Life and Education

John Webster Kirklin (1917–2004; Figure 1), a medical pioneer as a father of modern heart surgery, was born in Muncie, Indiana. After moving to Minnesota from Indiana at the age of 8 years, John Kirklin earned his bachelor's degree from the University of Minnesota in 1938 and then went on to pursue a medical degree at Harvard University, graduating magna cum laude in 1942. Once graduated, he entered the armed forces and practiced in the Pacific Theatre. After returning, he completed an internship at the University of Pennsylvania Hospital in Philadelphia and then served as a fellow in surgery at the Mayo Clinic, where his father was director of radiology. In 1950, he joined the staff of the Mayo Clinic, pioneering the development of cardiovascular surgery and performing the first operations for a range of congenital heart malformations, including the tetralogy of Fallot. He and his wife Margaret Katherine, also a physician, had two sons and a daughter.

Kirklin in Mayo and later in Alabama

At the Mayo Clinic, he became chairman of the Department of Surgery, and trained a generation of cardiovascular surgeons from all over the world. In 1952, he decided to pursue research on the development of a heart-lung machine. He modified the Gibbon machine, improving the original pumping and oxygenator system, and performed the world’s first series of open-heart operations using a heart-lung machine. He researched his machine and with 9 out of 10 successful cardiopulmonary bypass runs, his team decided that they were ready to proceed with intracardiac repairs in humans. A clinical trial on eight children was approved by the governance of the Mayo Clinic, beginning in 1955. Kirklin became Professor of Surgery in 1960 and Chairman of the Department of Surgery at the Mayo Clinic in 1964. The University of Alabama at Birmingham (UAB) recruited him to chair the Department of Surgery in September 1966. From 1966 to 1982, Kirklin was surgeon in chief at the University Hospital in Birmingham, and also chairman of the Department of Surgery (Figure 2).

Figure 1: Formal portrait of Kirklin, 1970s (Image courtesy of UAB Archives, University of Alabama at Birmingham).
many respects for tasks they performed and envisioned qualified assistants, properly trained and supervised, performing some of the more routine tasks traditionally performed by a physician. Dr. Kirklin remained Chairman of the Department of Surgery until 1982. He continued his cardiovascular surgery practice, as Director of that Division, until 1984. He built the school and the UAB Hospital system into an academic leader, and UAB named its Kirklin Clinic in his honor (Figure 4). He retired from surgery in 1989.

Writings, Achievements and Awards

Afterward, he continued as editor of The Journal of Thoracic and Cardiovascular Surgery, directed several multi-institutional studies on various cardiac procedures, and continued to research. He wrote more than 700 publications. Many of these papers dealt with improving operative techniques and outcomes, assessing perioperative and long-term risk factors, and better understanding the pathophysiology of the cardiopulmonary bypass; but he often stated that his greatest contribution was his textbook, Cardiac Surgery: Morphology, Diagnostic Criteria, Natural History, Techniques, Results, and Indications\(^{1,6,7}\), which remains an important reference text in the field. He received many awards, including the American Heart Association research achievement award, the Rudolph Matas award in vascular surgery, the Rene Leriche prize of the Society of International Surgery and the American Surgical
Association medallion for scientific achievement. In 1972, he was awarded the Lister medal by the Royal College of Surgeons. Many international universities awarded him honorary degrees, including, the University of Munich, Germany, and Bordeaux and Marseille Universities, France. He was a member of more than 60 local, state, national and international associations and scientific societies, including the American Association for Thoracic Surgery (serving as President from 1978 to 1979), the American College of Cardiology, the American Heart Association, the American College of Surgeons, and the National Academy of Sciences Institute of Medicine. He served as the 59th president of The American Association for Thoracic Surgery.

Over his lifetime, Dr. Kirklin not only made tremendous leaps in the cardiovascular surgery field, but also molded institutions and future physicians. He won 40 national and international awards, encouraged the development of computerized intensive care units, began the first surgical assistant program, and co-wrote a reference textbook as outlined above. He died at the age of 86 years. The Kirklins have continued the medical tradition to this day: his son is a cardiac surgeon and director of cardiothoracic transplantation at UAB.

CONFICT OF INTEREST STATEMENT

The author has no conflict of interest to disclose.

SOURCE OF SUPPORT

There is no funding source to report for this manuscript.

REFERENCES


International Journal of History and Philosophy of Medicine 2015; 5: 10508