursuing a hobby." An overstatement, of course; but looking back over Murray's career, you can see what he was getting at.

Murray's interest in plastic surgery emerged during World War II, after several years as a military doctor treating injured servicemen at Valley Forge General Hospital in Pennsylvania, USA. He recalls pondering the rejection of allografts, and wondering about the underlying mechanism by which the body distinguished self from other. His boss, surgeon James Barrett Brown, told Murray of a study in which skin grafts exchanged between identical twins survived. Later, the experimental work of British biologist Peter Medawar made it clear that the rejection process was immunological in nature. Murray decided that this was a phenomenon he wanted to study and overcome. He moved to the then Peter Bent Brigham Hospital in Boston where, working with dogs, he began to test the feasibility of renal transplantation.

"There was very close co-operation between physicians, surgeons, pathologists, and immunologists at the Hospital", recalls Cambridge surgeon Sir Roy Calne who spent 2 years working with Murray in the early 1960s. "He was part of the scientific endeavour of the Department. But he was more a surgeon than a scientist. He was very skilful, and it was him who showed how to do the operation." When identical twins, one with kidney disease and the other willing to act as a donor, were referred to Peter Bent Brigham Hospital, Murray and his colleagues responded with enthusiasm but caution. Before proceeding they consulted widely on the ethics of using a live donor. "Murray required an ethical affirmation from society", says transplant surgeon Professor Francis Delmonico of Massachusetts General Hospital. "He's an observant Catholic, but he formulates his own moral positions." The operation, performed in December, 1954, was a success. In 1962 Murray and his team also carried out the first unrelated human renal allograft using the immunosuppressant drug azathioprine, which Calne had been testing in animals.

Long since retired, does Murray still keep a check on what's happening in transplantation? "I sure do. We never dreamed, starting with kidneys back in the early 1950s, that transplantation would become so important worldwide. Some of my contemporaries like to look back on what they call 'the good old days'. I keep telling them that these are the good old days."

Despite of his manifest success in transplantation, Murray was still drawn to plastic surgery. In 1971 he returned to it, working mostly in the USA but also spending some months with the surgeon Paul Brand operating on patients with leprosy in India. As Professor Clyde Barker, the sometime chief of the University of Pennsylvania's transplantation division, points out, Murray takes great pride in his contribution to plastic surgery: "He attaches as much importance to plastic and reconstructive surgery as he does to transplantation. He was not the first but he was among the pioneers of craniofacial reconstruction, a very complex field."

Now 92 years old, Murray is one of those fortunate people to whom life is not only deeply satisfying now, but seems almost always to have been so. In 1990, at the time of his Nobel Prize, he spoke of his grandchildren and of family gatherings on the Massachusetts island of Martha's Vineyard. "We have been blessed in our lives beyond my wildest dreams", he said. In 2007, by this time spending whole summers in a second home on the island, he was interviewed by his local paper, the *Vineyard Gazette*. "The natural beauty of the Vineyard offers all I need", he told the reporter. "I love the dirt roads of Chappy [Chappaquiddick] and the flowers along the fences and the vast blue sky." Nothing has changed. When I spoke to him for *The Lancet* he told me, "My wife and I have been married for 65 years. We look at each other and wonder how we can have had such good fortune." A contentment as profound, as enduring as this might appear irritatingly smug. But that's not how it is when you hear it from Murray. It's a simple statement of an enviable condition.

Murray is currently finishing a book on science and spiritual values inspired by the experiences of his life and to be called *A Tapestry of Living*. "I'm trying to integrate family, surgery, and science", he says. His first title was "a mosaic of living". But a mosaic is composed of multiple pieces; the word tapestry seemed like a better metaphor for what he's aiming to do—which is, in part, to pay tribute to some of the people who have been important in his life, including Peter Medawar, Francis Moore, and Paul Brand. Meanwhile there are other, more basic tasks to be completed—such as the pile of wood waiting to be chopped in the backyard. "What I can do, I enjoy", he says. "What I can't do, I accept."

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